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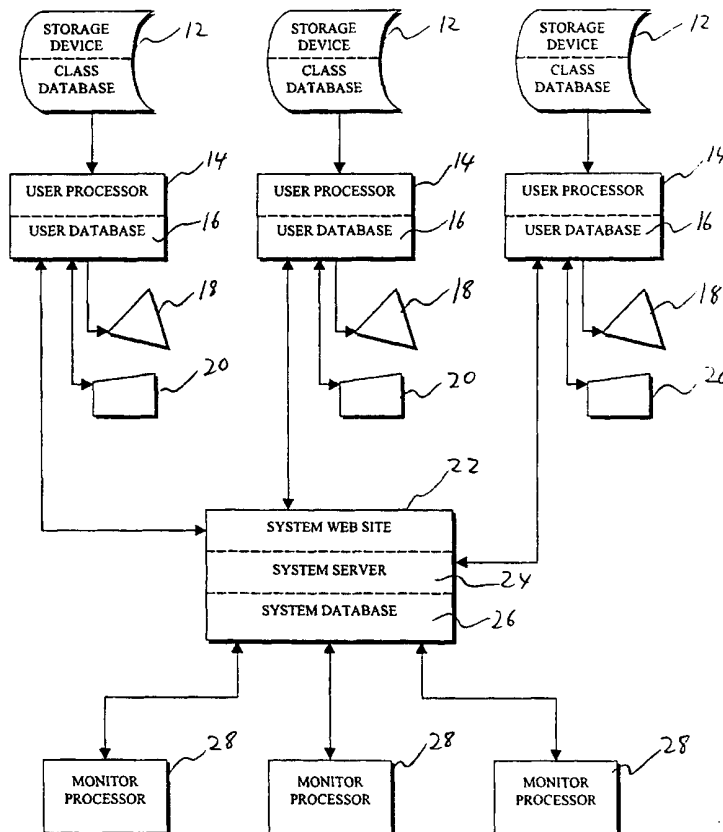
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(54) Title: MULTIMEDIA TRAINING SYSTEM



(57) Abstract: The multimedia training system of the present invention employs a plurality of user interfaces to present class material to the users in a balanced linearly progressive manner. The multimedia training system enables users to learn, review and reinforce the class material at their own pace. The multimedia training system also maintains the current class material and facilitates pre-class and post-class assessments of the user's knowledge to determine the user's knowledge. In one embodiment (Fig. 1), a CD-ROM (12) or other local storage device containing the program and content of the class material are provided to the user. In another embodiment (Fig. 26), the program and content of the class material are stored on a system storage device (1026) that the user communicates with over the Internet (1600).



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MULTIMEDIA TRAINING SYSTEM

TECHNICAL FIELD

5 The present invention relates in general to a training system, and in particular to a multimedia training which presents classes to the user in a balanced linear understandable format, enables the user to learn the class material at the user's own pace and provides appropriate feedback regarding the user's understanding of the class material.

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BACKGROUND OF THE INVENTION

Training employees is one of the most difficult problems facing businesses today. Businesses present, or often turn to outside sources to present, classes or
15 programs for their employees to learn information and materials necessary for their employees to properly perform their jobs. These classes or programs vary in the duration of the class, the methods of teaching or presenting the material and the volume of information and material provided to the employees. Some employees learn, understand and retain the information and materials provided in these classes
20 or programs and some do not. Some of the classes or programs have methods for assessing the employees knowledge base before and after the programs or classes and some do not.

Businesses, or outside sources, also provide employees with written training materials separate from or in conjunction with these programs and classes. The

volume and usefulness of these training materials varies. If the materials are not suited to the employee's abilities, the employee may not be inclined to carefully review the materials. Some written training materials have methods for assessing the employee's knowledge before and after the employee reviews or uses the training materials and some do not.

Some of these programs do not provide sufficient feedback for the businesses, some do not produce better trained employees, some do not include pre-class skills assessments or post-class skills assessments, and some do not focus upon the individual needs of the employees. Some businesses also have difficulty deciding which training programs best suit the needs of their employees. Some businesses therefore spend substantial investments on training programs, classes and materials which are of limited use to their employees. Moreover, some businesses do not have the appropriate facilities, staff, time or budgets to send employees to appropriate training classes or to provide employees with appropriate training materials.

Computerized training programs have been developed. Some of the commercially available computerized training programs are complicated, difficult to use and require the employee to first learn how to use the software before the employee can focus on the information or material presented by the program. Additionally, some of these computerized training programs are difficult to maintain current or lack automatic update features.

Accordingly, there is a need for a cost-effective and efficient training system which presents the information and class material to be learned in a balanced linear understandable format, immediately focuses the user on the information and

material to be learned, produces better trained employees, allows the user to learn at the user's own pace, maintains the material current, and provides sufficient feedback for the employers or businesses including pre-program assessments and post-program assessments.

DISCLOSURE OF THE INVENTION

The multimedia training system of the present invention overcomes the
5 above problems in a cost-efficient and effective manner. The multimedia training
system of the present invention enables each user or individual to use the system at
his or her own pace and thereby accommodates both fast and slow learners. For
brevity, the training system of the present invention is referred to herein alternatively
as the "multimedia training system," "training system," and "system." However, the
10 scope of the present invention is not intended to be limited by such abbreviations or
any other abbreviated term used herein to describe the present invention.

The system includes a plurality of user interfaces to present the class
material to the user with video, audio, graphical and textual presentations in an
understandable manner using the techniques of balanced perception and linear
15 progression. The system enhances the user's ability to relate to the material and
focus on the educational content. The system includes a base or pre-class
assessment and a post-class or final assessment which enables the user, as well
as the user's employer, to determine the amount of information learned by the user
while using the training system. The training system also enables the user to focus
20 immediately on the training material instead of the software of the system. The
disciplined training approach provided by the system of the present invention
provides a reinforced learning environment and provides the user with the
appropriate positive reinforcement and feedback on the information being learned
by the user.

It is therefore an object of the present invention to provide a multimedia training system.

Another object of the present invention is to provide a multimedia training system which uses the techniques of balanced perception and linear progression to
5 teach information to the user.

Another object of the present invention is to provide a multimedia training system which enables the user to learn at his or her own pace.

A further object of the present invention is to provide a multimedia training system which selects appropriate user interfaces to present the information to the
10 user depending on the type of information to be learned by the user.

A yet further object of the present invention is to provide a multimedia training system which assesses the user's knowledge before and after the user takes the training class.

Yet a further object of the present invention is to provide a multimedia
15 training system that enables a user to access training classes over the internet.

Other objects, features and advantages of the invention will be apparent from the following detailed disclosure, taken in conjunction with the accompanying sheets of drawings, wherein like numerals refer to like parts.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic diagram of a first embodiment of the multimedia training system of the present invention;

5 Figs. 1A, 1B, 1C, 1D, 1E, and 1F are illustrations of a sample class presented by the first embodiment of the multimedia training system of the present invention;

Figs. 2A, 2B and 2C are schematic flowcharts of the registration, initiation and logon functions of the first embodiment of the multimedia training system of the present invention;

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Fig. 3A is an illustration of the website visit interface presented to the user by the first embodiment of the multimedia training system of the present invention;

Fig. 3B is a schematic flowchart of the website visit interface of the first embodiment of the multimedia training system of the present invention;

15 Fig. 4 is an illustration of the quiz interface presented to the user by the first embodiment of the multimedia training system of the present invention;

Figs. 5A and 5B are schematic flowcharts of the quiz interface of the first embodiment of the multimedia training system of the present invention;

Fig. 6 is an illustration of the process interface presented to the user by the first embodiment of the multimedia training system of the present invention;

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Figs. 7A and 7B are schematic flowcharts of the process interface of the first embodiment of the multimedia training system of the present invention;

Fig. 8 is an illustration of the conceptual interface presented to the user by the first embodiment of the multimedia training system of the present invention;

Fig. 9 is a schematic flowchart of the conceptual interface of the first embodiment of the multimedia training system of the present invention;

Fig. 10 is an illustration of the exercise interface presented to the user by the first embodiment of the multimedia training system of the present invention;

5 Fig. 11 is a schematic flowchart of the exercise interface of the first embodiment of the multimedia training system of the present invention;

Fig. 12 is a schematic flowchart of the launch external program interface of the first embodiment of the multimedia training system of the present invention;

10 Fig. 13A is an illustration of the shockwave interface presented to the user by the first embodiment of the multimedia training system of the present invention;

Fig. 13B is a schematic flowchart of the shockwave interface of the first embodiment of the multimedia training system of the present invention;

15 Figs. 14A and 14B are schematic flowcharts of the next and previous features of the first embodiment of the multimedia training system of the present invention;

Fig. 15 is a schematic flowchart of the content navigator function of the first embodiment of the multimedia training system of the present invention;

Fig. 16 is a schematic flowchart of the objectives function of the first embodiment of the multimedia training system of the present invention;

20 Fig. 17 is a schematic flowchart of the status function of the first embodiment of the multimedia training system of the present invention;

Fig. 18 is a schematic flowchart of the notes function of the first embodiment of the multimedia training system of the present invention;

Fig. 19 is a schematic flowchart of the chat function of the first embodiment of the multimedia training system of the present invention;

Fig. 20 is a schematic flowchart of the discussion function of the first embodiment of the multimedia training system of the present invention;

5 Fig. 21 is a schematic flowchart of the glossary function of the first embodiment of the multimedia training system of the present invention;

Fig. 22 is a schematic flowchart of the print function of the first embodiment of the multimedia training system of the present invention;

10 Fig. 23 is a schematic flowchart of the resources function of the first embodiment of the multimedia training system of the present invention;

Fig. 24 is a schematic diagram of a physical network for implementing a second embodiment of the multimedia training system of the present invention;

Fig. 25 is a high level overview of the second embodiment of the multimedia training system of the present invention;

15 Fig. 26 is a schematic diagram of the second embodiment of the multimedia training system of the present invention;

Figs. 26A, 26B, 26C, 26D, 26E, and 26F are illustrations of a sample class presented by the second embodiment of multimedia training system of the present invention;

20 Figs. 27A, 27B and 27C are schematic flowcharts of the registration, initiation and logon functions of the second embodiment of multimedia training system of the present invention;

Fig. 28A is an illustration of the website visit interface presented to the user by the second embodiment of the multimedia training system of the present invention;

Fig. 28B is a schematic flowchart of the website visit interface of second
5 embodiment of the multimedia training system of the present invention;

Fig. 29 is an illustration of the quiz interface presented to the user by the second embodiment of the multimedia training system of the present invention;

Figs. 30A and 30B are schematic flowcharts of the quiz interface of the second embodiment of the multimedia training system of the present invention;

10 Fig. 31 is an illustration of the process interface presented to the user by the second embodiment of the multimedia training system of the present invention;

Figs. 32A and 32B are schematic flowcharts of the process interface of the second embodiment of the multimedia training system of the present invention;

15 Fig. 33 is an illustration of the conceptual interface presented to the user by the second embodiment of the multimedia training system of the present invention;

Fig. 34 is a schematic flowchart of the conceptual interface of the second embodiment of the multimedia training system of the present invention;

Fig. 35 is an illustration of the exercise interface presented to the user by the second embodiment of the multimedia training system of the present invention;

20 Fig. 36 is a schematic flowchart of the exercise interface of the second embodiment of the multimedia training system of the present invention;

Figs. 37A and 37B are schematic flowcharts of the next and previous features of the second embodiment of the multimedia training system of the present invention;

Fig. 38 is a schematic flowchart of the content navigator function of the second embodiment of the multimedia training system of the present invention;

Fig. 39 is a schematic flowchart of the objectives function of the second embodiment of the multimedia training system of the present invention;

5 Fig. 40 is a schematic flowchart of the status function of the second embodiment of the multimedia training system of the present invention;

Fig. 41 is a schematic flowchart of the notes function of the second embodiment of the multimedia training system of the present invention;

10 Fig. 42 is a schematic flowchart of the chat function of the second embodiment of the multimedia training system of the present invention;

Fig. 43 is a schematic flowchart of the discussion function of the second embodiment of the multimedia training system of the present invention;

Fig. 44 is a schematic flowchart of the glossary function of the second embodiment of the multimedia training system of the present invention; and

15 Fig. 45 is a schematic flowchart of the resources function of the second embodiment of the multimedia training system of the present invention.

MODE FOR CARRYING OUT THE INVENTION

Referring now to the drawings, and particularly to Fig. 1, the multimedia
5 training system of the present invention, generally indicated by numeral 10, is
adapted to train a plurality of users. The system 10 includes a plurality of program
and content storage devices 12 which are provided to the users. In the first
embodiment, the program and content storage devices 12 are preferably CD-
ROMs, although it should be appreciated that the system 10 could provide the
10 appropriate program and content to the users through other suitable storage
devices or through conventional electronic communications such as e-mail or the
Internet. It should be appreciated that if the storage medium is the Internet
(alternatively referred to as a data network) certain functions of the present system
10, such as the on-line update and the synchronize functions, may be unnecessary
15 as described in greater detail below. Each CD-ROM or storage device 12 includes
or stores the multimedia training system program which is preferably downloaded
on the user's processor and one or more predetermined multimedia training system
classes, as described in more detail below. The users of the multimedia training
system 10: (i) may have the same classes or different classes on their storage
20 devices 12; (ii) may be in the same location or different locations; and (iii) may be in
the same business or different businesses.

The multimedia training system classes, referred to herein as classes or
alternatively as training material, are preferably divided into multiple modules. The
modules are preferably divided into multiple activities. The activities are preferably

divided into multiple tasks. The system 10 presents in a linear fashion to the user, the next task, the activity that that contains that task, and the module that contains that activity. The system 10 selects the appropriate interface for accessing the task or presenting the information of the task to the user. After the user completes the task, the system 10 places a flag or checkmark (or bookmark) associated with or next to the task to indicate that the user has completed the task. The system 10 enables the user to select certain different (or non-linear) tasks to view other information in the class in a review mode. The storage device 12 includes one or more classes or class databases which the user will take or which the user's employer, teacher or monitor desires the user to take.

Figs. 1A, 1B, 1C, 1D, 1E and 1F illustrate an example of the linear construction of a class, modules in the class, activities in the modules, and tasks in the activities. The class generally relates to "Computer Networks." The class includes modules such as "Network Operating Systems and Protocols," "Network Types and Services," "Analysis of the Physical Network Components," "Cables, Jacks, and Hubs," "Understanding the Client's Network Components," "Installing a New Network Device" and a "Final Exam." The module "Network Types and Services" as illustrated in Fig. 1B has three activities including "The Different Types of Networks," "What can you do with a Network?," and a "Quiz." The activity "What can you do with a Network?" includes several tasks such as "Overview of Network Services," "Chat," "Electronic Mail," "World Wide Web," "File Sharing," "Security," "Device Sharing," "Conclusions" and "Exercise." The system guides the user through these modules, activities and task in a linear fashion (except for the limited

review mode) and uses checkmarks to indicate that the user has completed certain tasks.

Referring back to Fig. 1, the system 10 includes user processors 14 having local or user databases 16, and associated user monitors or displays 18 and input devices 20. The processors, monitors and input devices are preferably conventional personal computers which have sufficient memory and CD-ROM capabilities, although it should be appreciated that the system of the present invention could include suitable alternative system access devices for the user including, but not limited to, networked computers, dummy terminals and hand-held personal digital assistants. Each user processor communicates in a conventional manner with a system website 22 which includes a system server 24 and a system database 26. The website 22 also includes a user interface (not shown) which enables the employer or teacher to view class results, to maintain course curriculum and to conduct appropriate user maintenance, such as user registration. The system server 24 communicates with monitor processors 28 which are operated by monitors of the users such as employers or teachers of the users to monitor the progress of the users through the classes provided on the storage devices 12. In one preferred embodiment, the system is adapted to provide feedback regarding the users' understanding of the training material.

The system 10 stores certain information on the user database 16 including the: (i) user's username and contact information; (ii) user's password (iii) user's bookmarks for the classes and time periods for reviewing the tasks; (iv) user's bookmarks for the quizzes; (v) user's progress in the class, quiz grades and time periods for answering the quiz questions; (vi) user notes; and (vii) any recent

updates to the classes stored on the storage devices 12. The system 10 periodically synchronizes the data between user database 16 and system database 26. Specifically after each time the user completes a module and before the user exits the system, the system 10 synchronizes the user database 16 with the system
5 database 26. To synchronize the databases, system 10 pulls or retrieves the user bookmark in a class from the system server 24. The system 10 stores this information in the local database 16. The system 10 then pulls or retrieves the user grades data from the system server and merges the grade data with the local database 16. The system 10 adopts the most up to date bookmark and grades data
10 between the server database 24 and the local database 16. The system 10 then returns to the last activated user interface.

The system database 26 also includes the classes provided to the user and updates thereof. Whenever the user exits the system 10, completes a module, completes a class or manually selects the on-line update command, the system 10
15 checks the local or user database 16 to determine if there is any updated information relating to the retrieved information. This enables the class material to remain current.

The employees or monitors of the user may use the monitor processors 28 to check the status of the users in taking the classes including the results of the
20 quizzes taken by the user. Additionally, when the user completes a class, the system server 24 preferably sends an e-mail message to the monitor's processor to inform the monitor that the user has completed the class.

Registration, Initiation and Logon

The system 10 includes an initialization, registration and logon process 30 as illustrated in Figs. 2A, 2B and 2C. For purposes of this application, the system 10 is described in regard to a single user, although it should be appreciated that the system of the present invention is adapted for multiple concurrent users. The user places the appropriate storage device or CD-ROM 12 in the user processor 14 and uses the input device 20 to instruct the processor 14 to run 32 the program. The system 10 determines 34 if the processor 14 has multiple CD-ROM drives. If the processor 14 has multiple CD-ROM drives, the system 10 provides a message 36 on the user display 18 warning the user to place the CD-ROM into the top most drive of the user processor 14. If the user processor 14 does not have multiple CD-ROM drives, or after providing the warning, the system 10 queries 38 the user to determine if the user has run the system 10 on the specific user processor 14 being used by the user. If the user has not previously run the system 10 on this processor 14, the system 10 obtains 40 certain information from the user. The system 10 sends 42 this information to the system server 24 through the Internet or data network. The system 10 determines 44 if the user is authorized to access the system server 24 based on the user name and password submitted by the user. If the system 10 is unable to successfully logon to the system server 24 through the internet, the system 10 repeats the registration process prior to allowing the user to use the system 10. If the user is authorized to use the system 10, the system server 24 records or stores 46 the user information such as the username, contact

information and password, and a list of classes associated with the user or user code.

The system 10 returns 48 a list of available classes to the user processor 14. The system 10 determines 50 if the user has completed any of the classes or tasks
5 in the classes. If the user has completed certain classes or tasks in the classes, the system marks 52 the completed classes and tasks as in a review mode. The review mode of the system 10 enables the user to review certain of the tasks (excluding quiz questions). The system 10 does not store user information or results such as the time the user spends reviewing a task in the review mode.

10 The system 10 enables the user to select 54 a class. The system 10 determines 56 if the correct storage device or CD-ROM 12 is in the top most drive. If the storage device 12 is not in the correct position, the system 10 displays a message 58 to the user to correct the position of the storage device 12. If the storage device is in the correct position, the system 10 transfers 60 the class status
15 to the system server 24. If the system 10 is unable to connect 62 to the system server 24, the system 10 repeats the process of transferring of the class status to the system server 24. If the system 10 connects to the system server 24, the system 10 synchronizes 64 the system database 26 with the appropriate data in the local or user database 16.

20 The system 10 determines 66 which interface is appropriate for the next task from the class database on the storage device 12. The class database includes a task-type field associated with each task. The system 10 uses the value contained in this field to determine the appropriate interface. Specifically, the system 10 may:
(i) direct the user to a website visit interface 68 to view time sensitive or rapidly

changing time-sensitive data or information relevant to the class, such as late-breaking technical bulletins or system requirement updates or changes; (ii) present the user with a quiz interface 70 to enable the user to answer the quiz questions; (iii) present the user with a process interface 72 to teach a process to the user; (iv) present the user with a conceptual interface 74 to teach a concept or theory to the user; (v) present the user with the exercise interface 76 to enable the user perform an exercise such as interactive simulations or games to enhance a class concept or topic; (vi) direct the user to a launch external program interface 78 to enable the user to run another software program through the system 10; or may (v) direct the user to a shockwave interface 80 to view streamed media from the Internet or the storage device 12.

Website Visit Interface

Referring now to Figs. 3A and 3B, the system 10 directs the user to visit the appropriate website, where the user may view time sensitive or rapidly changing data or information (including updates to the classes or training), or other websites relevant to the class. The system 10 enables the user to visit such websites while maintaining the system open for the user. Specifically, the system 10 displays the website visited in a separate browser window (not shown) while maintaining the website interface 68 on the user's screen. This enables the user to access the system functions which are illustrated in Fig. 3A. Specifically, the website interface 68 includes a content navigator button 161, a status button 165, a notes button 167, a chat button 169, a discussion button 171, a next button 173, a previous button

175, a glossary or index button 179 and a resources button 181, as further discussed below.

The system 10 determines 82 whether the user has disabled the explanation screen for website visit interface 68. If the user has disabled the explanation screen for website visit interface 68, the system 10 begins the website visit function, as described below. If the user has not disabled the explanation screen for website visit interface 68, the system 10 displays 84 the explanation screen for website visit interface 68 on the user's display 18. The system 10 enables the user to disable 86 the explanation screen for future website visits. After the user indicates 88 that he or she has read the explanation screen, the system 10 begins the website visit function, as described below.

The system 10 determines 90 the default web browser on the user processor 14. If the user processor 14 does not have a default web browser, the system 10 terminates 92 the website visit. After determining 90 the default web browser on the user processor 14, the system 10 opens 94 the default web browser, obtains or pulls 96 the website URL for the current task from the local database 16 and sends 98 the URL to the web browser which connects the user processor 14 to the website. The system 10 pauses or allows 100 the user to interact with the website. After the user finishes the website visits, the system 10 closes 102 the web browser and the system 10 returns or leaves the user at the website interface 68 illustrated in Fig. 3A.

Quiz Interface

The quiz interface 70 of the multimedia training system 10 of the present invention is preferably used to test the user's knowledge. In the beginning of each class, the first activity of the user is to take a pre-class quiz which determines the user's pre-class knowledge. The classes also include quizzes throughout the class (i.e., while the user is accessing the training material) which test the user's progress and which reinforce the material learned by the user. Each class further includes a final exam which the user must take to complete the class (i.e., after the user has accessed the training material).

The system 10 presents the quiz interface 70, as illustrated in Fig. 4, to the user. The quiz interface 70 includes a top left box or display area 103 for displaying still images or photographs to the user, a top right box or display area 104 for displaying text including questions related to the training material to the user and a bottom horizontally extending lower box or display area 106 for displaying the list of possible answers to the question to the user. The quiz interface 70 also includes a content navigator button 161, a status button 165, a notes button 167, a chat button 169, a discussion button 171, a next button 173, a previous button 175, a glossary or index button 179 and a resources button 181. The system 10 enables the user to click on these buttons to perform certain functions, as further described below.

The function of the quiz interface 70 is further illustrated in Figs. 5A and 5B. The system 10 determines 122 whether the user has disabled the explanation screen for the quiz interface 70. If the user disabled the explanation screen for the quiz interface 70, the system 10 begins the quiz interface function, as described

below. If the user has not disabled the explanation screen for the quiz interface 70, the system 10 displays 124 the explanation screen for the quiz interface 70 on the user's display 18. The system 10 enables the user to disable 126 the explanation screen for the quiz interface 70. After the user indicates 128 that he or she has
5 read the explanation screen, the system 10 begins the quiz interface function, as described below.

The system 10 gets or retrieves 130 the next quiz question, the accompanying still image and the list of possible answers from the class database on the storage device 12 or any updates to the class on the user or local database
10 16. The system 10 determines 132 if the user has completed the current quiz question. If the user has completed the current quiz question, the system displays 134 an error message on the user display 18, allows the user to acknowledge 136 the error message and then pauses 138 for further user interaction. If the user has not completed the current quiz question, the system 10 displays 140 the still
15 photograph in the top left box 103 of the quiz interface 70, displays 142 the question in the top right box 104 of the quiz interface 70 and displays 144 a plurality of possible answers for the user to select in the lower box 106 of the quiz interface 70. The system 10 then pauses 138 for further user interaction and specifically to allow the user to answer the question by selecting one of the answer choice option
20 buttons as illustrated in Fig. 4.

The system 10 thus enables the user to select 146 one of the answers. If this is the first question in the quiz and the user selects 148 the previous button, the system displays 150 an error message. After the user acknowledges 152 the error message, the system 10 pauses to allow the user to answer the current question.

After selecting 146 one of the answers, the user hits 154 the next button and the system enters or stores 156 the answer selected by the user and the time it took to answer the question in the local user database 16. The system 10 determines 158 if there are more quiz questions in the current quiz. If there are more quiz questions, the system 10 repeats the process by getting or retrieving 130 the next quiz question, still image and answers for the class database, as described above. When there are no more quiz questions in the current quiz, the system 10 sends 159 the grades to the system server 24.

In the quiz interface 70, the user may also: (i) exit 160 the system 10; (ii) use the content navigator to review 162 other quiz questions in the same quiz; (iii) determine 166 the status of the quiz; (iv) go to the previous task 176 (as long as the current task is not the first quiz question); and (vi) stop the quiz 178. The system 10 does not allow or provides an error message (EM) to the user, if while in the quiz interface, the user attempts to obtain the objectives features 164, the notes feature 168, the chat feature 170, the discussion feature 172, the glossary or index feature 180 or the resource feature 182.

Process Interface

The process interface 72 of the multimedia training system 10 of the present invention is preferably used to teach step-by-step instructions of a process to the user. The process interface 72, as illustrated in Fig. 6, includes three display areas or boxes. The process interface 72 includes a digital video box or display area 192 in the upper left-hand corner, a supporting graphics box or display area 194 in the

lower left-hand corner below the digital video box 192 and a vertically extending textual box or display area 196 on the right-hand side of the process interface 72. The digital video box 192 presents a video or movie to the user. The supporting graphics box 194 presents a still photograph or image to the user. The textual box 5 196 presents textual instructions to the user in bullet point format. The display areas are arranged in this manner based on the function of the user's brain. The eyes of right-handed users attach importance to the video on the upper left hand side and feed into the right side of the brain. The eyes of right-handed users attach importance of text on the right hand side and feed into the left side of the brain. It 10 should be appreciated that the multimedia training system of the present invention could be adapted to switch the placement of the display areas for left-handed users. The process interface 72 thereby maximizes the user's retention of the information in the class.

The process interface 72 includes a content navigator button 161, a status 15 button 165, a notes button 167, a chat button 169, a discussion button 171, a next button 173, a previous button 175, an index or glossary button 179, and a resources button 181. The process interface also includes a start button 182 for starting the movie or continuing the movie, a stop button 183 for stopping the movie and a print button 184 for printing the tasks in chronological order.

20 Referring now to Figs. 7A and 7B, the system 10 determines 202 whether the user has disabled the explanation screen for the process interface 72. If the user has disabled the explanation screen for the process interface 72, the system 10 begins the process interface function, as described below. If the user has not disabled the explanation screen for the process interface 72, the system 10 displays

204 the explanation screen for the process interface 72 on the user's display 18. The system 10 enables the user to disable 206 the explanation screen for the process interface 72. After the user indicates 208 that he or she has read the explanation screen, the system 10 begins the process interface function.

5 The system 10 pulls or retrieves 210 the timing and file locations for still photographs, and the timing and text for the textual bullets from the class database on the storage device 12. The system 10 determines 212 if the user has disabled the auto start function for movies displayed in the process interface 70. If the user has disabled the auto start function for the movies, the system lights 213 the stop
10 button 183 on the process interface 72 and pauses 214 for user interaction. If the user has not disabled the auto start on movies for the process interface 72, the system 10 then begins to play 216 the movie in the top left box 192 of the process interface 70 and lights 218 the start button 182. As the movie plays 220, the system 10 determines 222 on short regular time intervals when it is time for the next textual
15 bullet to appear in the right side box 196 by comparing the current movie time with the timings retrieved from the class database. If it is not time for the next bullet to appear, the movie continues to play. If it is time for the next text bullet to appear, the system 10 places 223 the text in the next slot available in the right box 196 and continues to play the movie. The system 10 further determines 224 when it is time
20 for an image to appear in the lower left hand box 194. If it is not time for an image to appear in the lower left-hand box 194, the system 10 continues to play the movie. If it is time for an image to appear in the lower left-hand box 194, the system 10 pulls or retrieves 226 the image file from the storage device 12, displays 226 the image in the lower left hand box 194 and continues to play 220 the movie. After the

movie ends 228, the system 10 saves the user feedback, such as the amount of time the user spent viewing the task and the user notes, to the local database and pauses 214 for user interaction.

At any time, the user can hit 232 the stop button 183 to stop the movie.

5 When in the process interface 72, the system 10 enables the user to: (i) exit 160 the system; (ii) use the content navigator to review 162 the content; (iii) review 164 the objectives of the class (if this feature is present in the system 10); (iv) determine 166 the status of the class or task; (v) review or create 168 notes regarding the class or the task or class; (vi) chat 170 with other students or teachers; (vii) have
10 discussions 172 with students or teachers; (viii) go to 174 the next task; (ix) go to 176 the previous task; (x) stop 178 the movie; (xi) use 180 the glossary or index to look up definitions; and (xii) use 182 the resources to obtain the location of supplemental material. If the play button is hit 238, system 10 lights 240 the stop button and begins 216 to play the movie. The process interface 72 also includes a
15 print button 184. The user may hit 236 the print button to print the stills and textual bullets in a chronological output order. After printing, the system 10 returns 237 to the process interface or pauses 214 for user interaction.

Conceptual Interface

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The conceptual interface 74 of the multimedia training system 10 of the present invention is used to teach concepts and theories to the user. The conceptual interface 74, as illustrated in Fig. 8, includes two display areas or boxes. The top box or display area 246 displays a movie, digital video or graphic animation.

The lower box or display area 248 presents one or more textual statements or definitions to the user referencing the movie, digital video or graphical animation. The conceptual interface 74 includes a content navigator button 161, a status button 165, a notes button 167, a chat button 169, a discussion button 171, a next button 5 173, a previous button 175, a glossary or index button 179 and a resources button 181. The system 10 enables the user to click on these buttons to perform certain functions, as described below. The conceptual interface also includes a start button 251 for starting the movie and a stop button 253 for stopping the movie.

Referring now also to Fig. 9, the system 10 determines 252 whether the user 10 has disabled the explanation screen for the conceptual interface 74. If the user has disabled the explanation screen for the conceptual interface 74, the system 10 begins the conceptual interface function, as described below. If the user has not disabled the explanation screen for the conceptual interface 74, the system 10 displays 254 the explanation screen for the conceptual interface 74 on the user's 15 display 18. The system 10 enables the user to disable 256 the explanation screen for the conceptual interface 74. After the user indicates 258 that he or she has read the explanation screen, the system 10 begins the conceptual interface function, as described below.

The system 10 pulls or retrieves 261 the timing for and text of the definitions 20 from the class database on the storage device 12. The system 10 determines 260 if the user has disabled the auto start of movies. If the user has disabled the auto start of the movies, the system 10 lights 262 the stop button 253, and pauses 264 for further user interaction. If the user has not disabled the auto start of movies, the system 10 then begins 266 to play the movie in the display box and lights 268 the

start button 251. The movie plays 270 in the display area 246, and the system 10 determines 272 if it is time for a definition to appear in the definition box. xlf it is not time for a definition to appear in the definition box, the movie continues to play. If it is time for the definition to appear in the definition box, the system 10 displays 274
5 the definition in the lower or definition box or area 248 and continues to play the movie. After the movie ends 276, the system saves 277 the user feedback in the local database and pauses 264 for user interaction.

If the user hits 278 the play button 251, the system 10 lights 280 the stop button 253 and begins to play 266 the movie. The stop button 253 may be pressed
10 at any time. If the movie was playing at the time the stop button is hit 178, the movie is stopped, the stop button is lit 262 and the system 10 pauses 264 for user interaction.

In the conceptual interface 74, the system 10 enables the user to: (i) exit 160 the system; (ii) use the content navigator to review the content of the class;
15 (iii) review 164 the objectives of the class (if the feature is made available by the system 10); (iv) determine 166 the status of the quiz; (v) review or create 168 notes regarding the class or the quiz; (vi) chat 170 with other students or teachers; (vii) have discussions 172 with other students or teachers; (viii) go to 174 the next task; (ix) go to 176 the previous task; (x) stop 178 the quiz; (xi) use 180 the glossary or
20 index; and (xii) use 182 the resources.

Exercise Interface

The exercise interface 76 of the multimedia training system 10 of the present invention enables the user to perform certain exercises associated with the classes, and in particular certain modules or activities. The exercise interface 76, as illustrated in Fig. 10, includes a central display box or area 301 enabling the user to perform and complete the exercise. The exercise interface 76 also includes, a content navigator button 161, a status button 165, a notes button 167, a chat button 169, a discussion button 171, a next button 173, a previous button 175, a glossary or index button 179 and a resources button 181. The system 10 enables the user to click on these buttons to perform certain functions, as described below.

Referring now to Fig. 11, the system 10 determines 302 whether the user has disabled the explanation screen for the exercise interface 76. If the user has disabled the explanation screen for the exercise interface, the system 10 begins the exercise interface function, as described below. If the user has not disabled the explanation screen for the exercise interface 76, the system displays 304 the explanation screen for the exercise interface 76 on the user's display 18. The system 10 enables the user to disable 306 the explanation screen for the exercise interface 76. After the user indicates 308 that he or she has read the explanation screen, the system 10 begins the exercise interface function, as described below.

The system 10 pulls or retrieves 310 the locations of the interactive content for the exercise from the class database. The system 10 executes 312 the exercise and waits for notification that the exercise has been successfully completed or other instructions from the user. Upon completion of the exercise, the system 10 saves

314 the user feedback in the local database and pauses 320 for further user interaction.

In the exercise interface 76, the system 10 enables the user to: (i) exit 160 the system; (ii) use 162 the content navigator to review the content; (iii) review 164 the objectives of the class (if the feature is made available by the system 10); (iv) 5 determine 166 the status of the quiz; (v) review or create 168 notes regarding the class or the exercise; (vi) chat 170 with other students or professors; (vii) have discussions 172 with other students or teachers; (viii) go to 174 the next task; (ix) go to 176 the previous task; (x) stop 178 the quiz; (xi) use 180 the glossary or index; 10 and (xii) use 182 the resources.

Launch External Program Interface

The launch external program interface 78 of the multimedia training system 15 10 of the present invention enables the user to run an external program. Referring now to Fig. 12, the system 10 determines 321 whether the user has disabled the explanation screen for the launch external program interface 78. If the user has disabled the explanation screen for the launch external program interface 78, the system 10 begins the launch external program interface function, as described 20 below. If the user has not disabled the explanation screen for the launch external program interface 78, the system 10 displays 322 the explanation screen for the launch external program interface 78 on the user's display 18. The system 10 enables the user to disable 323 the explanation screen for the launch external program interface 78. After the user indicated 324 that he or she has read the

explanation screen, the system 10 begins the launch external program interface function, as described below.

The system 10 pulls or retrieves 325 the external program path from the class database on the storage device, launches 326 the external program, waits for
5 the external program to finish 327 execution, saves 328 the user data to the local database 16 and returns 329 to the last activated user interface.

Shockwave Interface

10 Referring now to Figs. 13A and 13B, the shockwave interface 80 of the multimedia training system 10 of the present invention is used to display streamed video, graphics or movies associated with the class to the user. The shockwave interface 80, as illustrated in Fig. 13A includes a central display area 330, a content navigator button 161, a status button 165, a notes button 167, a chat button 169, a
15 discussion button 171, a next button 173, a previous button 175, a glossary or index button 179 and a resources button 181. The system 10 enables the user to click on these buttons to perform certain functions, as described below.

The system 10 determines 331 whether the user has disabled the explanation screen for the shockwave interface 80. If the user has disabled the
20 explanation screen for the shockwave interface, the system 10 begins the shockwave interface function, as described below. If the user has not disabled the explanation screen for the shockwave interface, the system displays 332 the explanation screen for the shockwave interface 80 on the user's display 18. The system 10 enables the user to disable 333 the explanation screen for the

shockwave interface 80. After the user indicated 334 that he or she has read the explanation screen, the system 10 begins the shockwave interface function, as described below.

The system 10 pulls or retrieves 335 the file path of the shockwave movie
5 from the class database on the storage device 12. The system 10 determines 336 if the user has disabled the auto start of movies. If the user has disabled the auto start of the movies, the system 10 lights 337 the stop command or button (not shown), and pauses 338 for user interaction. If the user hits the start command or
10 button (not shown) has not disabled the auto start of movies, the system 10 then begins 339 to play the movie and lights 340 the start button. The movie plays 341 in the display area when the movie ends 342, the system saves 343 the user data and returns 344 to the last activated user interface.

Next and Previous Function

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Referring now to Figs. 14A and 14B, the next and previous functions of the system 10 of the present invention enable the user to go to the next task or the previous task (assuming that the current task is not the first task). When the user selects the next or previous buttons, the system 10 determines 345 if the content
20 navigator is open. If the content navigator is open, the system checks 346 off the task as complete in the content navigator. Thereafter, or if the content navigator is not open, the system 10 determines 347 if the status window is open. If the status window is open, the system 10 recalculates 348 the percent complete for all status bars. Thereafter, or if the status window is not open, the system 10 determines 349

if the objectives window is open. If the objectives window is open, the system 10 determines 350 if the new task is part of a new module to perform. If it is, the system 10 displays 351 the new objectives in the objectives window. Thereafter, or if the objectives window is closed or if there is no new task which is part of the new module, the system 10 marks 352 the task as complete in the local database 16. If the next task button is hit, the system 10 obtains 353 the next uncompleted task from the local database 16. If the previous task button is hit, the system 10 obtains 354 the last completed task from the local database. The system 10 determines 355 the interface needed for the task from the class database 12. The system 10 then directs the user to the appropriate interface and specifically the website visit interface 68, quiz interface 70, process interface 72, conceptual interface 74, exercise interface 76, launch external program interface 78 and shockwave interface 80.

15 Content Navigator Function

Referring now to Fig. 15, the content navigator function of the system 10 of the present invention enables the user to see, review and select (i.e., linearly review and select) the content of the class, and in particular, the modules, activities and tasks in the class. When the user selects the content navigator button, the system 10 determines 357 if the content navigator window is open. If the content navigator window is open, the system 10 closes 358 the content navigator window and returns 359 to the last activated user interface. If the content navigator window is not open, the system 10 opens 360 the content navigator window, retrieves 361 the

class curriculum from the class database on the storage device 12, displays 362 the modules, activities and tasks in an explorer tree in the window as illustrated in Figs. 1A, 1B, 1C, 1D, 1E and 1F, reads 363 the local or user database 16 to determine the completed tasks, puts 364 the check marks next to the completed task, reads 5 366 the local database 16 to determine the task with associated notes, places 368 the notes icon next to the tasks with the associated notes and pauses 370 for user interaction. If the user clicks 372 on a task, the system 10 determines 374 if the task is a quiz question. If the task is a quiz question, the system 10 displays 376 an error message and further pauses 370 for user interaction. If the task is not a quiz 10 question, the system 10 determines 378 the appropriate interface for the selected task. The interfaces includes the website visit 68, the process interface 72, the conceptual interface 74, the exercise interface 76, the launch external program interface 78 and the shockwave interface 80. If the user exits 380 the system, the system 10 closes 382 the content navigator window and returns 359 to the last 15 activated user interface.

Objectives Function

Referring now to Fig. 16, the system 10 may include an objectives function 20 which enables the user to determine the objectives of the class, and in particular, the objectives of the particular, module, activity or task. When the user selects the objective command or button (not shown), the system 10 determines 400 if the objectives window is open. If the objects window is open, the system 10 closes 402 the object window and returns 404 to the last activated user interface. If the objects

window is not open, the system 10 opens 406 the objects window, retrieves 408 the objects for the current module from the class database on the storage device 12, displays 410 the objectives in the window, and pauses 412 for user interaction. When the user hits 414 the exit button, the system 10 closes 416 the objectives
5 window and returns 404 to the last activated user interface

Status Function

Referring now to Fig. 17, the status function of the system 10 of the present
10 invention enables the user to determine the status of his or her progress in the class, and in particular, a module or activity. When the user selects the status button 165, the system 10 determines 420 if the status window is open. If the status window is open, the system 10 closes 422 the status window and returns 424 to the last activated user interface. If the status window is not open, the system 10 opens
15 426 the status window and obtains 428 the current class percent complete, current module percent complete and current activity percent complete. The system 10 displays 430 the percentages as horizontal bar graphs and in numerical form in the status window and pauses 432 for further user interaction. When the user hits 434 the exit command (not shown) in the pull-down menu button, the system 10 closes
20 436 the status window and returns 424 to the last activated user interface.

Notes Function

Referring now to Fig. 18, the notes function of the system 10 of the present invention enables the user to create and save notes relating to the subject matter of the class, and in particular, notes relating to a particular, module, activity or task. When the user selects the notes button 167, the system 10 determines 440 if the notes window is open. If the notes open, the system 10 closes 442 the notes window and returns 444 to the last activated user interface. If the notes window is not open, the system 10 opens 446 the notes window and reads 448 the local database 16 to determine if there are notes associated to the current task. If there are notes associated with the current task, the system 10 displays 450 the notes in the box and pauses 452 for user interaction. The user can add, edit, delete or save the notes or print the notes. The user prints the notes by hitting 454 the print button. The system 10 takes the current task notes and sends 456 them to a printer queue and opens 458 the windows default print dialog box to facilitate the printing of the notes. If the user hits 480 the save button, the system 10 saves 462 the notes to the local database 16 associated with the current task. When the user hits 464 the exit command in the menu buttons, the system 10 closes 466 the notes window and returns 444 to the last activated user interface.

20

Chat Function

Referring now to Fig. 19, the chat function of the system 10 of the present invention enables the user to chat about the subject matter of the class with other

users and with teachers on a live or real-time basis. When the user selects the chat button 169, the system 10 determines 470 if the chat window is open. If the chat window is open, the system 10 closes 472 the chat window and returns 472 to the last activated user interface. If the chat window is closed, the system 10 opens 476
5 the chat window and retrieves the server name and nickname from the local database 16. The system 10 then connects 480 with the chat server. The system 10 determines 482 if the connection is successful. If the connection is not successful, the system 10 tries again to connect with the chat server. If the system 10 connects with the chat server, the system 10 displays 484 the other names or
10 nicknames of the other users in the chat room and pauses 486 for user interaction. The system 10 enables the user to chat or communicate with other users by sending 488 text from other users to the user. The system 10 displays 490 text next to the other users nickname in the chat window and pauses 486 for further user interaction. The system 10 enables the user to send 492 text to other users, by
15 sending 494 text to the chat server. The chat server sends 496 the text to the other users and pauses 486 for further interaction. When the user hits 498 the exit command (not shown) in the pull-down menu buttons, the system 10 closes 500 the chat window and returns to 414 the last activated user interface.

20

Discussion Function

Referring now to Fig. 20, the discussion function of the system 10 of the present invention enables the user to discuss the subject matter of the class with other users and with teachers. Unlike the chat function, the discussion function is

not on a live or real time basis. The user places messages in the system 10 and other users or teachers can later respond to or answer the user's message. When the user selects the discussion button 171, the system 10 retrieves or pulls 510 a discussion group URL from the class database on the storage device 12. The system 10 determines 512 the default web browser on the user processor 14. If the user processor 14 does not have 514 a default web browser, the system 10 returns 516 to the last activated user interface. If the user processor 14 has a default web browser, the system 10 sends 518 the retrieved discussion group URL to the web browser to make the connection with the discussion group on the system website 22 or elsewhere on the Internet. After the user finishes interacting with the discussion group and closes the browser, the system returns 516 to the last activated user interface. Alternatively, the user can continue to use the last activated interface or perform other tasks while the browser or discussion group remains open.

15

Glossary or Index Function

Referring now to Fig. 21, the glossary or index function of the system 10 of the present invention enables the user to obtain a definition for a term used in a class. When the user selects the glossary or index button 179, the system 10 determines 520 if the glossary window is open. If the glossary window is open, the system 10 closes 522 the glossary window and returns 524 to the last activated used interface. If the glossary window is closed, the system 10 opens 526 the glossary window, retrieves or pulls 528 terms from the class database on the

storage device 12, displays 530 the retrieved terms in the left box of the glossary window (not shown) and pauses 532 for user interaction. If the user clicks 534 on the term, the system 10 retrieves or pulls 536 a definition of the selected term, the file location of the associated sound file, and the file location of the associated task, if present, from the class database on the storage device 12, displays 538 the definition in the right box of the glossary window (not shown), plays 540 the sound file associated with the term. The system 10 then pauses 532 for further user interaction. If the user hits 542 the go to video command or button (not shown), the system 10 determines 544 if a definition is present in the right box. If a definition is not present, the system 10 pauses 532 for further user interaction. If a definition is present in the right box, the system 10 determines 546 which is the appropriate interface for the associated task. In particular, the system 10 determines if the system should use the process interface 72, conceptual interface 74, exercise interface 76 launch external program interface 78, or the shockwave interface 78 to present the task to the user. The system 10 then presents the task to the user through the appropriate interface. If the user hits 548 the exit button, the system 10 closes 550 the glossary or index and returns 524 to the last activated user interface.

Print Function

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Referring now to Fig. 22, the print function of the system 10 of the present invention enables the user to print the desired information or material from the class. The print function is preferably only accessible from the process interface 72, although it could be accessible from the other interfaces. When the user selects the

print button 183 as illustrated in Fig. 6, the system 10 determines 560 the default or predetermined print out for the current task from the class database on the storage device 12 and sends 562 the printout information to the printer queue (not shown). The system 10 opens 564 the default windows printer dialog box to facilitate printing
5 in a conventional manner. After printing, the system 10 returns 566 to the last activated user interface.

Resource Function

10 Referring now to Fig. 23, the resource function of the system 10 of the present invention enables the user to obtain further information and resources regarding the subject matter of the class, and in particular, the subject of the associated task. When the user selects the resource button 181, the system 10 determines 570 if the resource window is open. If the resource is open, the system
15 10 closes 572 the resource window and returns 574 to the last activated user interface. If the resource window is not open, the system 10 opens 576 the resource window, retrieves or pulls 578 the resource list from the class database on the storage device 12, displays 580 the retrieved resource list in the resource window and pauses 582 for further user interaction. If the user clicks 584 on any
20 listed resource, the system 10 retrieves or pulls 586 the associated file from the class database on the storage device 12, runs 588 the file as a windows command line as a separate windows command line application and then pauses 582 for further user interaction. The user may then independently interact with the resource. When the user hits 590 the exit command (not shown) in the pull-down

menu buttons, the system 10 closes 592 the resource window and returns 574 to the last activated user interface.

Referring now to Figs. 24-45, a second embodiment of the multimedia training system of the present invention, generally indicated by numeral 1010, is revealed. Like the first embodiment of the multimedia training system 10 above, the multimedia training system 1010 is adapted to train a plurality of users. Both systems 10 and 1010 include modules preferably divided into multiple activities, where the activities are preferably divided into multiple tasks. Both systems 10 and 1010 present the next task, the activity that that contains that task, and the module that contains that activity in a linear fashion to the user.

System 1010 differs from system 10 in that the multimedia training program is not stored on a CD-ROM or other storage device that is downloaded on to the user's processor. The classes, modules, activities and tasks of system 1010 are stored on a suitable system storage 1026 device operably communicating with the internet or data network. The users access the training program by electronically communicating with the system storage device 1026 through the system website 1022.

The first embodiment streams video stored on the CD-ROM or other storage device to the user using a shockwave interface as provided previously. The second embodiment (system 1010) differs from the first embodiment in that it does not stream video to the user. Rather, system 1010 provides graphic files, displayed text, animation instructions and timing synchronization data over the internet that the user interacts with as part of the multimedia training program. Further, the system 1010 does not require a separate shockwave interface. Rather, the system

1010 transmits a shockwave URL with each application or interface to the user browser 1606. The user browser 1606 downloads a shockwave file (i.e., a tutorial DCR file 1608 as shown in Fig. 25) containing the graphic files, displayed text, animation instructions and timing synchronization data as discussed in further detail
5 below.

Referring now to Fig. 24, the second embodiment of the multimedia training system 1010 is revealed. The system 1010 includes at least one system database on storage device 1026 which operably communicates with a plurality of users. In one preferred embodiment, storage device 1026 is preferably a large capacity or
10 mass storage device (i.e., Oracle® Data base) operably connected to the internet 1600 that includes at least the multimedia training system. System storage device 1026 is capable of running one or more data bases including without limitation a system database, a class database, a user database, a task component table, etc. Preferably, system storage device 1026 also includes an administrative application
15 component that administers the multimedia training program (i.e., builds a list of classes, sends a list of classes to the users, determines what task the user stopped on, etc.). The storage device 1026 provides the appropriate program and content to at least one, but preferably more, user(s) over the internet 1600 as provided previously for the first embodiment.

20 Fig. 25 illustrates a high level overview of the browser architecture of the present invention, revealing the interactions and operably communications with the internet 1600 and the storage device 1026. The user clicks on one or more of the toolbar buttons 1602, which in one preferred embodiment are simple HTML. Selecting or clicking on the one or more toolbar buttons 1602 causes system 1010

to retrieve a process from the system storage device 1026 and transmits it, with a shockwave URL, to the user browser 1606. The shockwave URL instructs the user browser 1606 to download a shockwave file containing the graphic files, displayed text, animation instructions and timing synchronization data generally necessary to display the process in an interactive multimedia presentation format. The retrieval process, preferably a javascript function, enables the user to: (i) to move to a "next" or "previous" task 1174 and 1176; (ii) open a new browser window displaying a HTML content navigator tree 1162; (iii) open a new browser window displaying an online chat application 1176 for the currently enrolled users; (iv) open a new browser window displaying an online discussion group 1172 for the currently enrolled users; (v) open a new browser window displaying graphs of the user's class completion status 1166; (vi) open a new browser window displaying related resource links 1182 to the currently enrolled users; (vii) open a new browser window displaying related resource links 1182 to the currently enrolled users; (viii) open a new browser window displaying related index terms 1180 to the currently enrolled users; or (viii) open a new browser window displaying stored student notes 1168 for the current task.

Referring to Fig. 26, the system 1010 includes user processors 1014 and associated user monitors or displays 1018 and input devices 1020 like system 10. However, as the multimedia training program is provided over the internet 1600, the user processor 1012 generally does not utilize a local database. It is only necessary that the user processor 1012 operably communicate with the internet 1600.

Turning now to Figs. 26A, 26B, 26C, 26D, 26E and 26F, an example of the linear construction of a class, modules in the class, activities in the modules, and tasks in the activities is illustrated. The class generally relates to "Computer Networks." The system guides the user through these modules, activities and task
5 in a linear fashion (except for the limited review mode) and uses checkmarks to indicate that the user has completed certain tasks all as described above for system 10.

Registration, Initiation and Logon

10

The system 1010 also includes an initialization, registration and logon process 1030 as illustrated in Figs. 27A, 27B and 27C. For purposes of this application, the system 1010 is again described in regard to a single user, although it should be appreciated that the system 1010 of the present invention is adapted for
15 multiple concurrent users as shown in Figs. 24 and 26. The user access the system website 1022 using his browser 1606 (not shown in Figs. 27A, 27B, or 27C). The system 1010 queries 1038 the user to determine if the user has run the system 1010. If the user has not previously run the system 1010, the system 1010 obtains 1040 certain information from the user. The system 1010 sends 1042 this
20 information to the system server 1024 through the Internet 1600.

The system 1010 determines 1066 which interface is appropriate for the next task from the class database on the storage device 1026. The system server 1024 sends the task information to the browser application 1606 (shown in Fig. 25) including the appropriate interface (i.e., the website interface 1068, the quiz

interface 1070, the process interface 1072, the conceptual interface 1074, or the exercise interface 1076). The student browser application 1606 receives the appropriate interface from the system server 1024 and displays the content of the appropriate interface using a shockwave URL, where the shockwave URL instructs
5 the user browser 1606 to download the shockwave file containing the graphic files, displayed text, animation instructions and timing synchronization data. The users completes the task and clicks the "next" icon. Task completion information is sent from the browser application 1606 over the internet 1600 to the system storage device 1026 for storage. The storage device 1026 determines the next task in class
10 sequence and sends that task information to the browser application 1606.

The system 1010 determines 1066 which interface is appropriate for the next task from the class database on the storage device 1026. The storage device 1026 determines the task type of the next task and retrieves all the task information, depending on the task type, from a task component table on the storage device
15 1026. For example, multiple choice questions have different task components than multimedia tutorials. If a task component does not exist for a particular task, a "0" is sent back to the browser 1606 indicating that the task component does not exist. Task type components are sent back to the browser 1606 in the following order: (I) multiple choice question text; (II) shockwave URL; (III) multiple choice answer
20 choice text; (IV) previous answer choice number; (V) a graphic files resource URL which displays some contextual image that relates to a multiple choice question. All the information is sent to the browser 1606 in ASCII text.

Website Visit Interface

Referring now to Figs. 28A and 28B, the system 1010 directs the user to visit other appropriate websites, where the user may view time sensitive or rapidly
5 changing data or information (including updates), or other websites relevant to the class, similar to system 10. The system 1010 differs from system 10 in that it enables the user to visit such other websites over the internet 1600 while maintaining the user's internet connection to the system website 1022. Specifically, the system 1010 displays the website visited in a separate browser window (not
10 shown) while maintaining the website interface 1068 on the user's screen. This enables the user to access the system functions which are illustrated in Fig. 28A.

The system 1010 opens 1094 the default web browser, retrieves or pulls 1096 the website URL for the current task from the system database 1026 and sends 1098 the URL to the web browser with a shockwave URL which connects the
15 user processor 1014 to the website. The shockwave URL instructs the user browser 1606 to download a shockwave file containing the graphic files, displayed text, animation instructions and timing synchronization data generally necessary to display the process in an interactive multimedia presentation format. The system 1010 pauses or allows 1100 the user to interact with the website. After the user
20 finishes the website visits, the system 1010 closes 1102 the web browser and the system 1010 returns or leaves the user at the website interface 1068 illustrated in Fig. 28A.

Quiz Interface

The quiz interface 1070 of the multimedia training system 1010 of the present invention is again preferably used to test the user's knowledge similar to the
5 quiz interface 70 of the first embodiment. The system 1010 presents the quiz interface 1070, using a shockwave URL, as illustrated in Fig. 29, to the user. The quiz interface 1070 includes a top left box or display area 1103 for displaying still images or photographs to the user, a top right box or display area 1104 for displaying the text of the questions to the user and a bottom horizontally extending
10 lower box or display area 1106 for displaying the list of possible answers to the question to the user.

Process Interface

15 The process interface 1072, as revealed in FIG. 31, of the multimedia training system 1010 of the second embodiment of the present invention is again preferably used to teach step-by-step instructions of a process to the user like the process 72 of system 10. Referring now to Figs. 32A and 32B, the system 1010 pulls or retrieves 1210 the timing and file locations for still photographs, and the
20 timing and text for the textual bullets from the class database on the storage device 1026 and transmits the information to the browser application 1606 along with a shockwave URL so that the user views the information on display 1018 as provided below.

Conceptual Interface

The conceptual interface 1074, as illustrated in Fig. 33, of the multimedia training system 1010 of the present invention is used to teach concepts and theories to the user like the conceptual interface 74. Referring now to Fig. 34, the system 1010 pulls or retrieves 1261 the timing for and text of the definitions from the class database on the storage device 1026. The system 1010 determines 1260 if the user has disabled the auto start of movies. If the user has not disabled the auto start of movies, the system 1010 then transmits a shockwave URL to the user's browser application 1606 as provided below and begins 1266 to play the graphic files, displayed text, etc. in the display box 1246 and lights 1268 the start button 1251.

Exercise Interface

15

The exercise interface 1076 revealed in Fig. 35 of the multimedia system 1010 of the present invention enables the user to perform certain exercises associated with the classes, and in particular certain modules or activities as described for the exercise interface 76 above. Referring now to Fig. 36, the system 1010 pulls or retrieves 1310 the locations of the interactive content for the exercise from the class database on storage device 1026 and transmits this information with a shockwave URL over the internet 1600 to the user browser 1606 as provided below .

Shockwave Graphic Display

The first embodiment of the multimedia training system 10 uses a separate shockwave interface to display streamed video, graphics or movies associated with the class. However, the second embodiment does not stream the video to the user like the first embodiment. Rather, system 1010 provides graphic files, displayed text, animation instructions and timing synchronization data over the internet 1600 that the user interacts with as part of the multimedia training program. System 1010 transmits a shockwave URL with each application or interface to the user browser 1606. The shockwave URL is a set of instructions or address that instructs the user browser 1606 where to go on the system database 1026 (or a website on the internet 1600 if applicable) to download a shockwave file. The shockwave file (i.e., a tutorial DCR file 1608 as shown in Fig. 25) contains the graphic files, displayed text, animation instructions and timing synchronization data generally necessary to display an interactive multimedia presentation. The interactive multimedia presentation is displayed on the user browser 1606 and associated display 1018.

Next and Previous Function

Referring now to Figs. 37A and 37B, the next and previous functions of the system 1010 of the present invention enable the user to go to the next task or the previous task (assuming that the current task is not the first task) similar to the next and previous functions of the system 10. However, system 1010 differs from system 10 in that it determines if the content navigator 1345, the status window

1347, and the objective windows 1349 are open by checking the system storage device 1026 using the internet 1600. The system transmits a shockwave URL to the browser application 1606 (not shown in Figs. 37A and 37B) and displays the content of those windows on the display 1018. If the content navigator is open, the system checks 1346 if the task is complete in the content navigator. If the status window is open, the system 1010 recalculates 1348 the percent complete for all status bars. Thereafter, or if the status window is not open, the system 1010 determines 1349 if the objectives window is open. If the objectives window is open, the system 1010 determines 1350 if the new task is part of a new module to perform. If it is, the system 1010 displays 1351 the new objectives in the objectives window. Thereafter, or if the objectives window is closed or if there is no new task which is part of the new module, the system 1010 marks 1352 the task as complete in the database on storage device 1026. If the next task button is hit, the system 1010 obtains 1353 the next uncompleted task from the database on storage device 1026. If the previous task button is hit, the system 1010 obtains 1354 the last completed task from the local database.

Content Navigator Function

20 Referring now to Fig. 38, the content navigator function of the system 1010 of the present invention enables the user to see, review and select the content of the class, and in particular, the modules, activities and tasks in the class like the content navigator of system 10. However, system 1010 differs from system 10 in that it determines if the content navigator is open by checking the system storage device

1026 using the internet 1600. The system transmits a shockwave URL to the user browser 1606 (not shown in Fig. 38) and displays or opens this window on the display 1018. When the user selects the content navigator button, the system 1010 determines 1357 if the content navigator window is open. If the content navigator window is open, the system 1010 closes 1358 the content navigator window and returns 1359 to the last activated user interface. If the content navigator window is not open, the system 1010 opens 1360 the content navigator window, retrieves 1361 the class curriculum from the class database on the storage device 1026, displays 1362 the modules, activities and tasks in an explorer tree in the window, using a shockwave URL as discussed above, as illustrated in Figs. 26A, 26B, 26C, 26D, 26E and 26F.

Objectives Function

15 Referring now to Fig. 39, the system 1010 may include an objectives function which enables the user to determine the objectives of the class, and in particular, the objectives of the particular, module, activity or tasks described previously for the first embodiment as described for system 10. When the user selects the objective command or button (not shown), the system 1010 determines 1400 if the objectives window is open by checking the system storage device 1026 using the internet 1600. If the objects window is open, the system 1010 closes 1402 the object window and returns 1404 to the last activated user interface. If the objects window is not open, the system 1010 opens 1406 the objects window, retrieves 1408 the objects for the current module from the class database on the storage device 1026,

displays 1410 the objectives in the window using a shockwave URL as provided previously, and pauses 1412 for user interaction.

Status Function

5

Referring now to Fig. 40, the status function of the system 1010 of the present invention enables the user to determine the status of his or her progress in the class, and in particular, a module or activity as described above for system 10. When the user selects the status button 1165, the system 1010 determines 1420 if the status window is open by checking the system storage device 1026 using the internet 1600. If the status window is open, the system 1010 closes 1422 the status window and returns 1424 to the last activated user interface. If the status window is not open, the system 1010 opens 1426 the status window and calculates 1428 the current class percent complete, calculates the module percent complete and calculates the activity percent complete. The system 1010 displays 1430 the percentages as horizontal bar graphs and in numerical form in the status window using a shockwave URL as provided above and pauses 1432 for further user interaction.

20

Notes Function

Referring now to Fig. 41, the notes function of the system 1010 of the present invention enables the user to create and save notes relating to the subject matter of the class, and in particular, notes relating to a particular, module, activity

or task as described previously for the system 10. When the user selects the notes button 1167, the system 1010 determines 1440 if the notes window is open by checking the system storage device 1026 using the internet 1600. If the notes window is open, the system 1010 closes 1442 the notes window and returns 1444
5 to the last activated user interface. If the notes window is not open, the system 1010 opens 1446 the notes window and reads 1448 the database on the storage device 1026 to determine if there are notes associated to the current task. If there are notes associated with the current task, the system 1010 displays 1450 the notes in the box using a shockwave URL as discussed above and pauses 1452 for user
10 interaction.

Chat Function

Referring now to Fig. 42, the chat function of the system 1010 of the present
15 invention enables the user to chat about the subject matter of the class with other users and with teachers on a live or real-time basis over the internet 1600. When the user selects the chat button 1169, the system 1010 determines 1470 if the chat window is open by checking the system storage device 1026 using the internet 1600. If the chat window is open, the system 1010 closes 1472 the chat window
20 and returns 1472 to the last activated user interface. If the chat window is closed, the system 1010 opens 1476 the chat window and retrieves the server name and nickname from the database 1026. The system 1010 then connects 1480 with the chat server over the internet 1600. The system 1010 determines 1482 if the connection is successful. If the connection is not successful, the system 1010 tries

again to connect with the chat server. If the system 1010 connects with the chat server, the system 1010 displays 1484 the other names or nicknames of the other users, using a shockwave URL as provided previously, in the chat room and pauses 1486 for user interaction. In one embodiment, it is contemplated that the system 5 1010 does not determine if the connection is successful, rather system 1010 simply connects with the chat server. The system 1010 enables the user to chat or communicate with other users by sending 1488 text from other users to the user.

Discussion Function

10

Referring now to Fig. 43, the discussion function of the system 1010 of the present invention enables the user to discuss the subject matter of the class with other users and with teachers over the internet 1600 like the first embodiment. Unlike the chat function, the discussion function is not on a live or real time basis. 15 The user places messages in the system 1010 and other users or teachers can later respond to or answer the user's message. When the user selects the discussion button 1171, the system 1010 retrieves or pulls 1510 a discussion group URL from the class database on the storage device 1026. In the first embodiment, the system 10 first determines the default web browser. However, system 1010 20 does not check for the default web browser, it simply sends 1518 the retrieved discussion group URL to the web browser to make the connection with the discussion group on the system website 1022 or elsewhere on the Internet.

Glossary or Index Function

Referring now to Fig. 44, the glossary or index function of the system 1010 of the present invention enables the user to obtain a definition for a term used in a class as described previously for the system 10. When the user selects the glossary or index button 1179, the system 1010 determines 1520 if the glossary window is open by checking the system storage device 1026 using the internet 1600. If the glossary window is open, the system 1010 closes 1522 the glossary window and returns 1524 to the last activated used interface. If the glossary window is closed, the system 1010 opens 1526 the glossary window, retrieves or pulls 1528 terms from the class database on the storage device 1026, displays 1530 the retrieved terms in the left box of the glossary window (not shown) using a shockwave URL as discussed above and pauses 1532 for user interaction. If the user clicks 1534 on the term, the system 1010 retrieves or pulls 1536 a definition of the selected term, the file location of the associated sound file, and the file location of the associated task, if present, from the class database on the storage device 1026, displays 1538 the definition in the right box of the glossary window (not shown), plays 1540 the sound file associated with the term. The system 1010 then pauses 1532 for further user interaction.

20

Resource Function

Referring now to Fig. 45, the resource function of the system 1010 of the present invention enables the user to obtain further information and resources

regarding the subject matter of the class, and in particular, the subject of the associated task as described for system 10 above. When the user selects the resource button 1181, the system 1010 determines 1570 if the resource window is open by checking the system storage device 1026 using the internet 1600. If the resource is open, the system 1010 closes 1572 the resource window and returns 5 1574 to the last activated user interface. If the resource window is not open, the system 1010 opens 1576 the resource window, retrieves or pulls 1578 the resource list from the class database on the storage device 1026, displays 1580 the retrieved resource list using a shockwave URL as discussed previously in the resource 10 window and pauses 1582 for further user interaction.

While the present invention is described in connection with what is presently considered to be the most practical and preferred embodiments of the present invention, the invention is not limited to the disclosed embodiments. Modifications and variations in the present invention may be made without departing from the 15 novel aspects of this invention as defined in the claims, and this application is only limited by the scope of the claims.

CLAIMS

The invention is hereby claimed as follows:

5 1. A computerized training system for individually training a user by enabling said user to access training material in a linear format and enabling said user to learn said training material at said user's own pace, the computerized training system comprising:

 a storage device including at least one class database containing said
10 training material;

 a user processor adapted to interact with the storage device to access said training material and further adapted to enable said user to linearly use said training material;

 a user database associated with the user processor and adapted to store
15 information regarding said user's progress in learning said training material;

 an user input device associated with the user processor;

 a system server communicating with the user processor and adapted to provide information regarding said user's progress in learning said training material;

 a system database associated with the system server and adapted to store
20 information regarding said user's progress in learning said training material; and

 a monitor processor communicating with the system server and adapted to enable a monitor to obtain feedback regarding and determine said user's progress in learning said training material.

2. The computerized training system of Claim 1, wherein the user processor includes a content navigator adapted to enable said user to linearly review and select content in said training material.

5 3. The computerized training system of Claim 2, wherein the user processor includes a conceptual interface adapted to enable said user to learn concepts associated with said training material.

10 4. The computerized training system of Claim 2, wherein the user processor includes a process interface adapted to enable said user to learn a process associated with said training material.

15 5. The computerized training system of Claim 2, wherein the user processor includes an exercise interface adapted to enable said user to perform exercises associated with said training material.

6. The computerized training system of Claim 2, wherein the user processor includes a quiz interface adapted to enable said system to determine said user's knowledge regarding said training material.

20

7. The computerized training system of Claim 6, wherein the user processor is adapted to enable said system to provide feedback regarding said user's understanding of said training material.

8. The computerized training system of Claim 2, wherein the user processor includes a website interface adapted to enable said user to view updates related to said training material.

5 9. The computerized training system of Claim 2, wherein the user processor includes a launch external program interface adapted to enable said user to run an external program.

10 10. The computerized training system of Claim 2, wherein the user processor includes a shockwave interface adapted to enable said user to view streamed video, graphics or movies associated with said training material.

15 11. The computerized training system of Claim 2, wherein the user processor includes a notes function adapted to enable said user to create and save notes relating to said training material.

20 12. The computerized training system of Claim 11, wherein the user processor includes an index function adapted to enable said user to obtain a definition for a term used in said training material.

13. The computerized training system of Claim 12, wherein the user processor includes next and previous functions adapted to enable said user to linearly access a next or previous task of said training material.

14. The computerized training system of Claim 12, wherein the user processor includes an objectives function adapted to enable said user to determine objectives of said training material.

5 15. The computerized training system of Claim 14, wherein the user processor includes a status function adapted to enable said user to determine said user's progress in learning said training material.

10 16. The computerized training system of Claim 15, wherein the user processor includes a chat function adapted to enable said user to chat about said learning material with at least one other user or monitor on a real time basis.

15 17. The computerized training system of Claim 16, wherein the user processor further includes a discussion function adapted to enable said user to discuss said learning material with at least one other user or monitor.

18. The computerized training system of Claim 17, wherein the user processor includes a resource function adapted to enable said user to obtain other information associated with said training material.

20

19. The computerized training system of Claim 2, wherein said linear format includes modules, activities and tasks.

20. The computerized training system of Claim 1, wherein the system server communicates with the user processor through a data network.

21. The computerized training system of Claim 1, further including a multimedia computerized training system program stored on the storage device and downloaded to the user processor.

22. The computerized training system of Claim 21, wherein the storage device is a CD-ROM.

10

23. The computerized training system of Claim 1, further including a plurality of user processors communicating with the system server with at least one user database associated with each user processor.

15

24. A computerized training system for individually training a user by enabling said user to access training material in a linear format through a data network and enabling said user to learn said training material at said user's own pace, the computerized training system comprising;

a system server adapted to provide said training material and information regarding said user's progress in learning said training material through said data network;

a system database associated with the system server adapted to at least store said training material and information regarding said user's progress;

a user processor adapted to interact with the system server enabling said user to linearly access said training material through said data network;

an user input device associated with the user processor; and

a monitor processor communicating with the system server and adapted to
5 enable a monitor to determine said user's progress in learning said training material,

whereby said computerized training system enables said user to learn at said user's own pace and provide feedback to the monitor regarding said user's understanding of said training material through said data network.

10 25. The computerized training system of Claim 24, wherein the system server includes a content navigator adapted to enable said user to linearly see, review and select content of said training material.

15 26. The computerized training system of Claim 25, wherein the system server includes a conceptual interface adapted to enable said user to learn concepts associated with said training material.

27. The computerized training system of Claim 25, wherein the system server includes an exercise interface adapted to enable said user to perform exercises associated with said training material.

20

28. The computerized training system of Claim 25, wherein the user processor includes a process interface adapted to enable said user to learn a process using step-by-step instructions associated with said training material and provided by said system.

29. The computerized training system of Claim 25, wherein the system server includes a quiz interface adapted to enable said system to determine said user's knowledge regarding said training material.

5

30. The computerized training system of Claim 25, wherein the system server includes a website interface adapted to enable said user to view updates related to said training material.

10

31. The computerized training system of Claim 25, wherein the system processor includes a notes function adapted to enable said user to create and save notes relating to said training material.

15

32. The computerized training system of Claim 31, wherein the system server includes an index function adapted to enable said user to obtain a definition for a term used in said training material.

20

33. The computerized training system of Claim 32, wherein the system server is adapted to enable said system to provide feedback regarding said user's understanding of said training material.

34. The computerized training system of Claim 32, wherein the system server includes next and previous functions adapted to enable said user to linearly access a next or previous task of said training material.

35. The computerized training system of Claim 34, wherein the system server includes an objectives function adapted to enable said user to determine objectives of said training material.

5

36. The computerized training system of Claim 35, wherein the system server includes a status function adapted to enable said user to determine said user's progress in learning said training material.

10

37. The computerized training system of Claim 36, wherein the system server includes a chat function adapted to enable said user to chat about said learning material with at least one other user or monitor on a real time basis.

15

38. The computerized training system of Claim 37, wherein the system server further includes a discussion function adapted to enable said user to discuss said learning material with at least one other user or monitor.

20

39. The computerized training system of Claim 38, wherein the system server includes a resource function adapted to enable said user to obtain other information associated with said training material.

40. The computerized training system of Claim 25, wherein said user accesses streamed video, graphics, text, animation instructions and timing synchronization data provided by the system server through the data network.

41. The computerized training system of Claim 40, wherein the user processor includes a user browser adapted for downloading a shockwave file containing the streamed video, graphics, text, animation instructions and timing
5 synchronization data through the data network.

42. The computerized training system of Claim 41, wherein the system server transmits a shockwave URL to the user browser enabling the user browser to downloading the shockwave file.
10

43. The computerized training system of Claim 24, wherein said linear format includes modules, activities and tasks.

44. The computerized training system of Claim 29 wherein the quiz
15 interface includes a first area adapted for displaying still images, a second area adapted for displaying text including questions related to the training material and a third area adapted for displaying answers to the questions.

45. The computerized training system of Claim 29, wherein the process
20 interface includes a first area adapted for displaying video images, a second area adapted for displaying still images and a third area adapted for displaying text related to the training material.

46. The computerized training system of Claim 26, wherein the conceptual interface includes a first area adapted for displaying movies, video or graphic animation and a second area adapted for displaying text related to the training material.

5

47. The computerized training system of Claim 24, further including a plurality of user processors communicating with the system server.

48. A computerized training system for individually training a user by
10 enabling said user to access training material in a linear format and enabling said user to learn said training material at said user's own pace, the computerized training system comprising:

means for enabling said user to linearly access said training material and learn said training material at said user's own pace;

15 means for storing at least said training material and information regarding said user's progress in learning said training material; and

means for monitoring said user's progress in learning said training material.

49. The computerized training system of Claim 48, wherein the linear
20 access means includes means for linearly reviewing and selecting a content of said training material.

50. The computerized training system of Claim 48, wherein the linear access means includes means for enabling said user to learn concepts associated with said training material.

5 51. The computerized training system of Claim 48, wherein the linear access means includes means for determining said user's knowledge regarding said training material.

10 52. The computerized training system of Claim 48, wherein the linear access means includes means for enabling said user to learn a process using step-by-step instructions associated with said training material.

15 53. The computerized training system of Claim 48, wherein the linear access means includes means for enabling said user to create and save notes relating to said training material.

20 54. The computerized training system of Claim 48, wherein the linear access means includes means for accessing streamed video, graphics, text, animation instructions and timing synchronization data.

55. A computerized training system for individually training a user by enabling said user to access training material in a linear format and enabling said

user to learn said training material at said user's own pace, the computerized training system comprising:

means providing at least said training material to said user in a linear format;

means for providing an interface used with said training material; and

5 means for enabling said user to review and select content of said training materials.

56. The computerized training system of Claim 55, which further includes means for determining said user's knowledge of said training material and providing
10 said training material based on said user's knowledge.

57. The computerized training system of Claim 55, wherein the interface providing mean includes enabling said user to access a content navigator interface adopted to enable said user to review and select said training material.
15

58. The computerized training system of Claim 55, wherein the interface providing means includes enabling said user to access at least a conceptual interface, a process interface, an exercise interface, a website interface and a launch external program interface.
20

59. The computerized training system of Claim 55, wherein the interface providing means includes enabling said user to access functions provided by said system including at least a notes function, a chat function, a discussion function, an

index function, next and previous functions, an objective function, a status function, a chat function, a discussion function and a resource function.

60. The computerized training system of Claim 55, wherein the training
5 material providing means provides said training material in a linear format including modules, multiple activities and multiple tasks.

61. A training method for individually training a user by enabling said user
to access training material and enabling said user to learn said training material at
10 said user's own pace, the training method comprising:

determining said users' pre-class knowledge;

providing said training material to the user; and

enabling said users to use a content navigator to review and select said
training material in a linear format.

15

62. The training method of Claim 61, further including enabling said user
to learn concept associated with said training material.

63. The training method of Claim 62, further including enabling said user
20 to perform exercises associated with said training material.

64. A computerized training method for individually training a user by
enabling said user to access training material in a linear format and enabling said

user to learn said training material at said user's own pace, the computerized training method comprising:

enabling said user to access a training website;

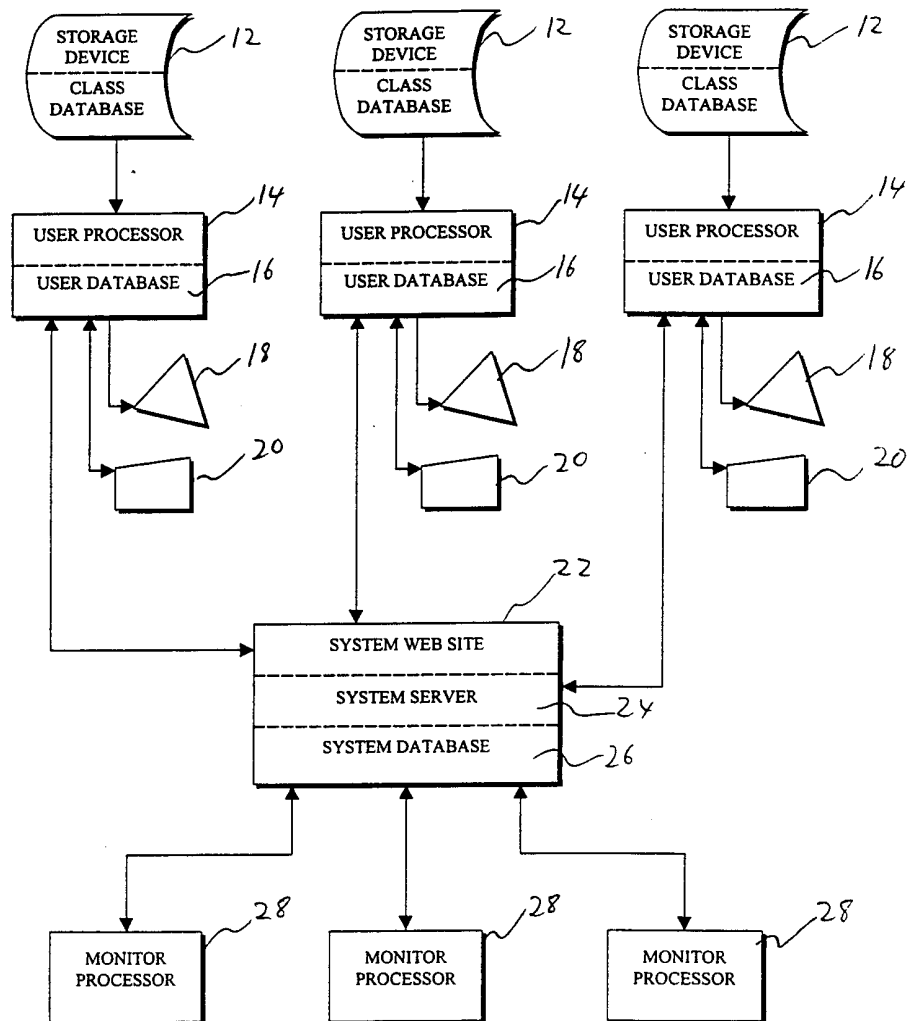
determining which interface is appropriate for a training class; and

5 enabling said user to review and select said training material.

65. The training method of Claim 64, further including enabling said user to learn a process using step-by-step instructions associated said training material.

10 66. The training method of Claim 65, further including enabling said user to view changing data relevant to said training material.

FIG. 1



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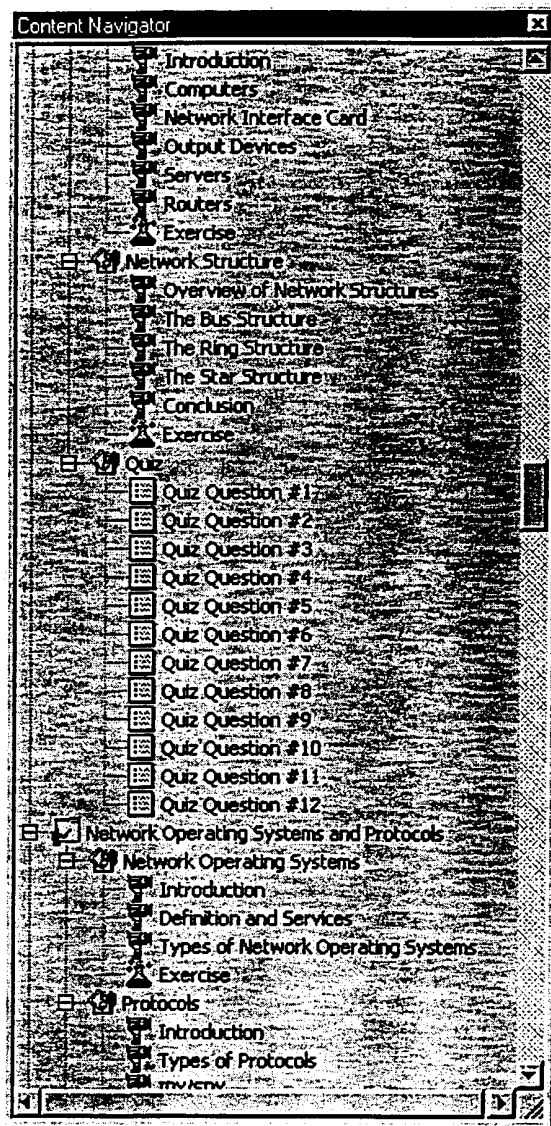


FIG. 1A

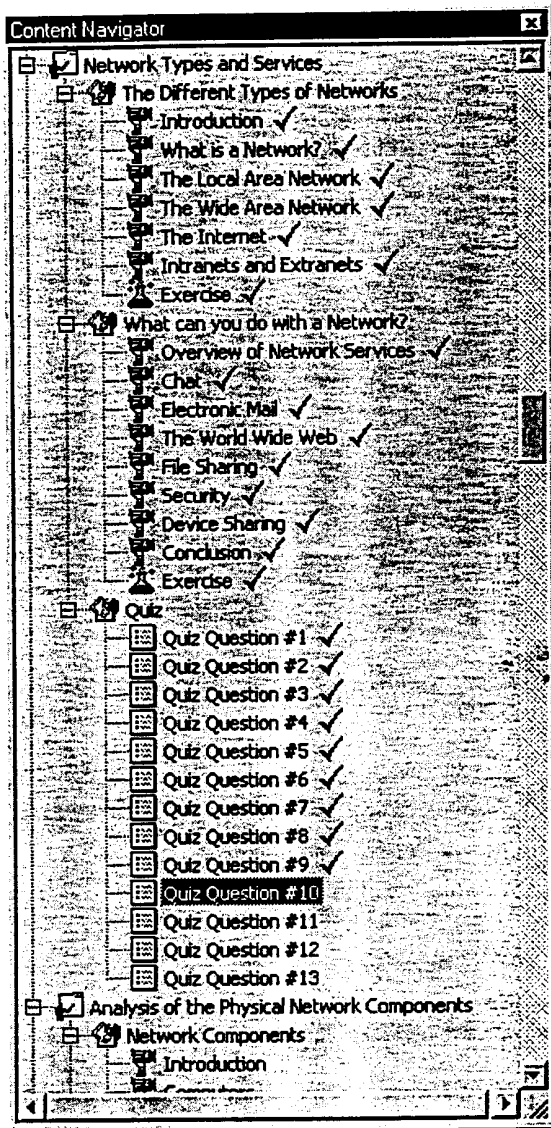


FIG 1B

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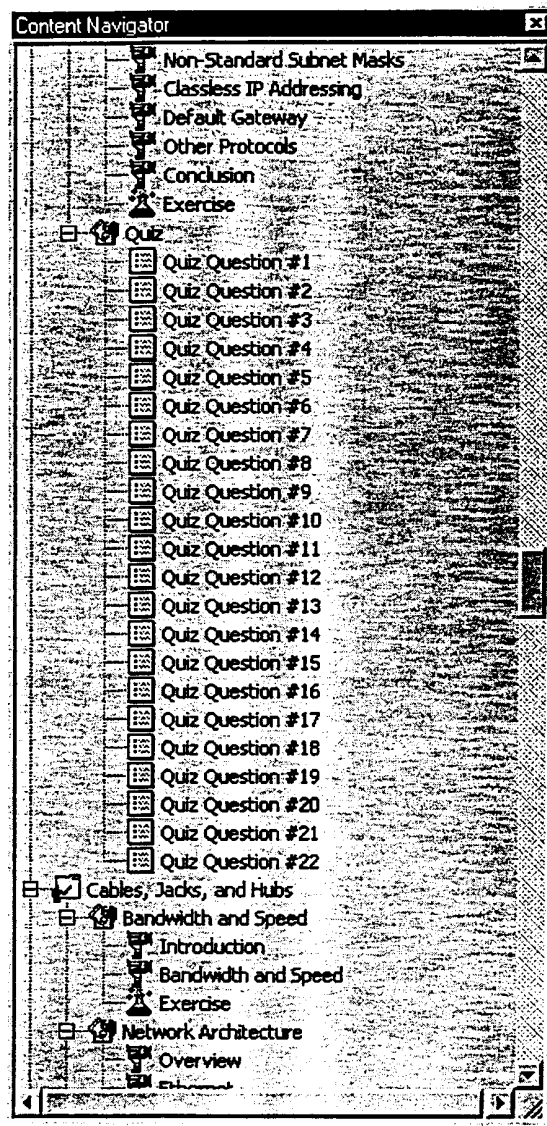


FIG. 1C

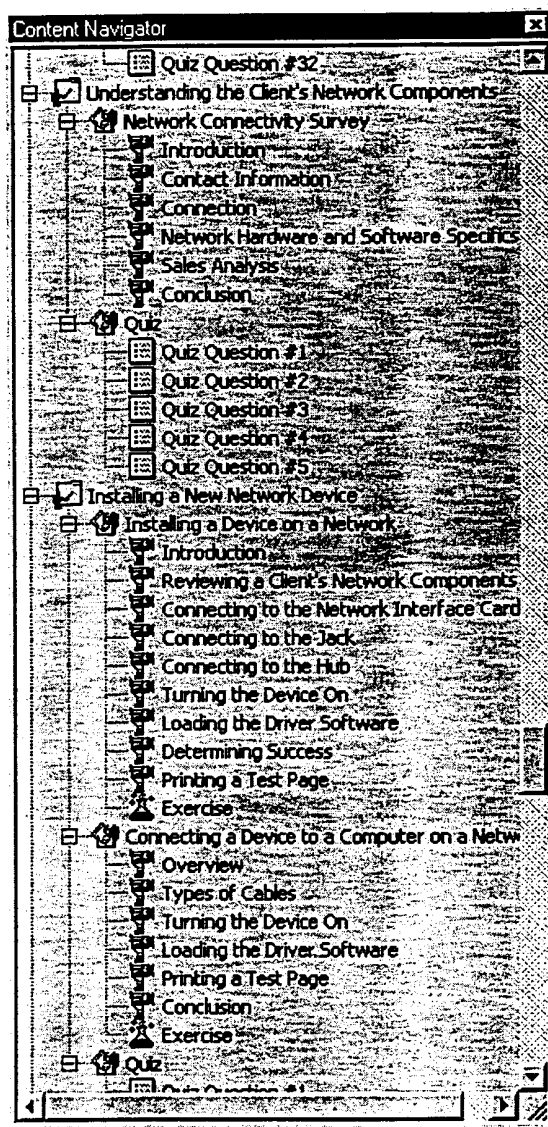


FIG 10

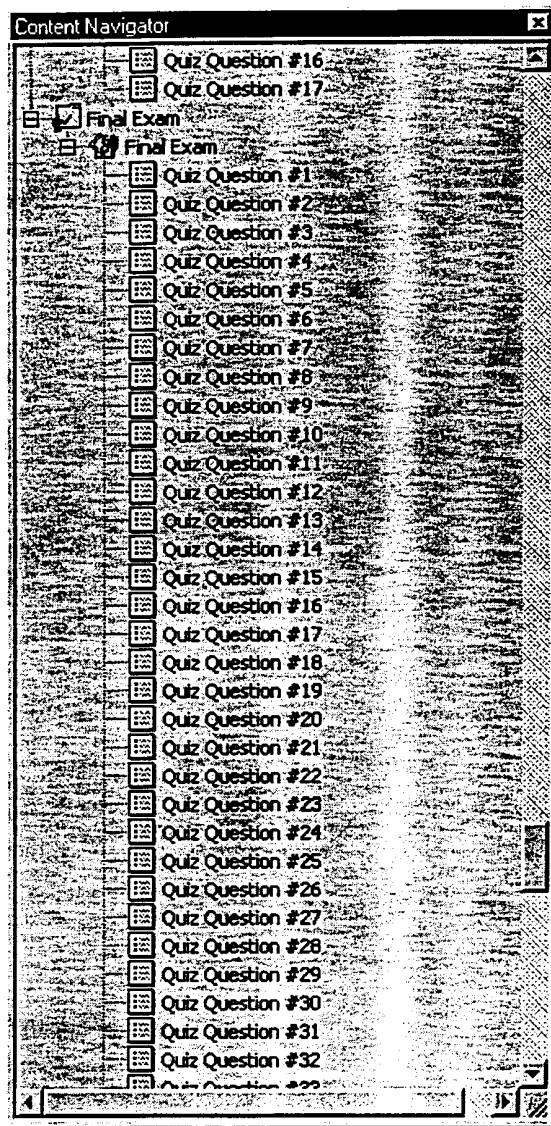


FIG. 1E

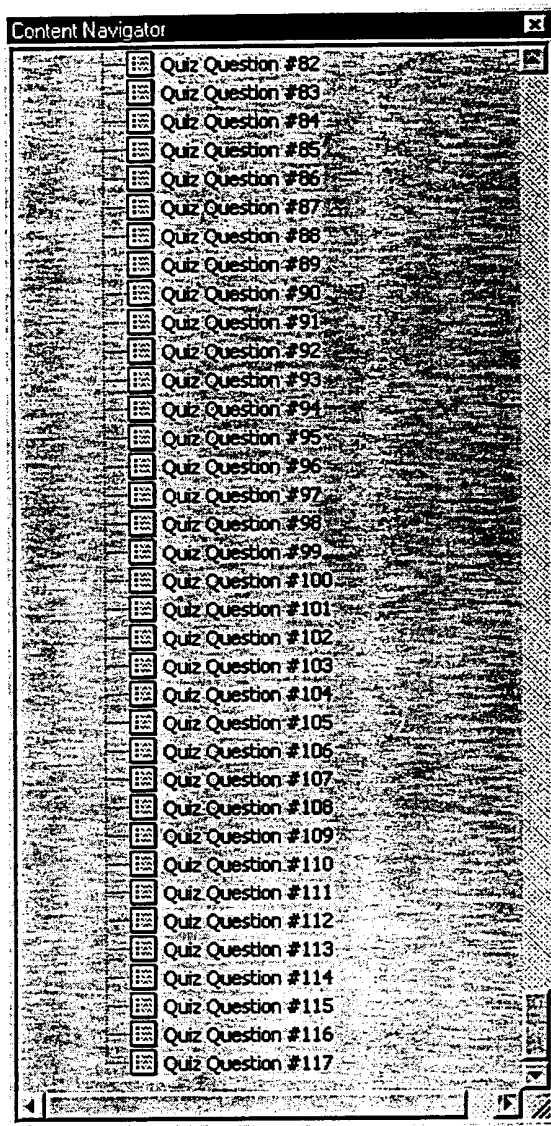
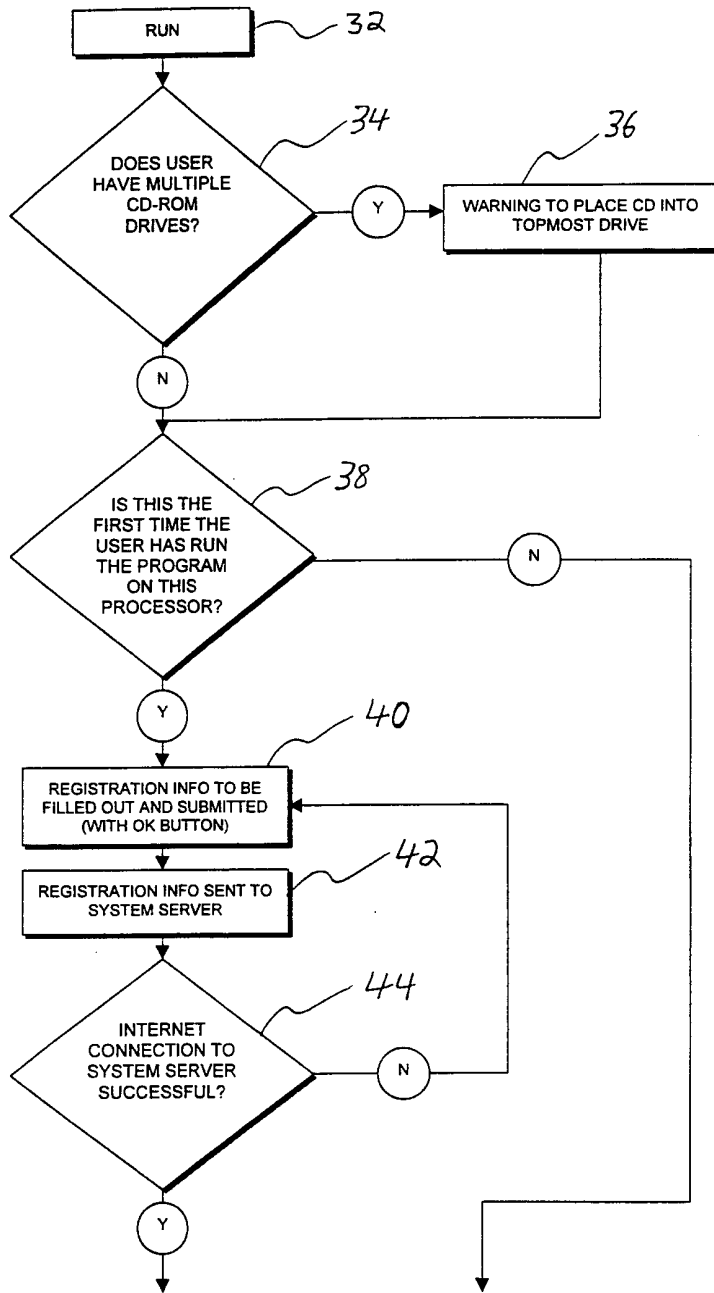


FIG 1F

FIG. 2A

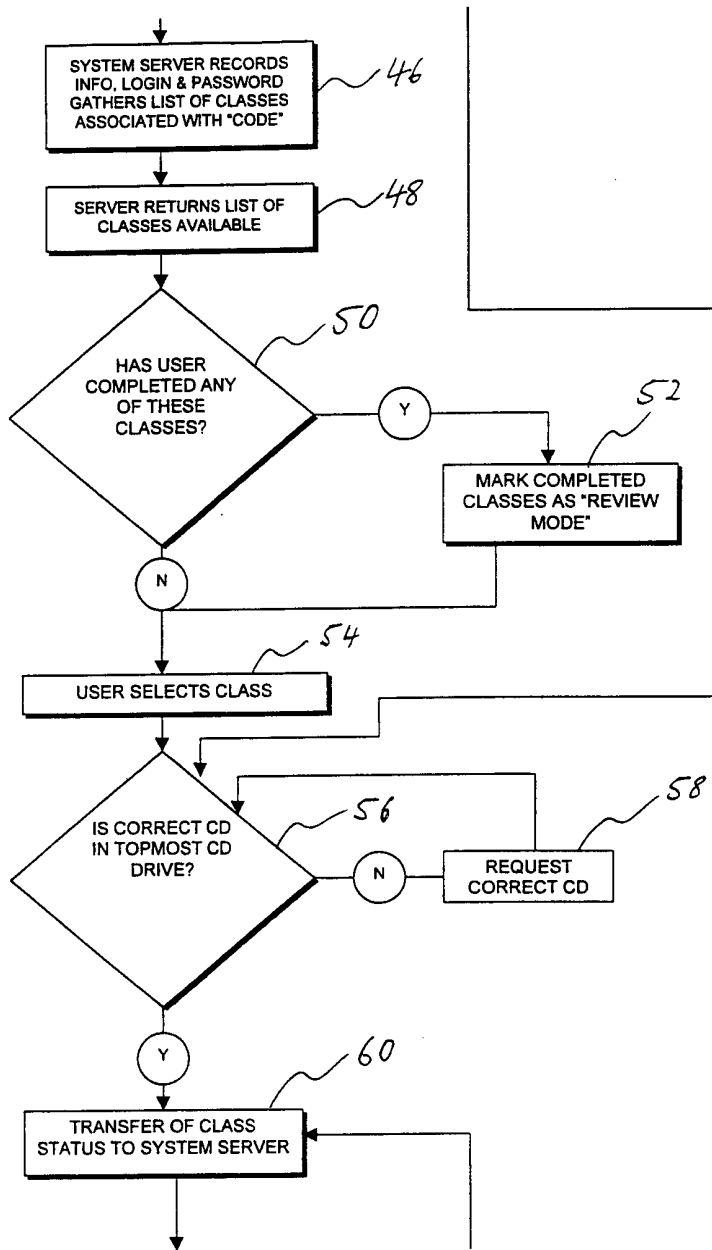
30 ↘



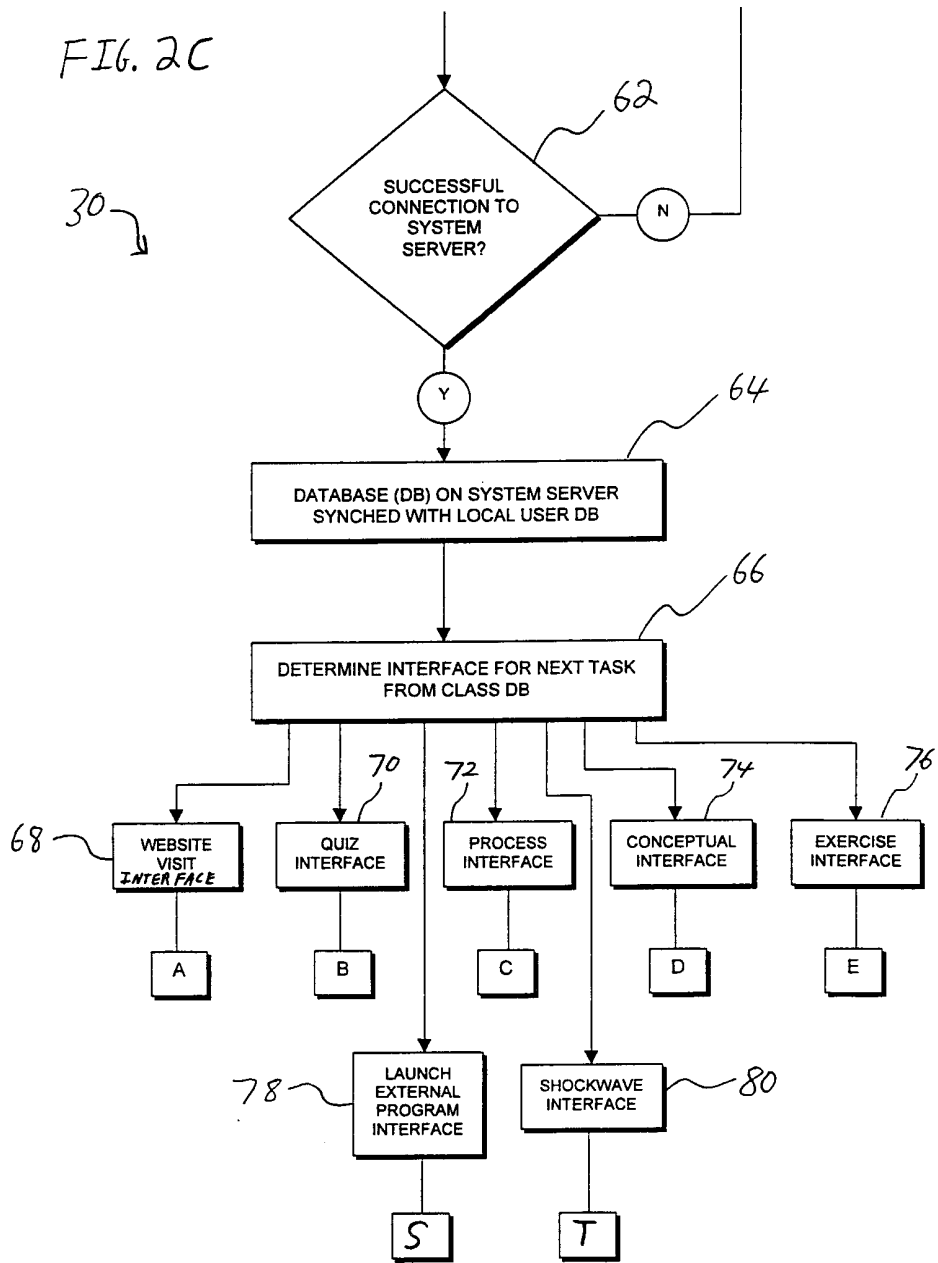
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FIG. 2B

30 →



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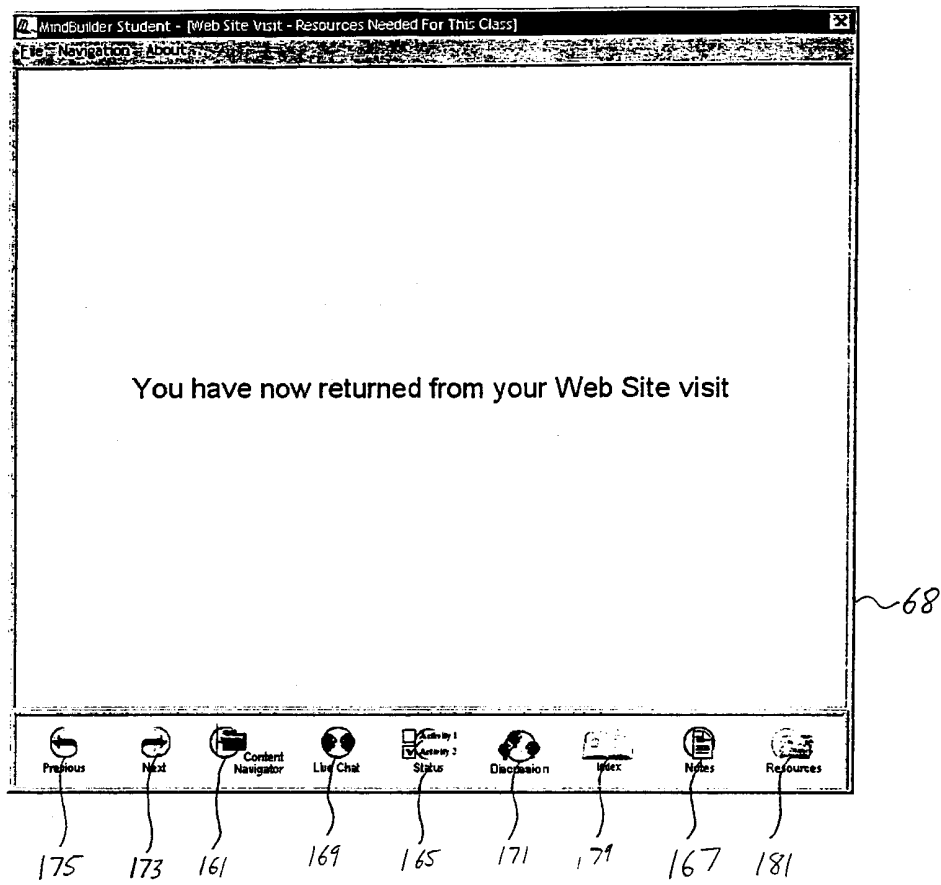
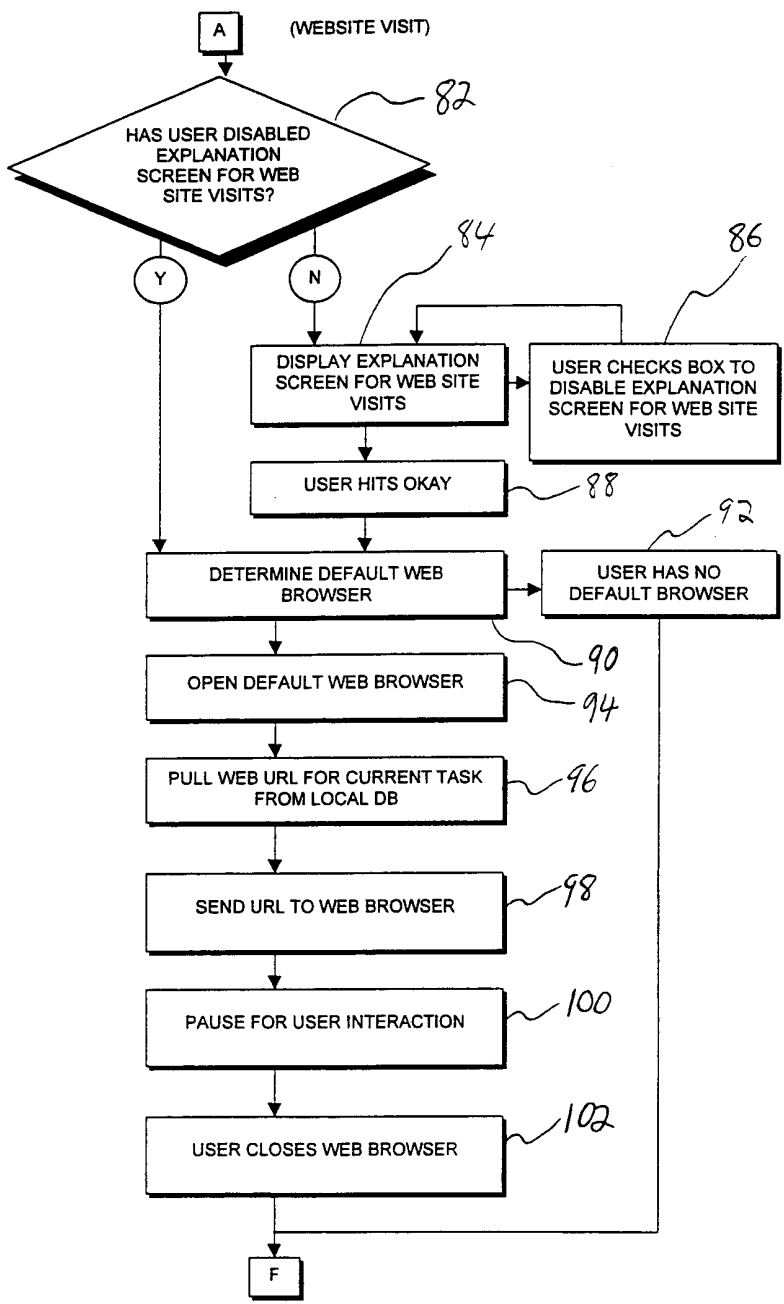


FIG. 3A

FIG. 3B



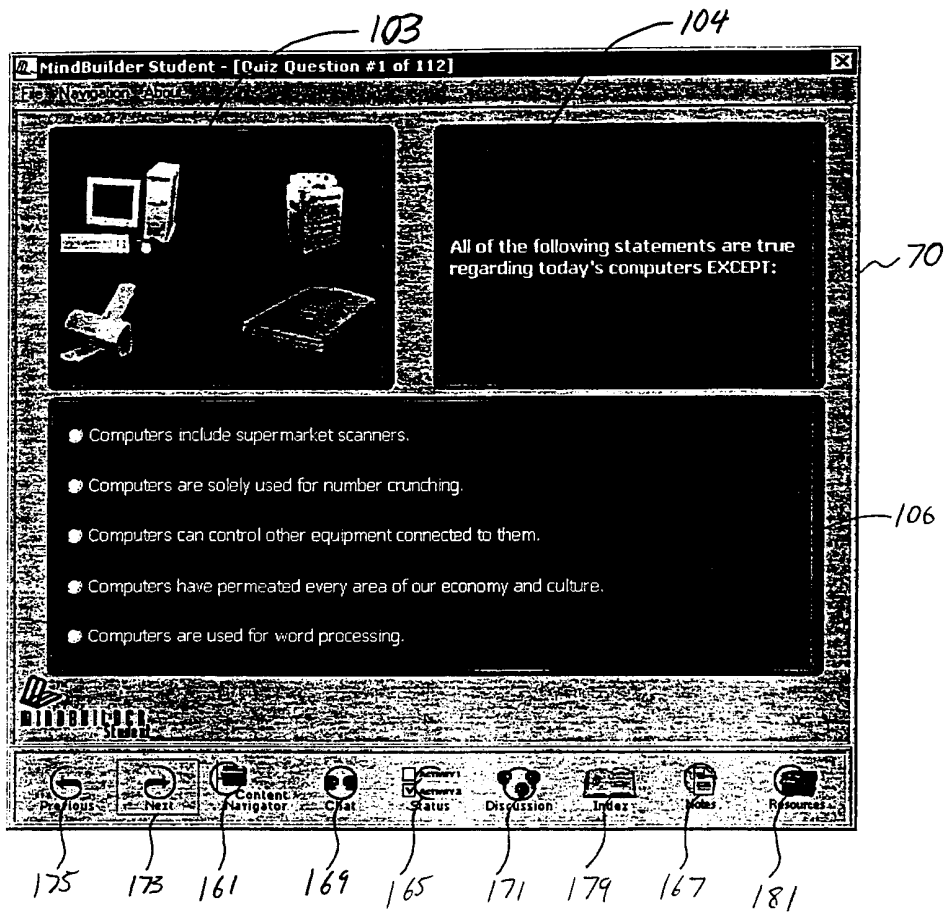
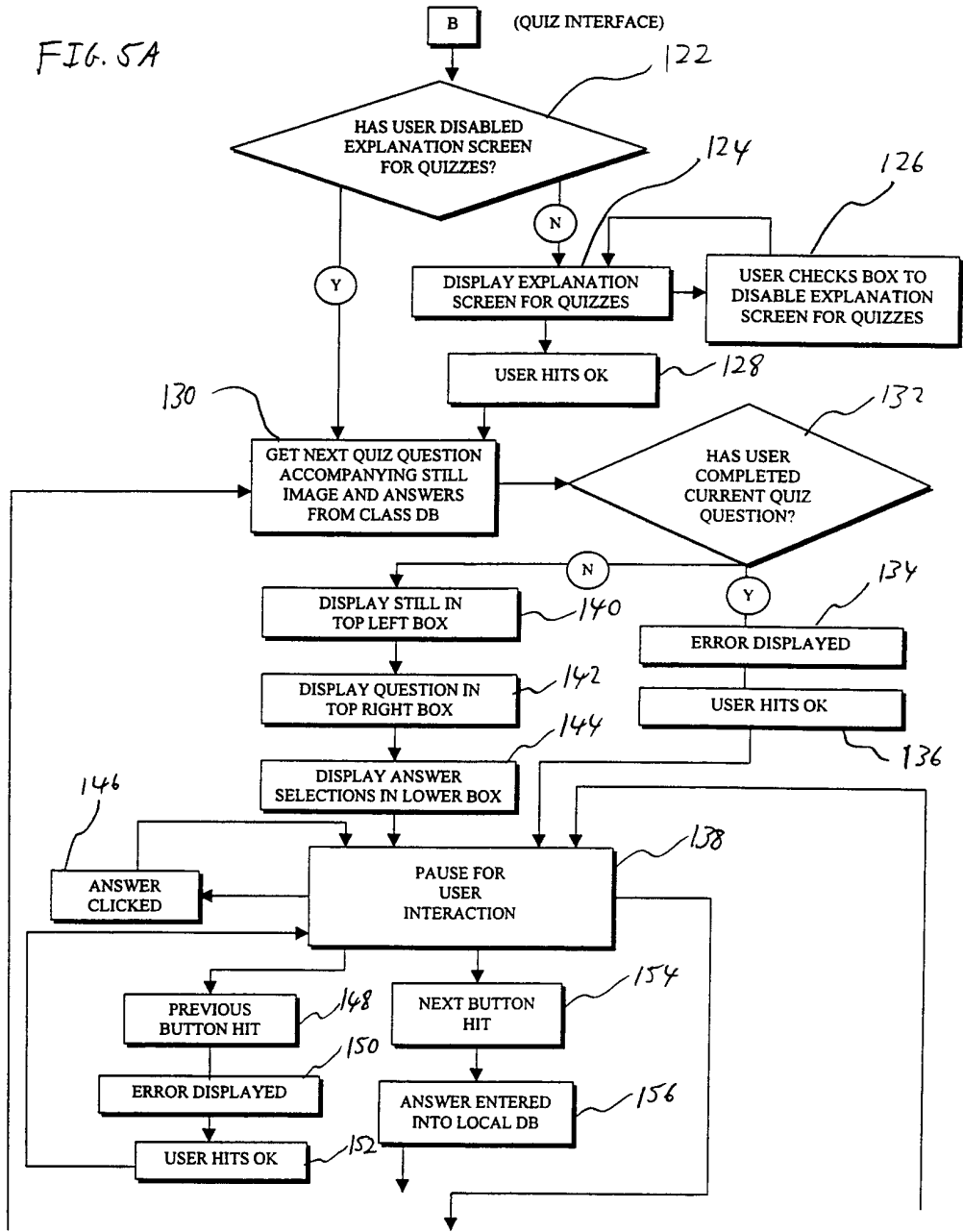
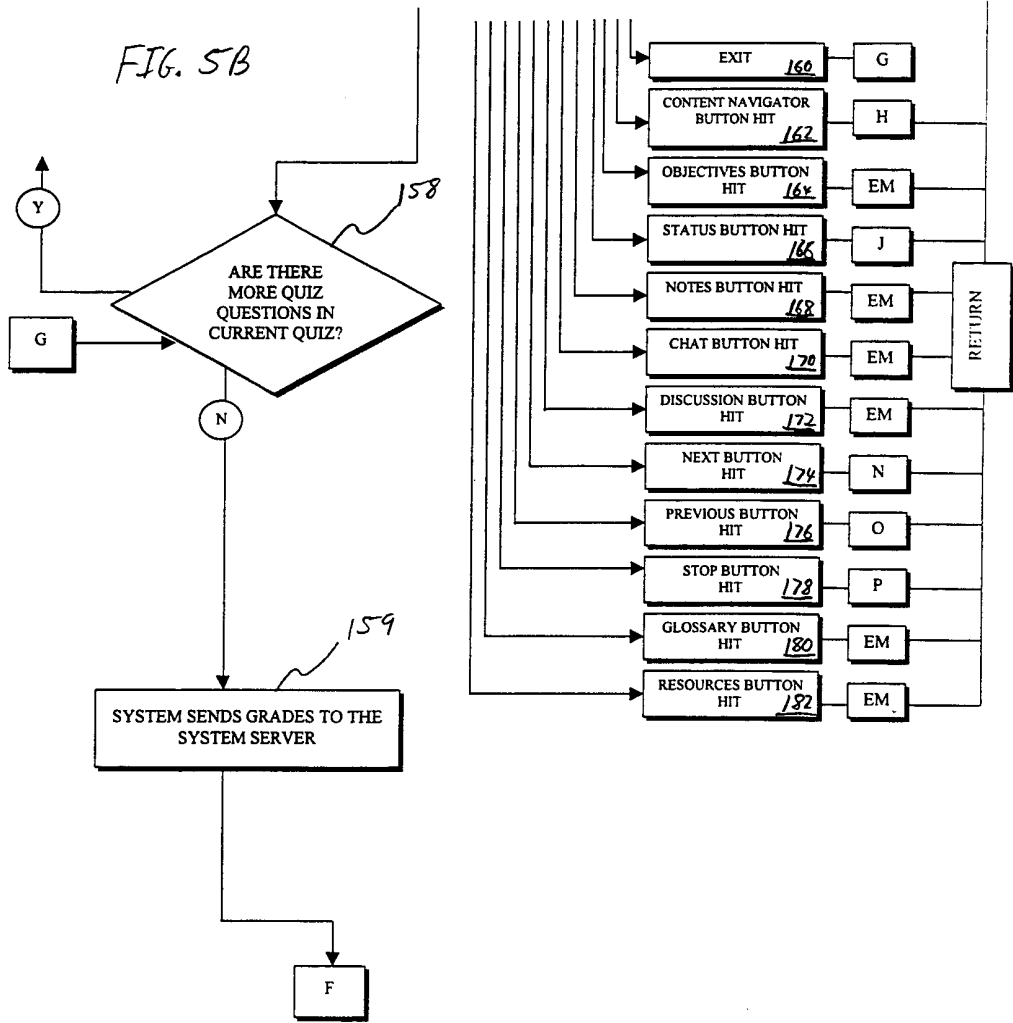


FIG. 4

FIG. 5A





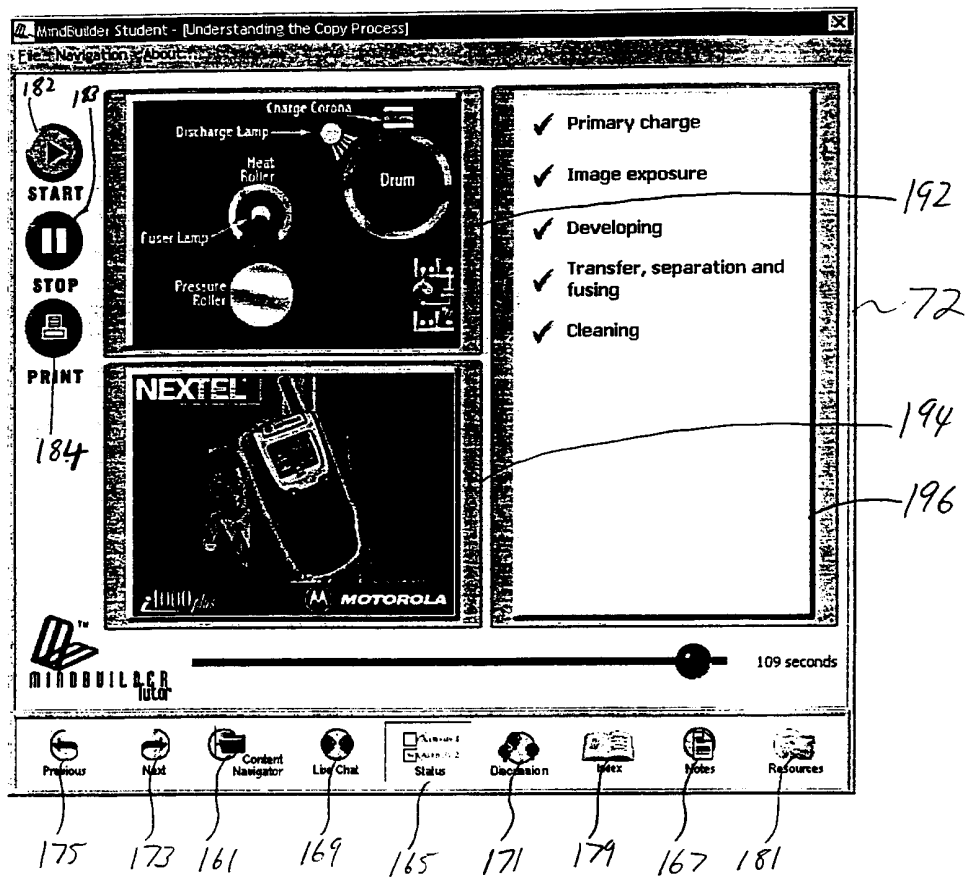
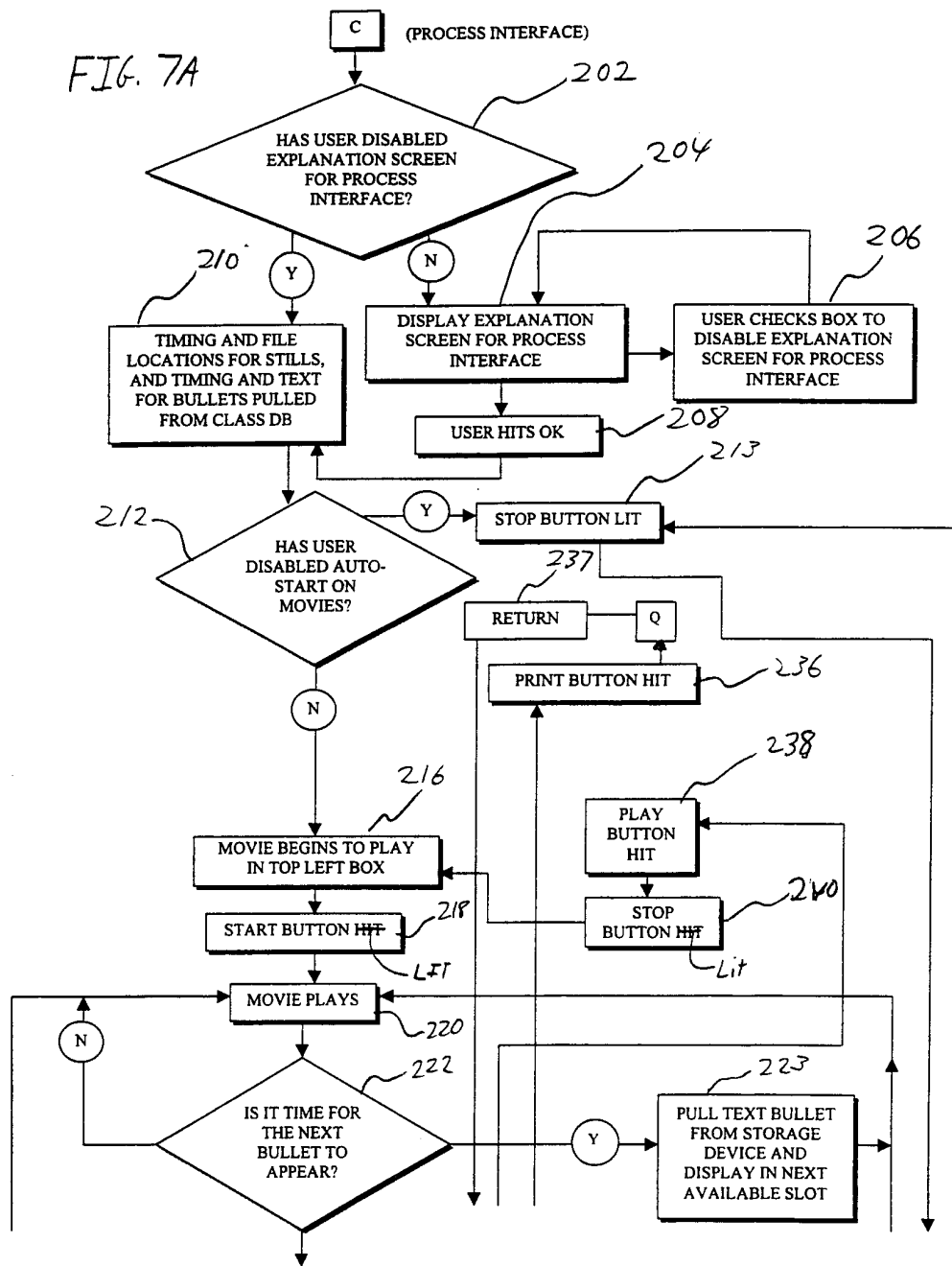


FIG. 6

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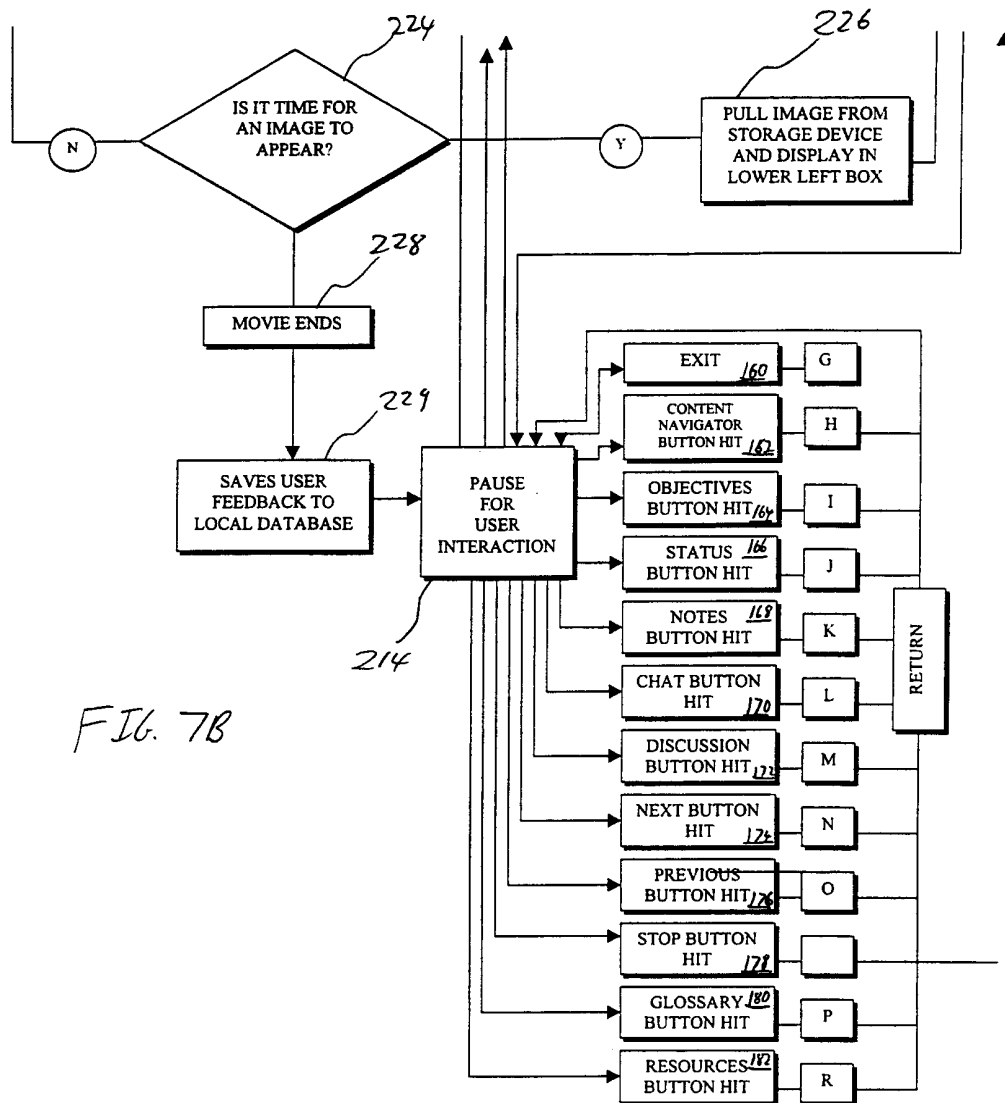


FIG. 7B

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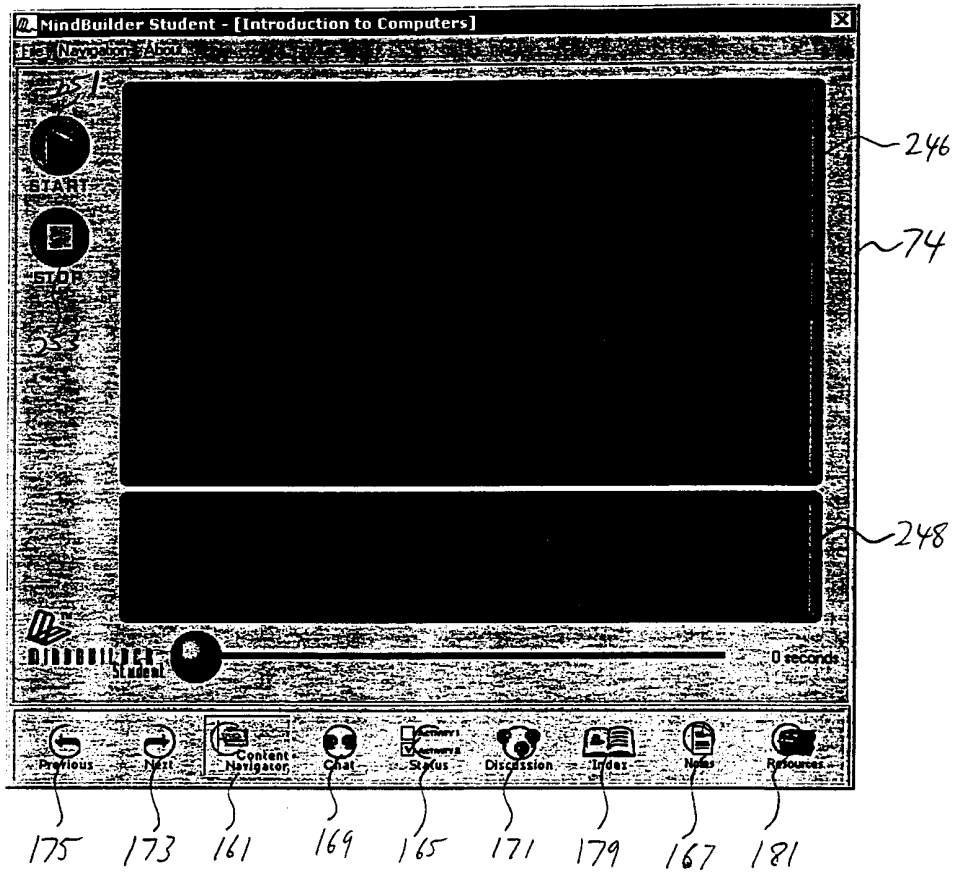


FIG. 8

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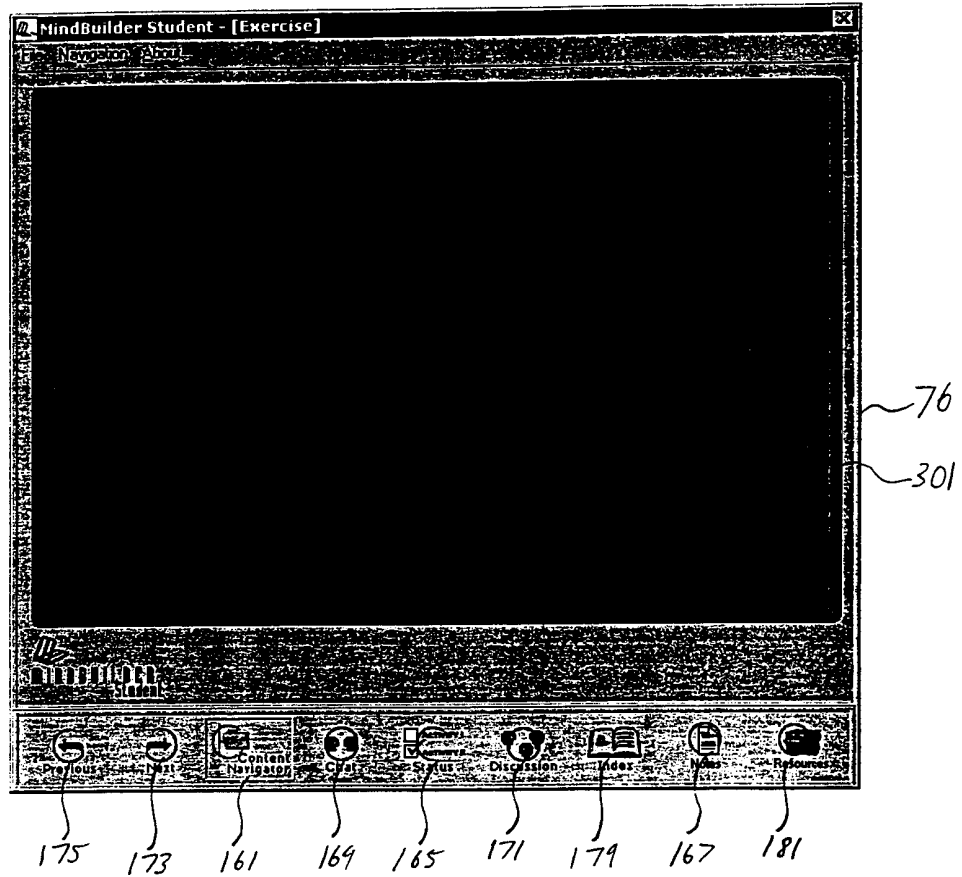
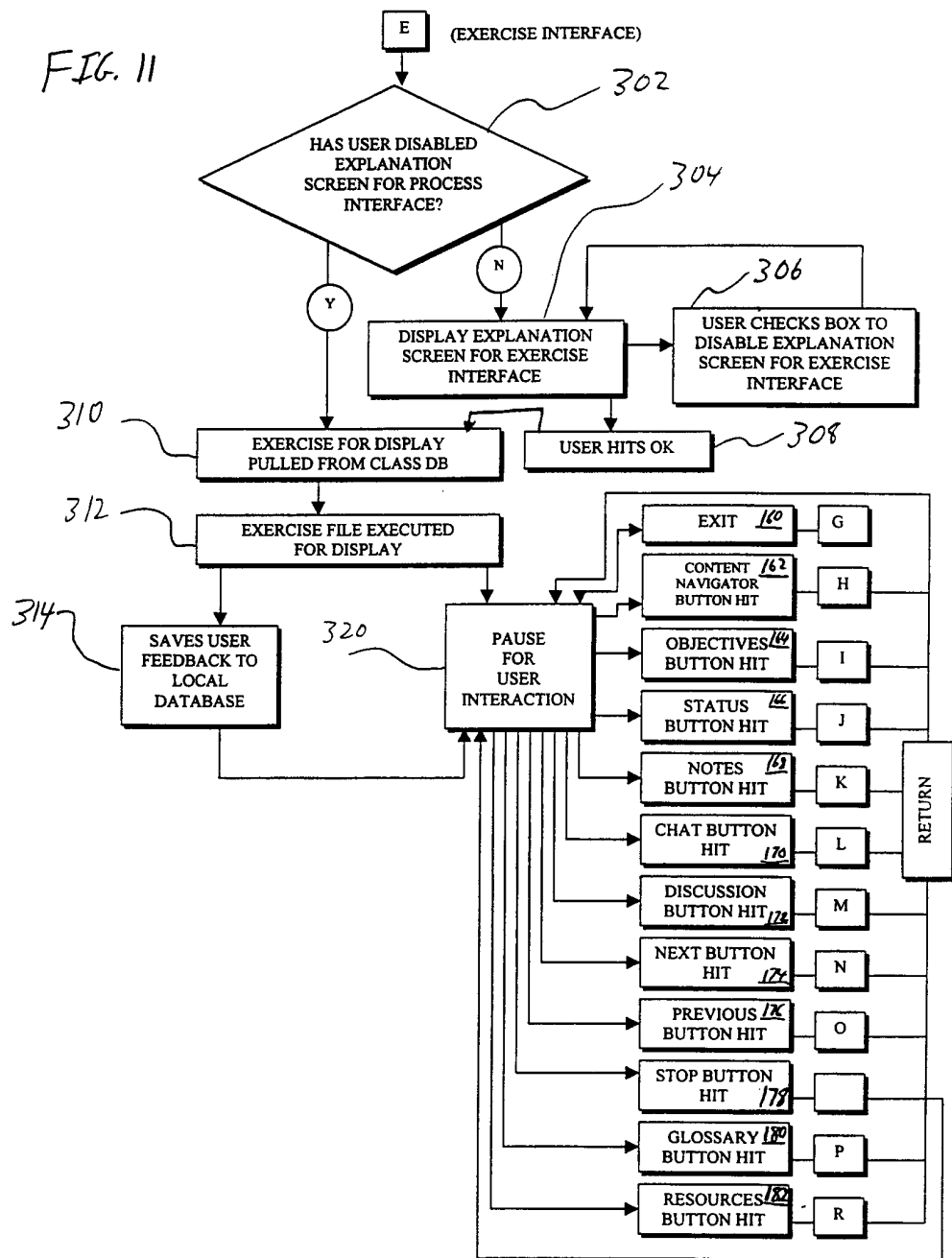


FIG. 10



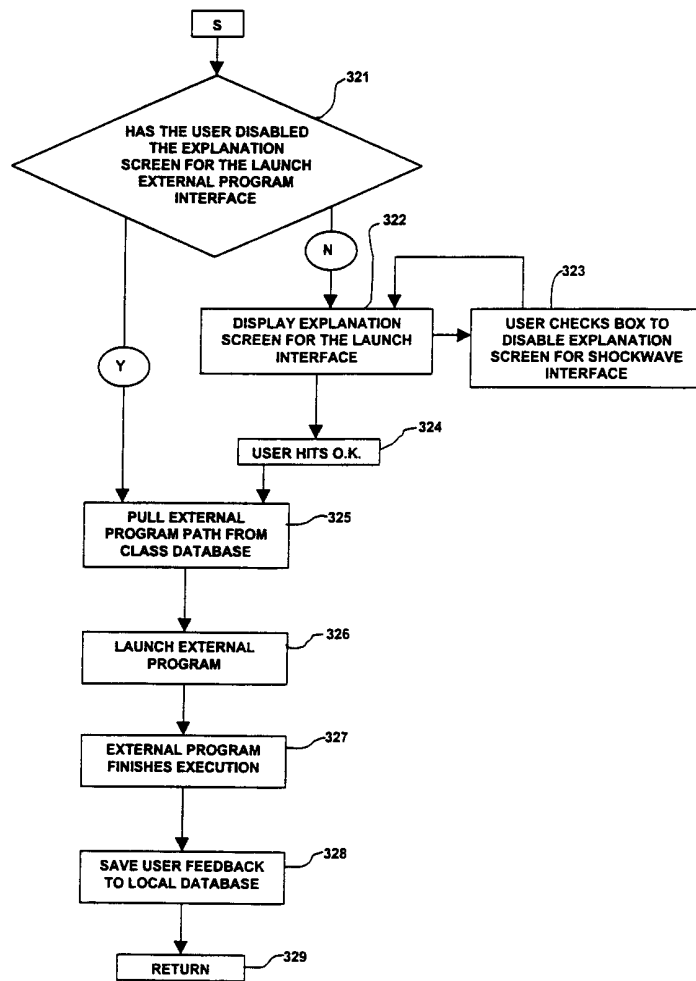


FIG. 12

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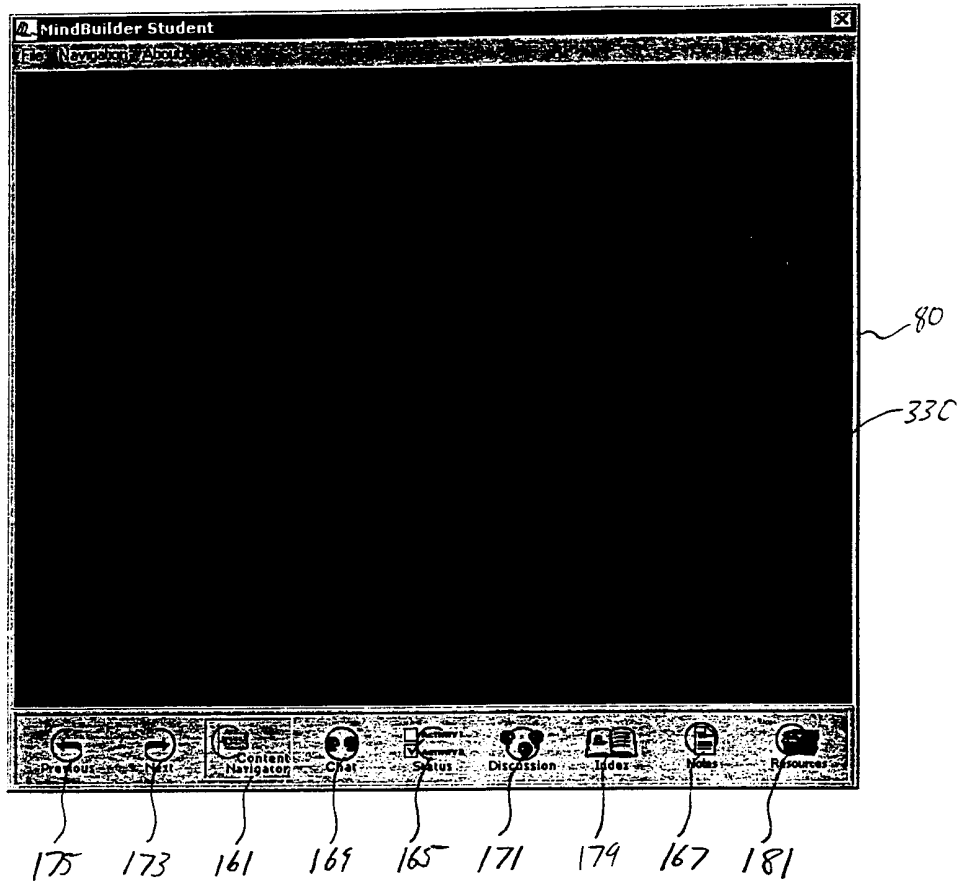


FIG. 13A

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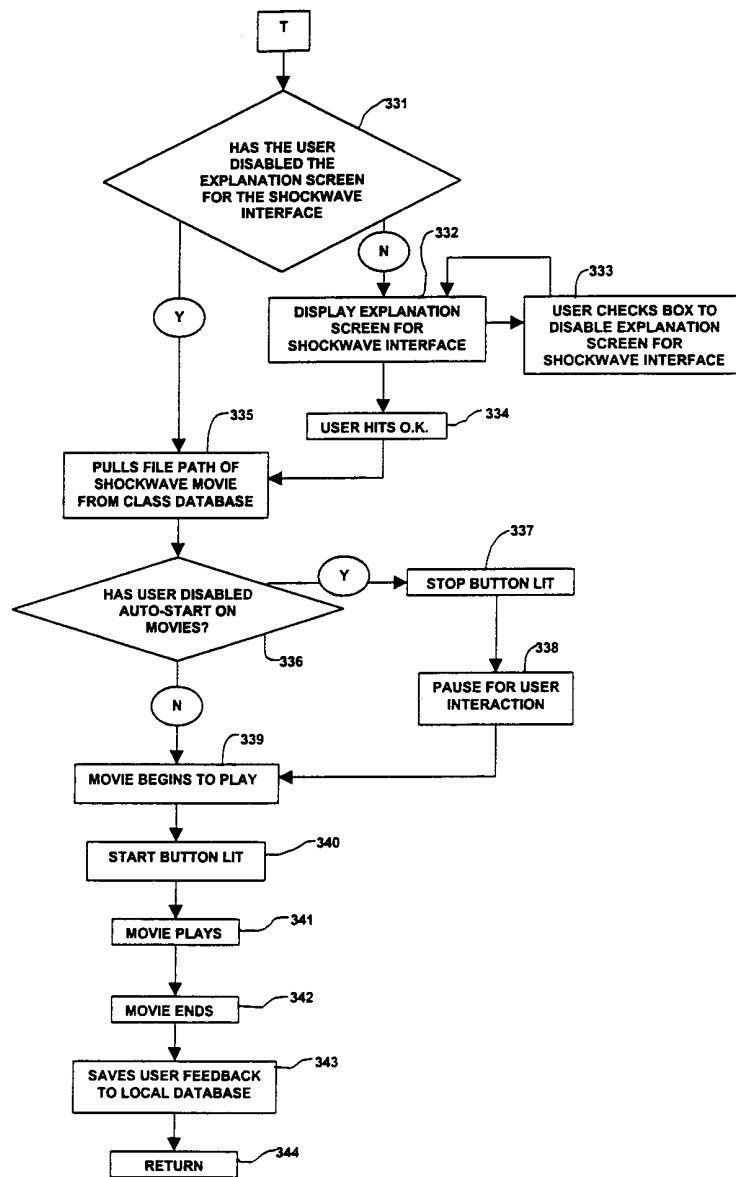
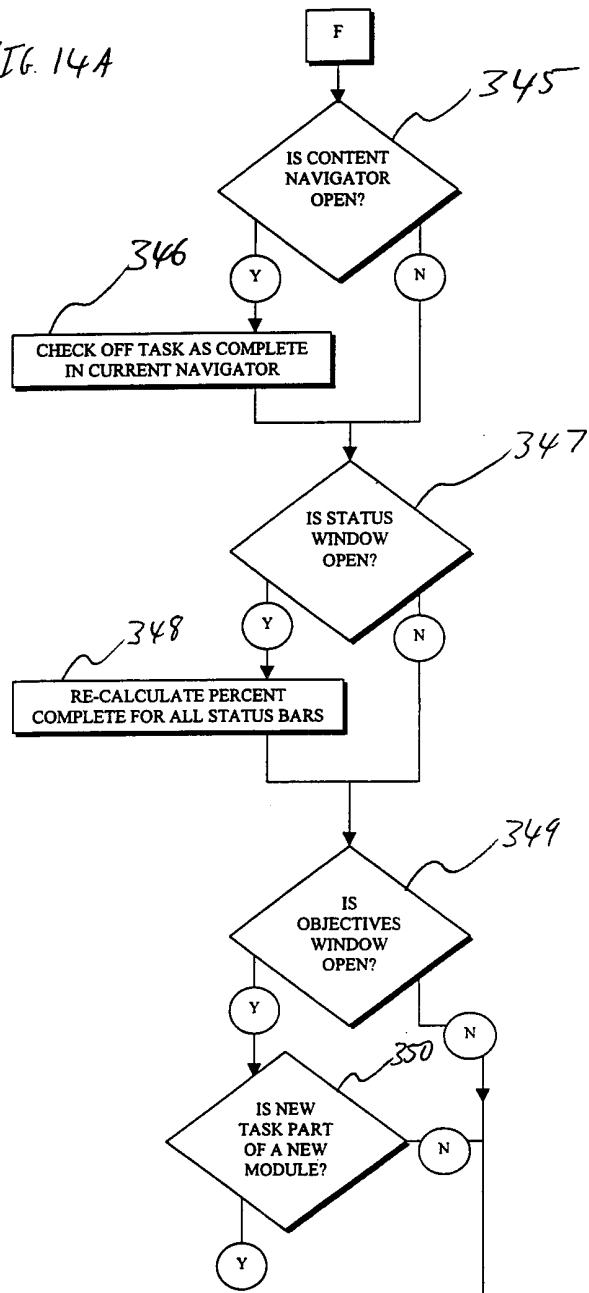


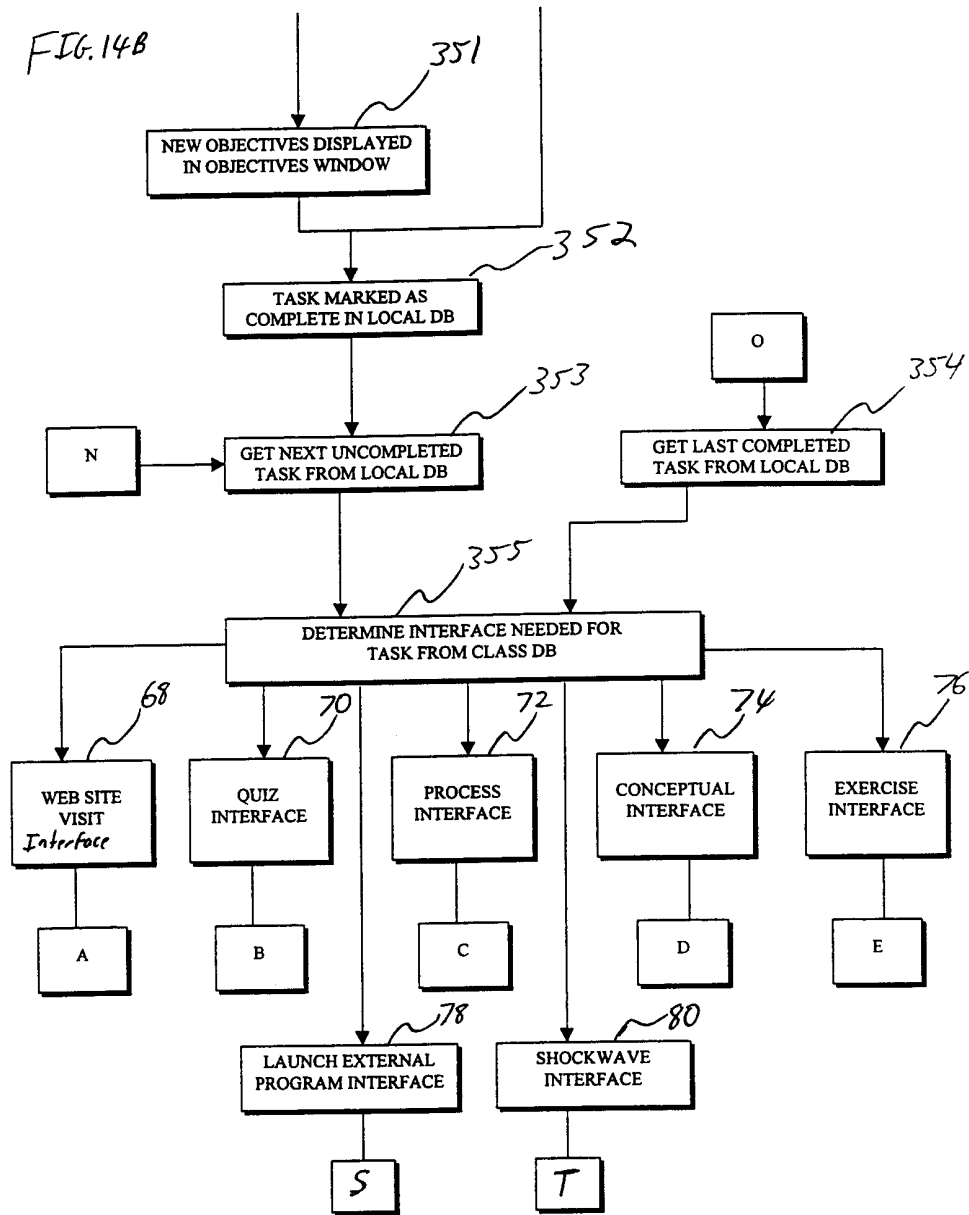
FIG. 13B

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FIG. 14A



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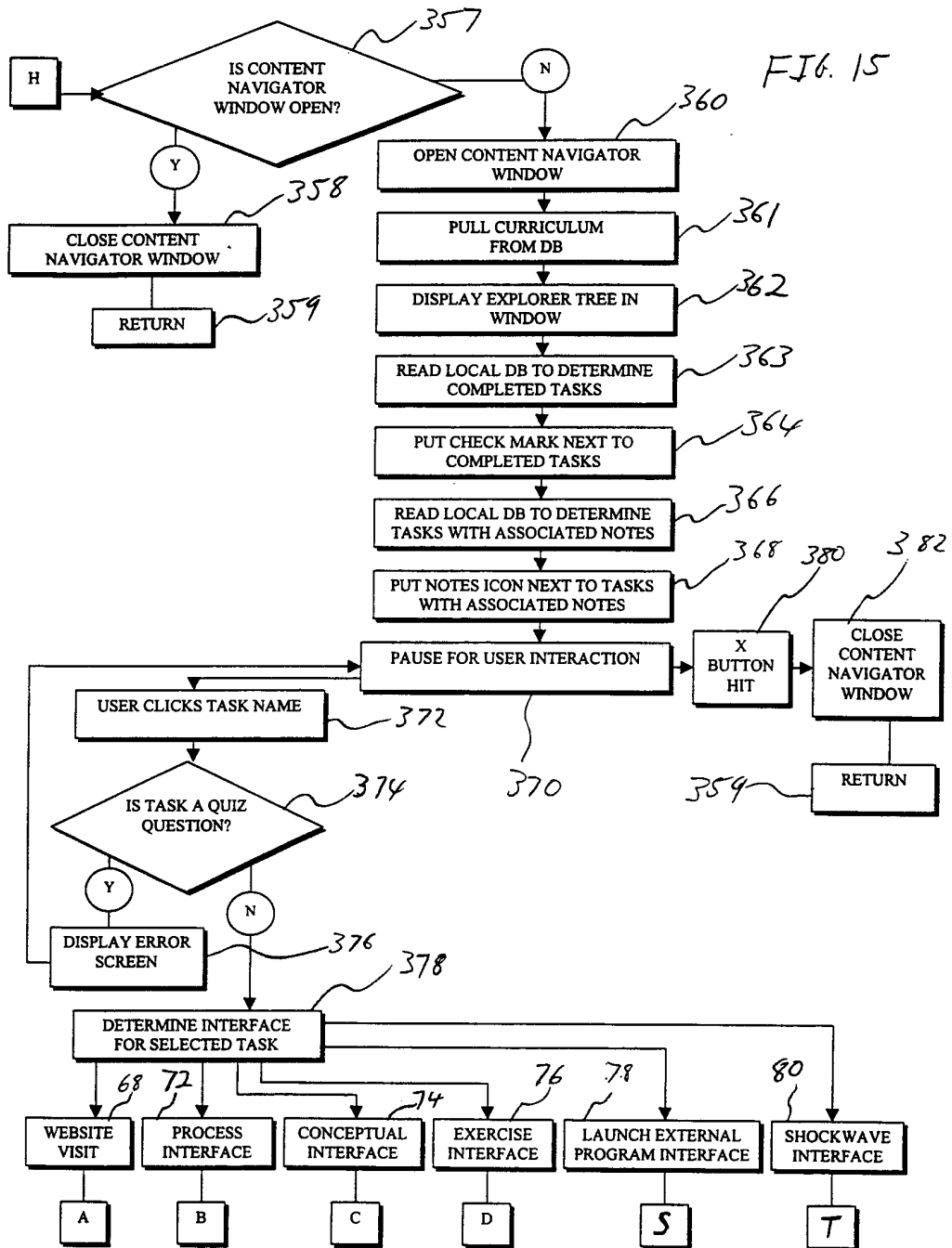
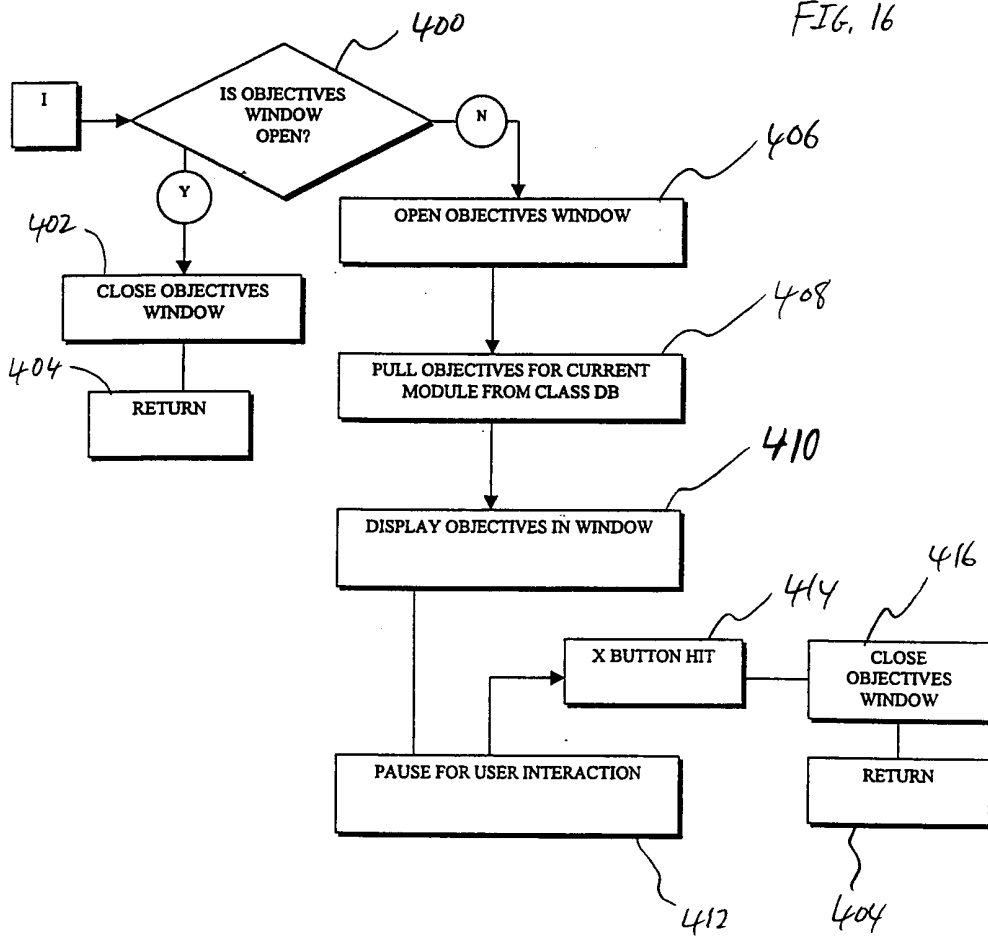


FIG. 16



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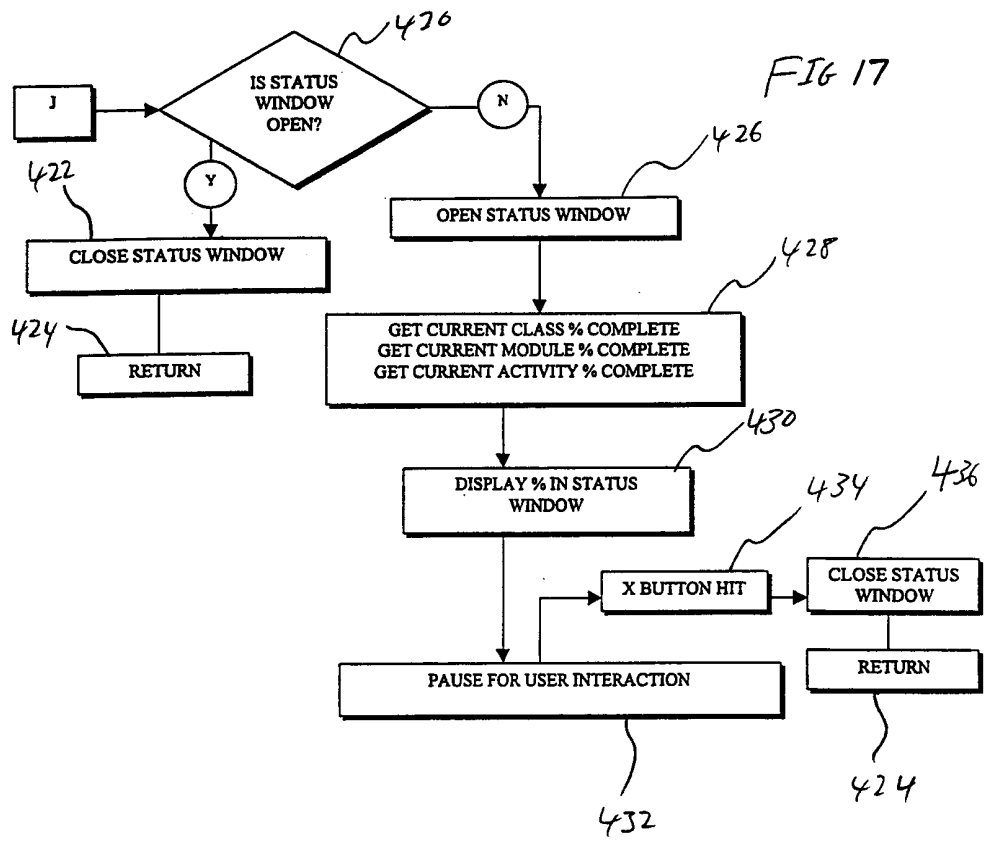


FIG. 18

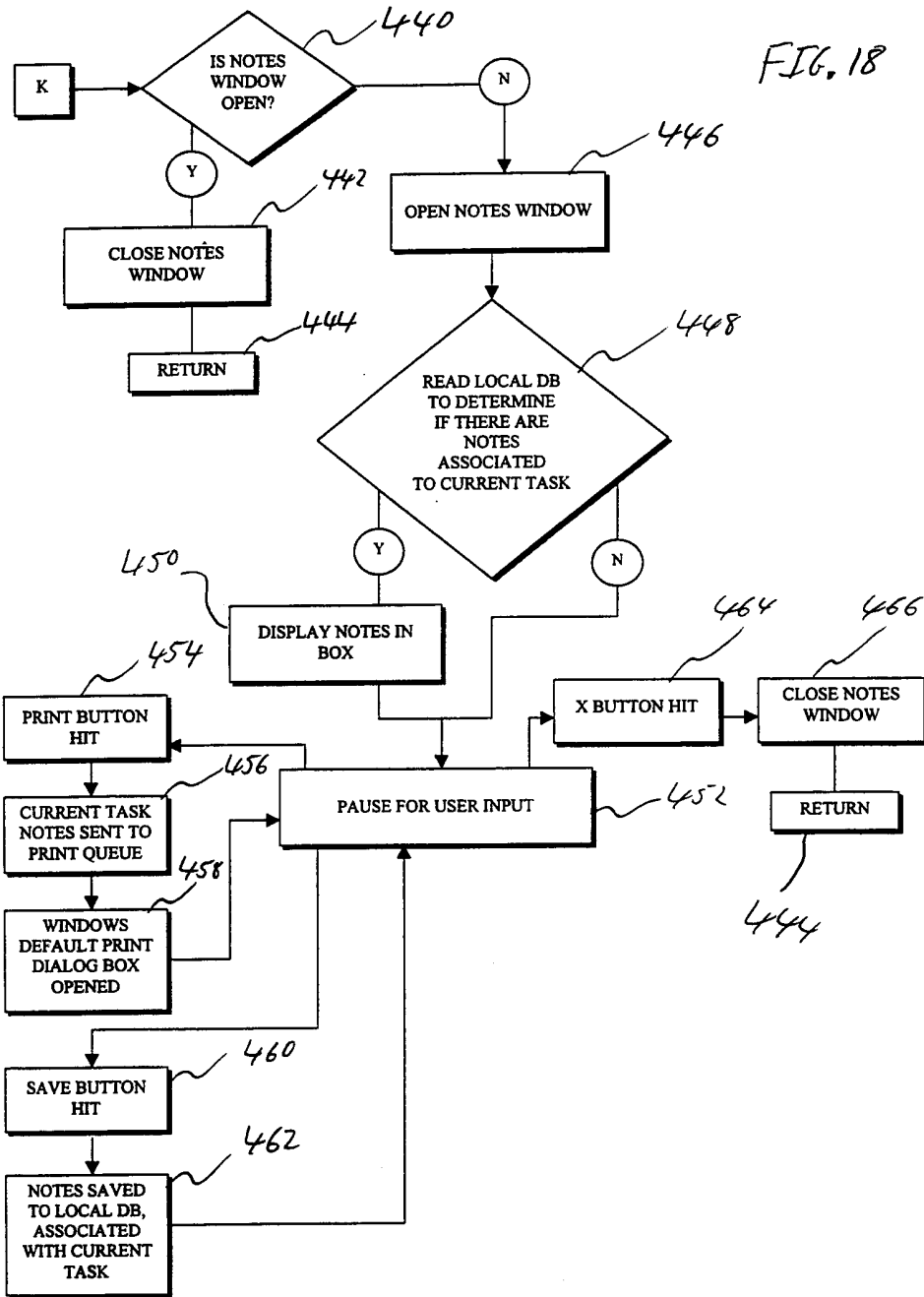
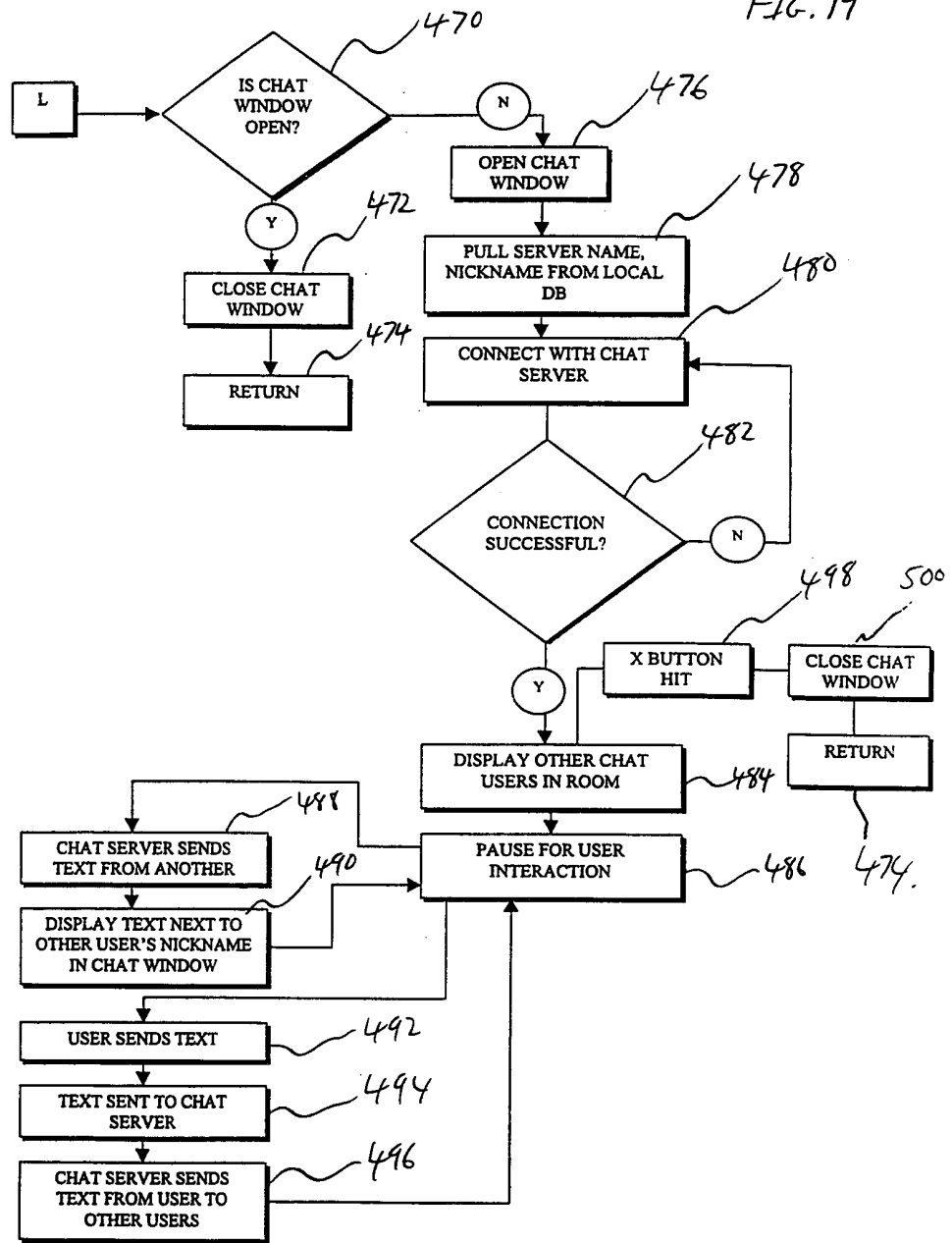
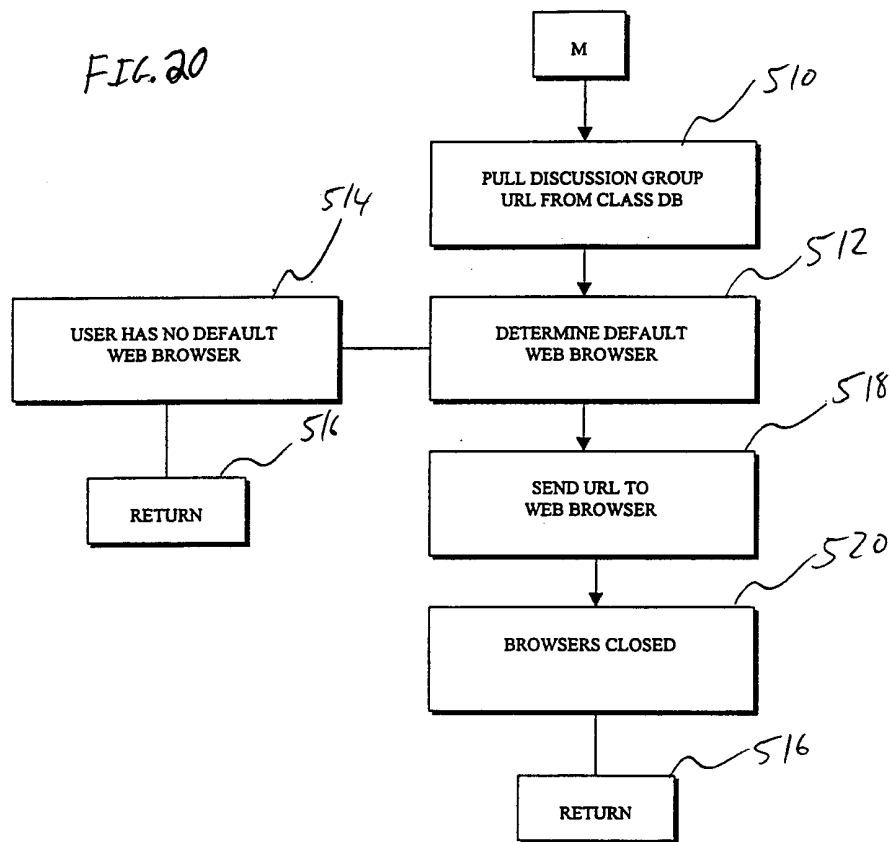


FIG. 19





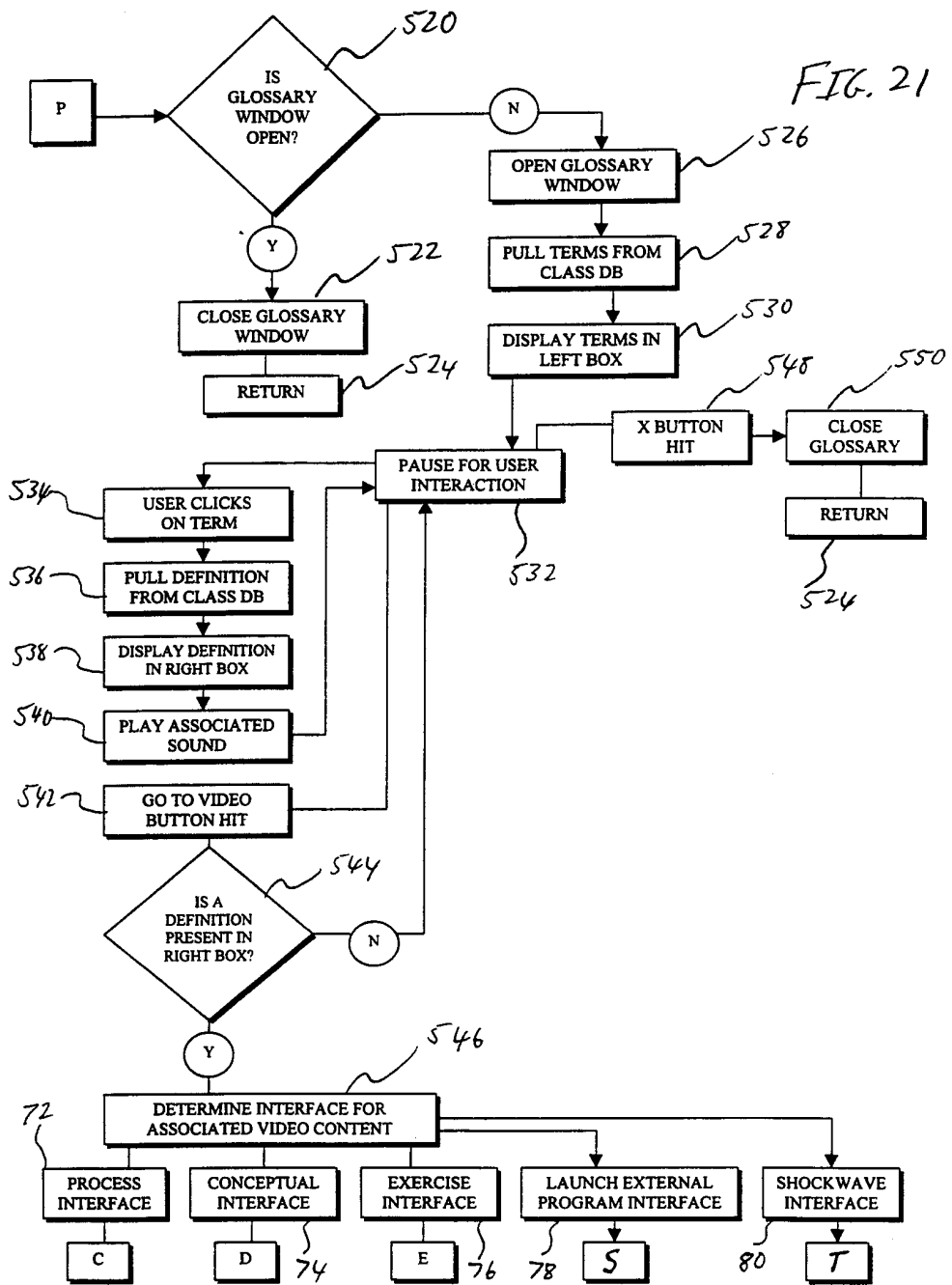
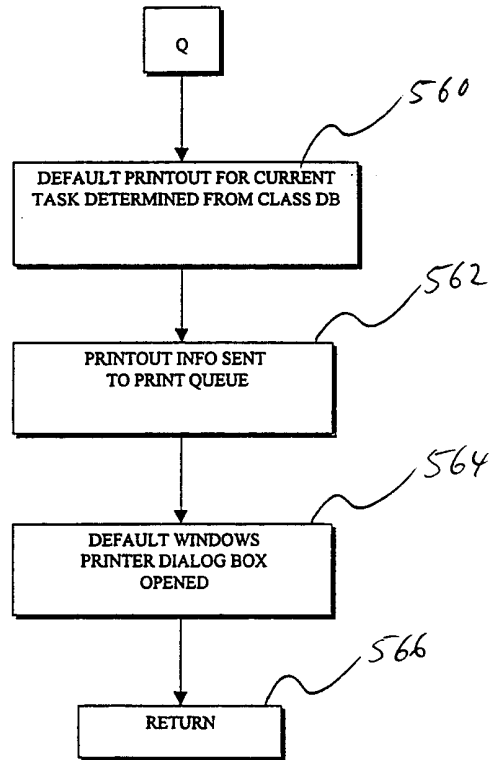
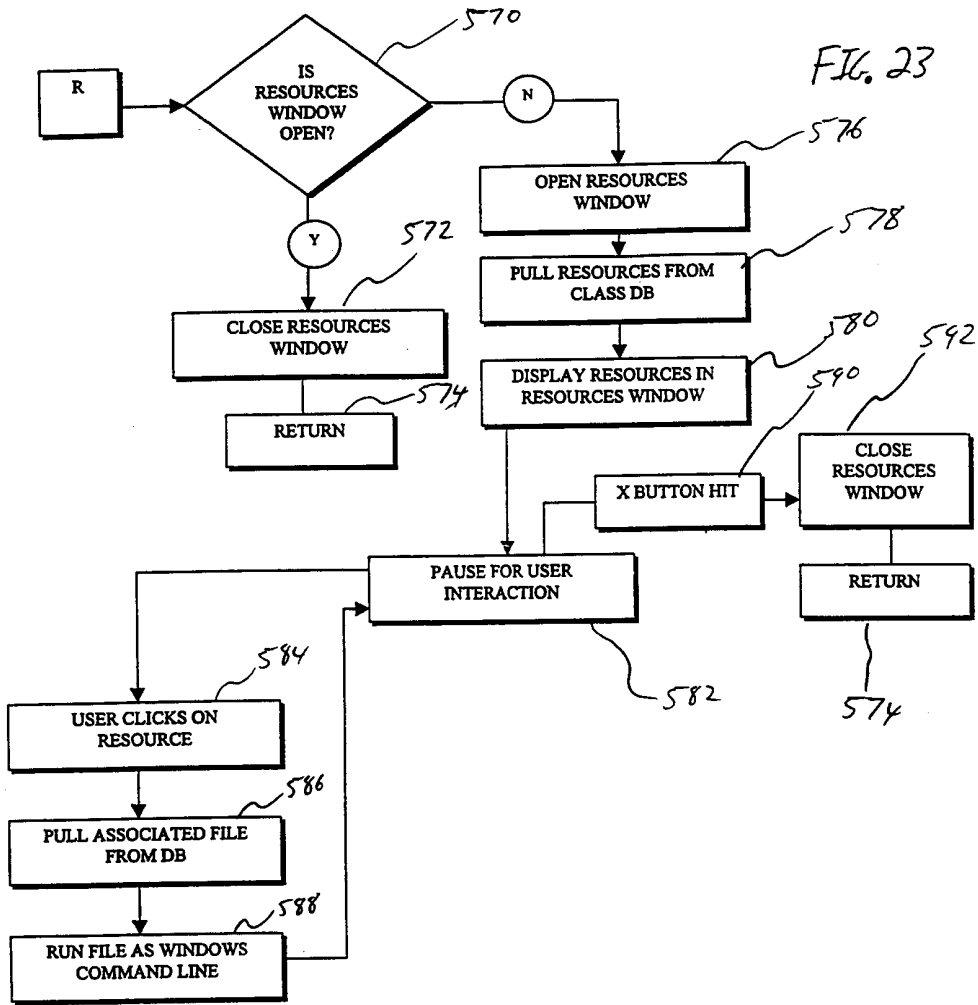
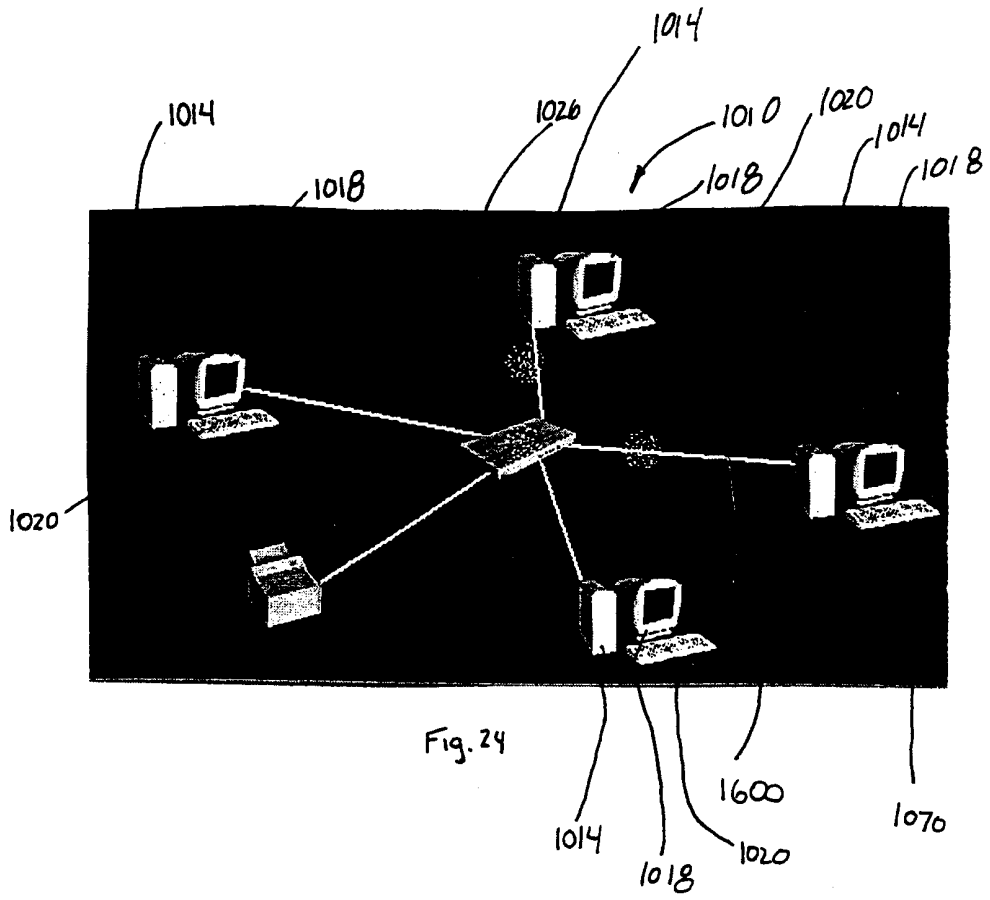


FIG. 22







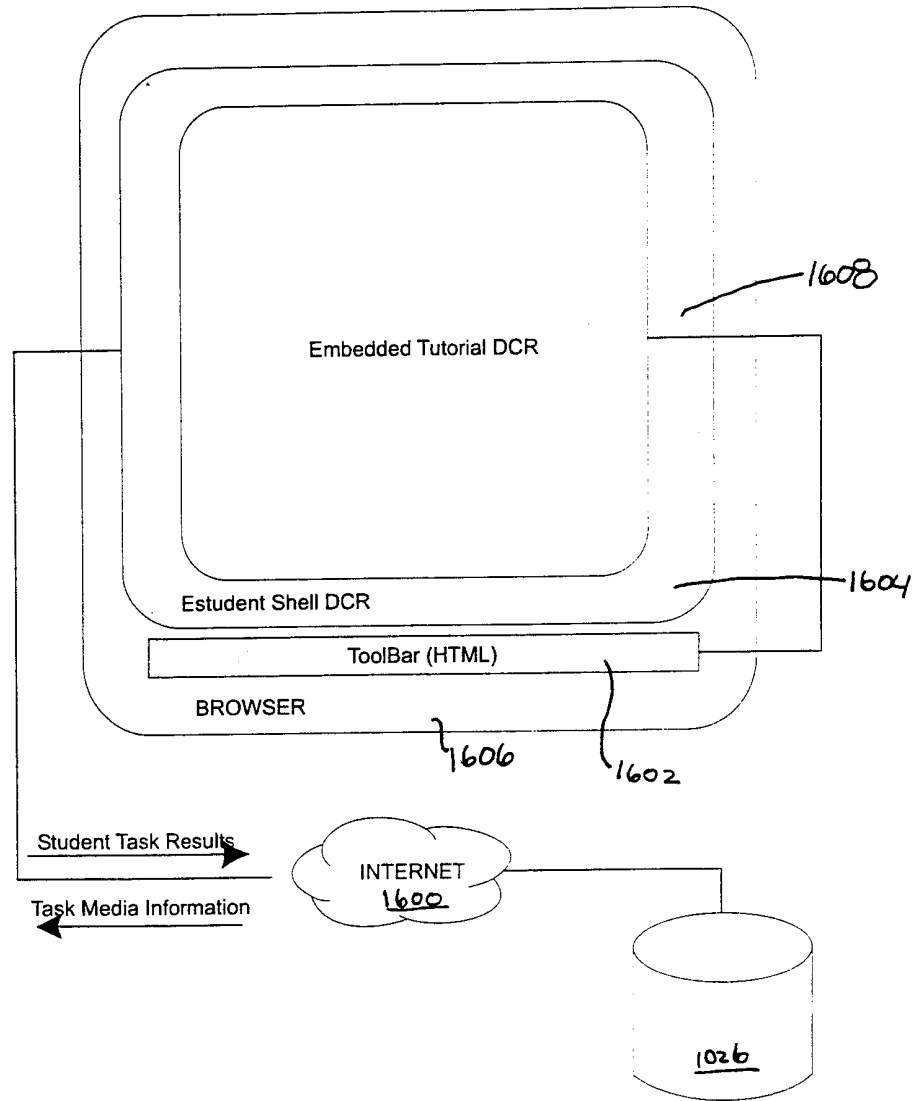
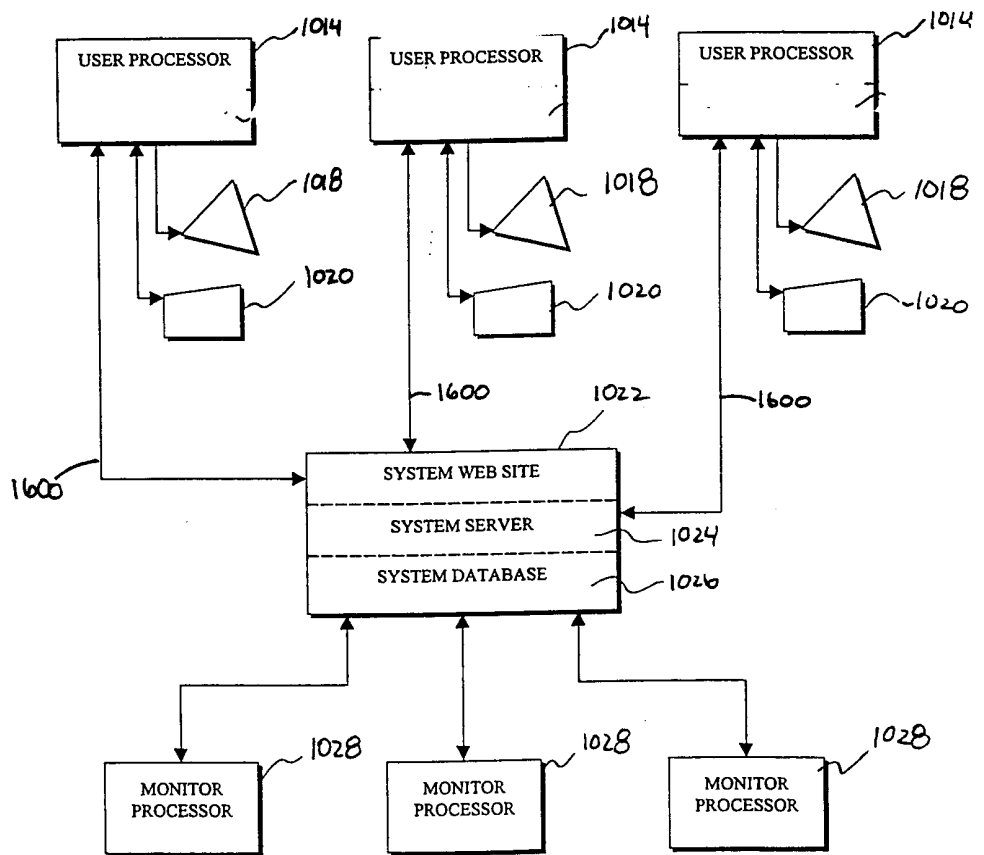


Fig. 25

Fig. 26



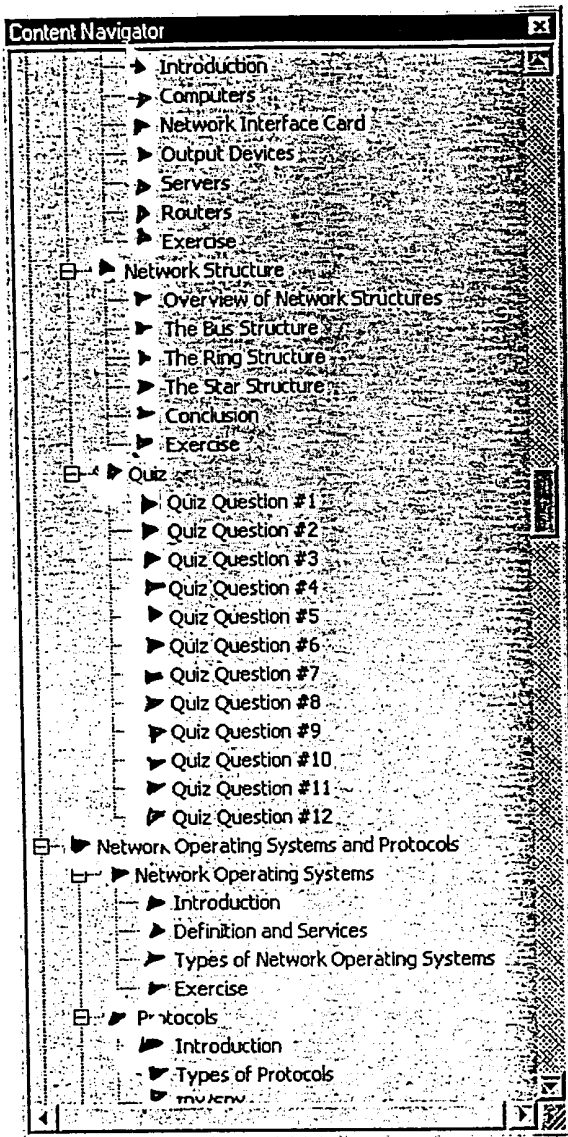


FIG 26A

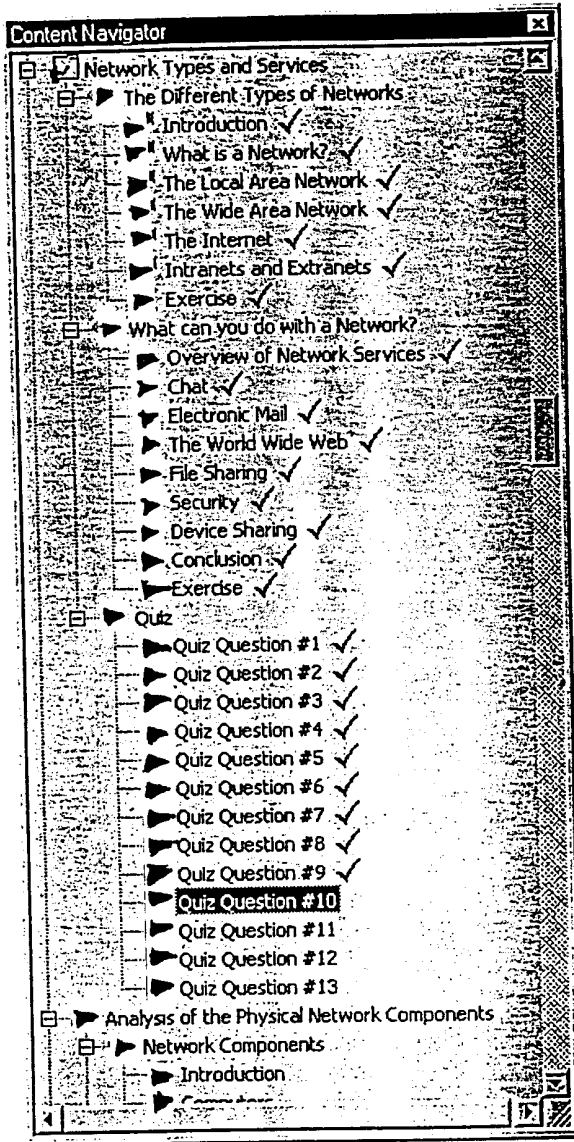


FIG 26B

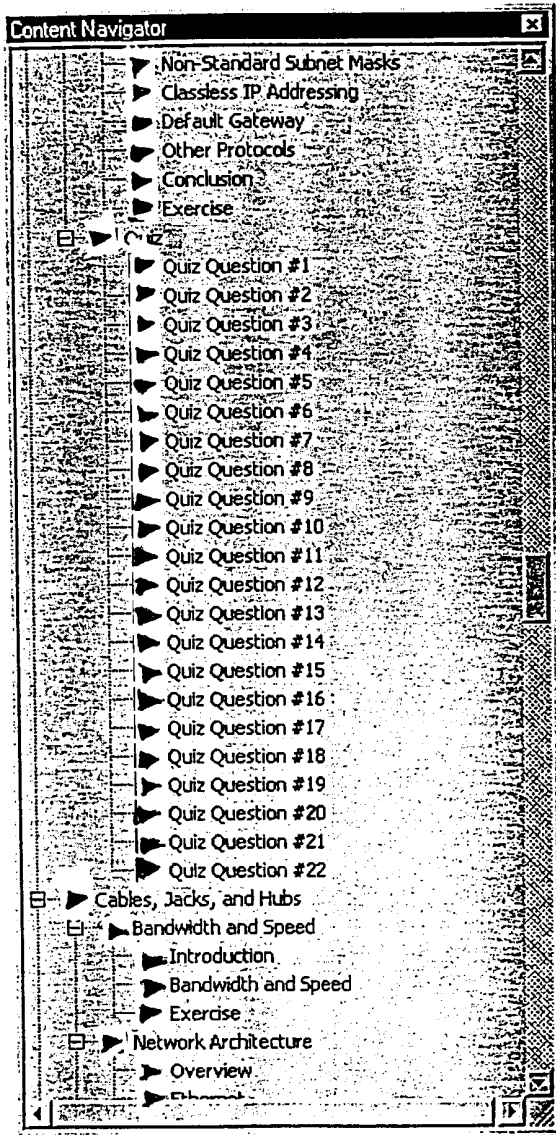


FIG. 26C

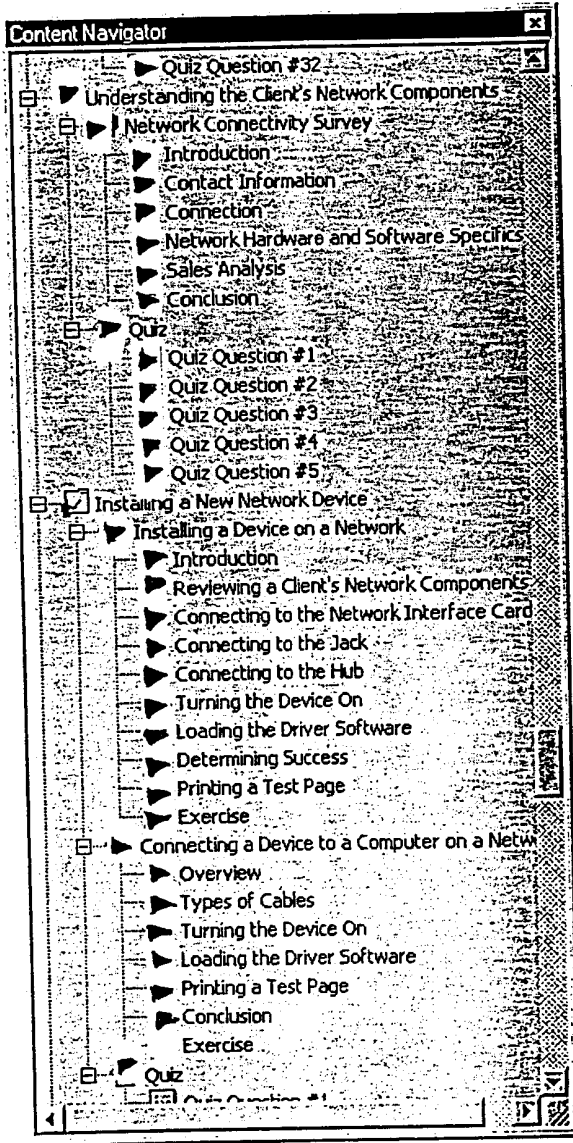


FIG. 26D

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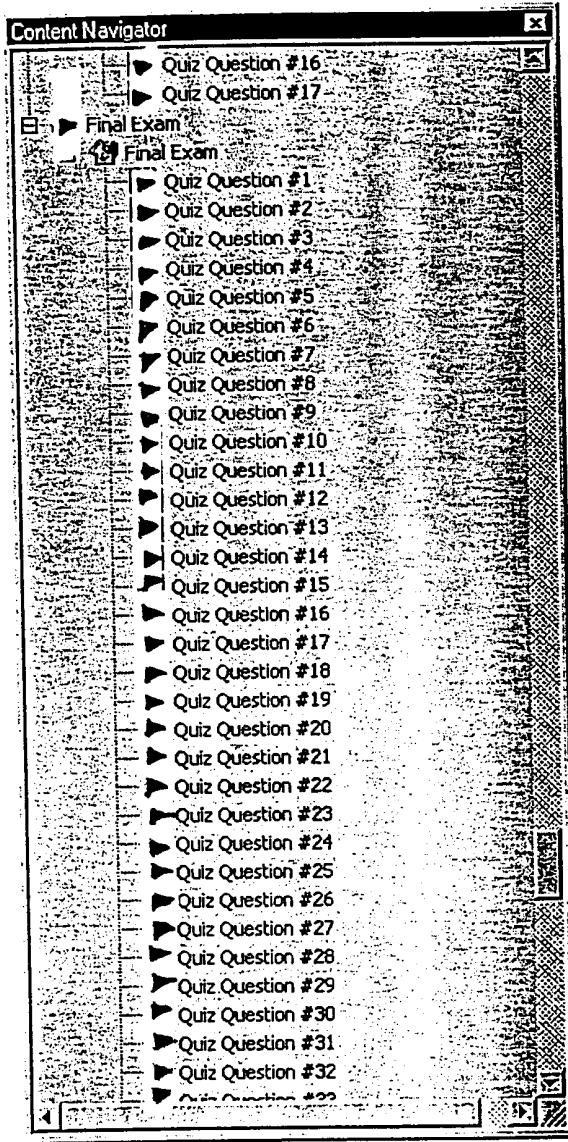


FIG. 26E

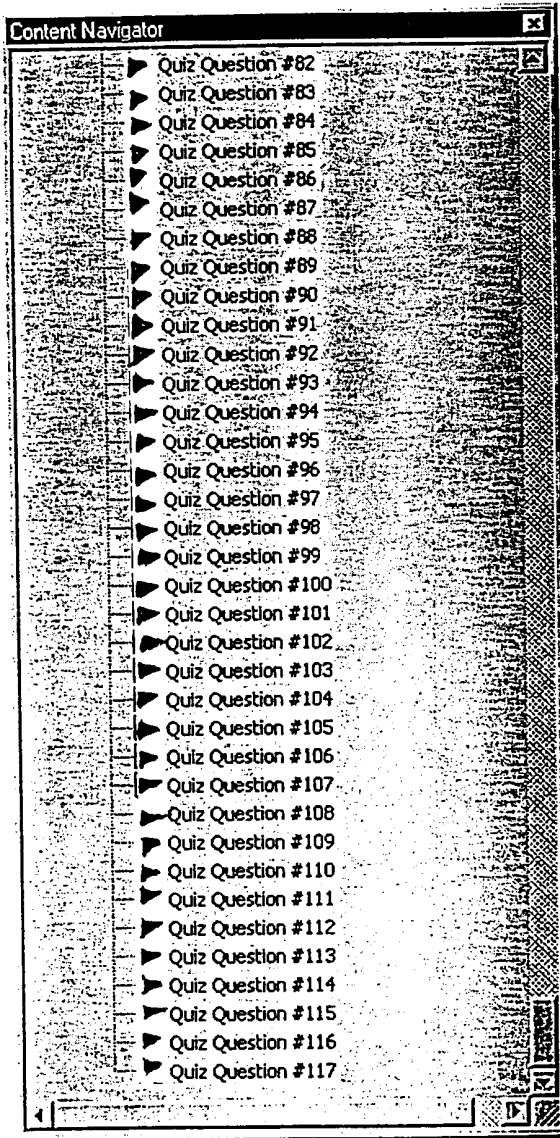


FIG. 26F

FIG. 27A

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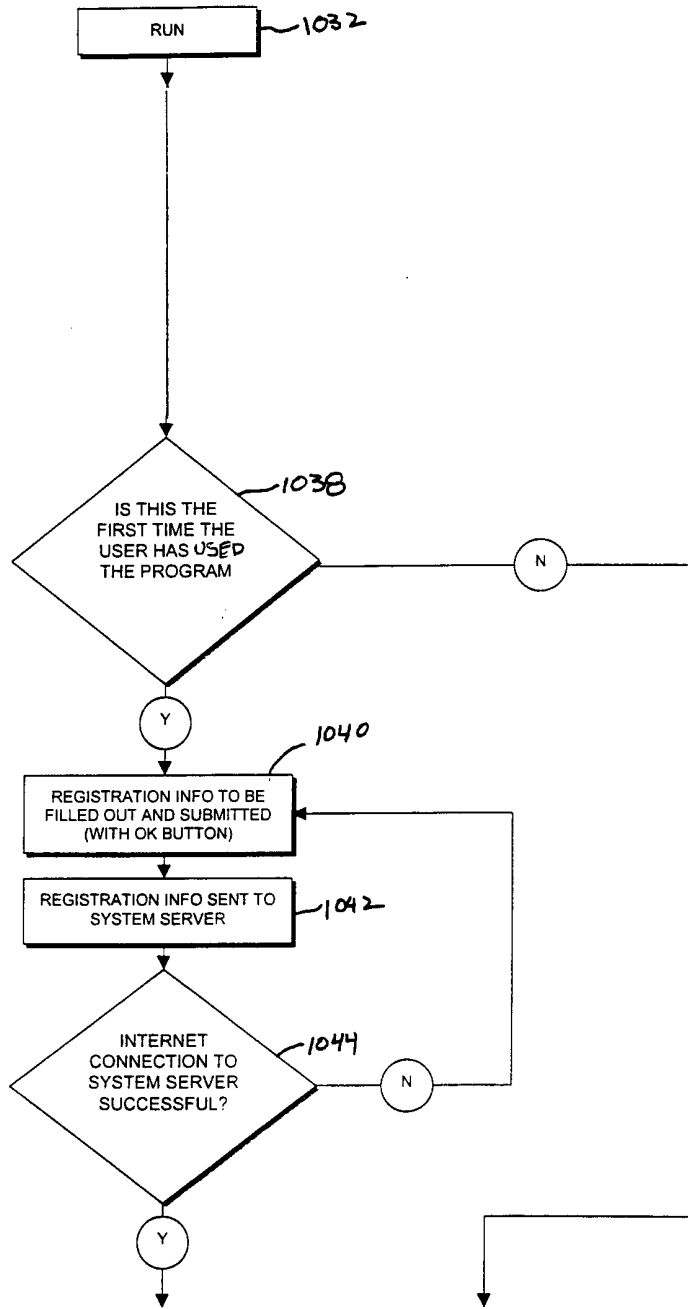
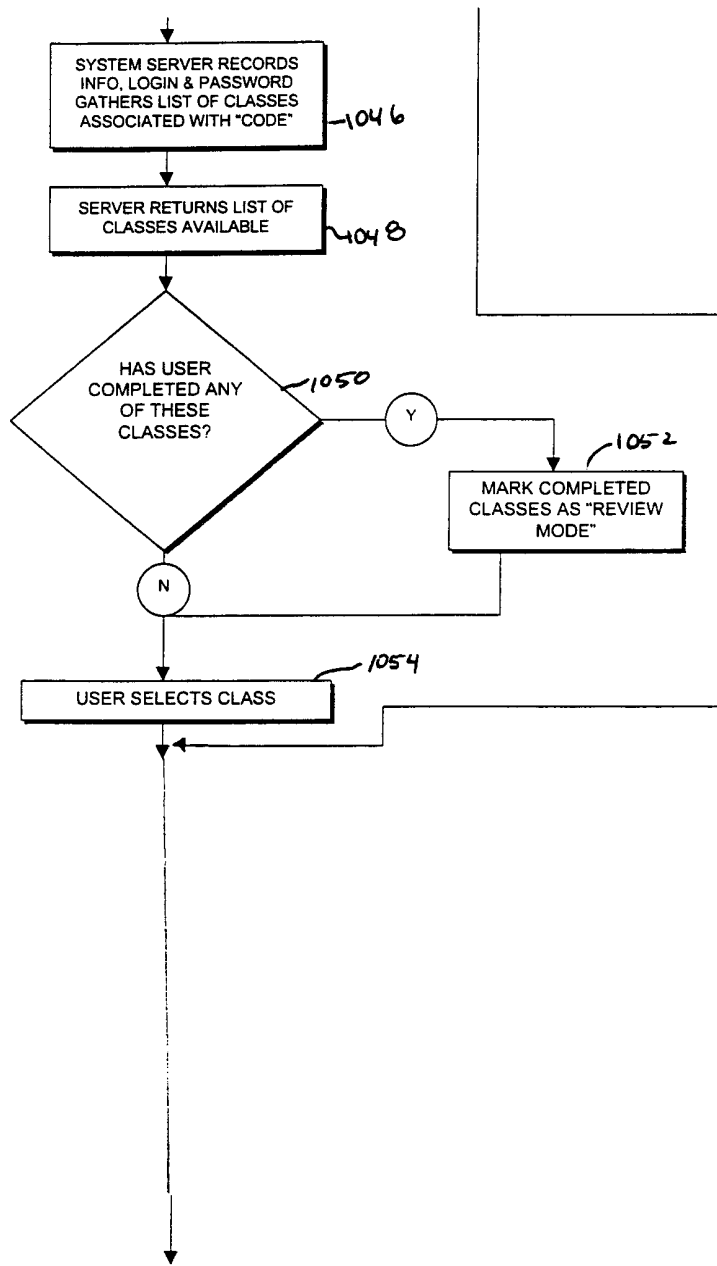
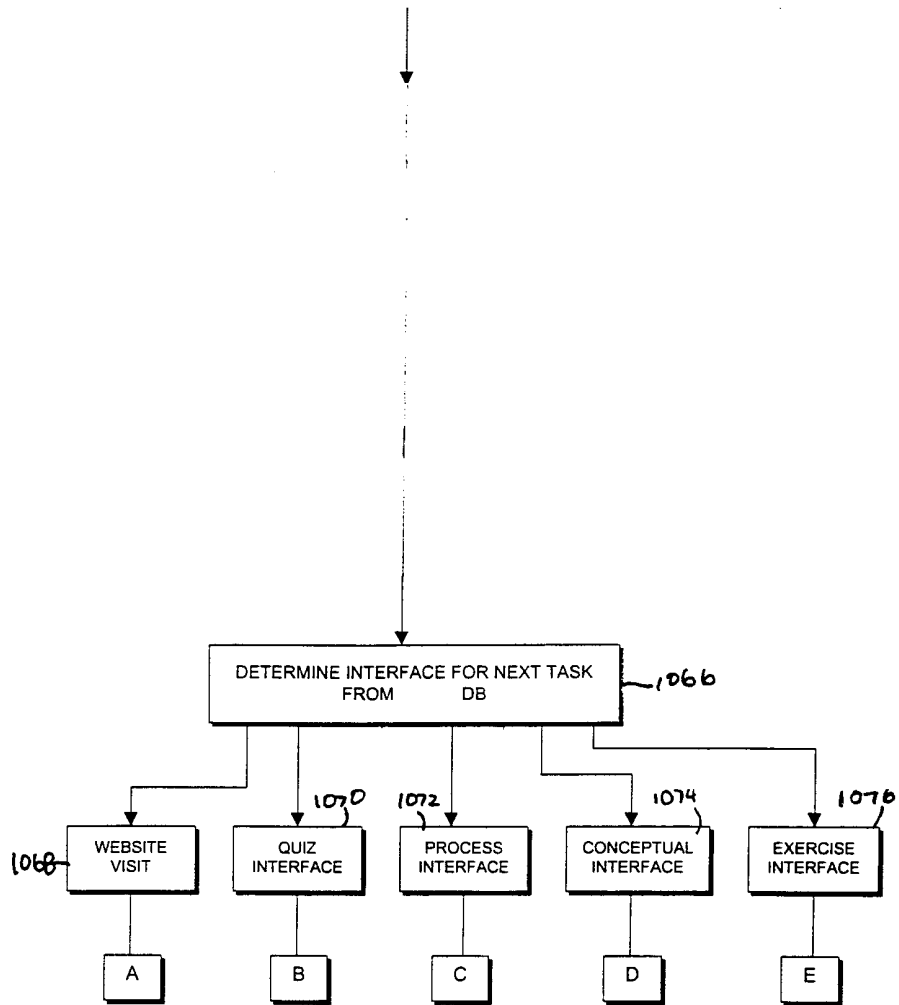


FIG. 27B





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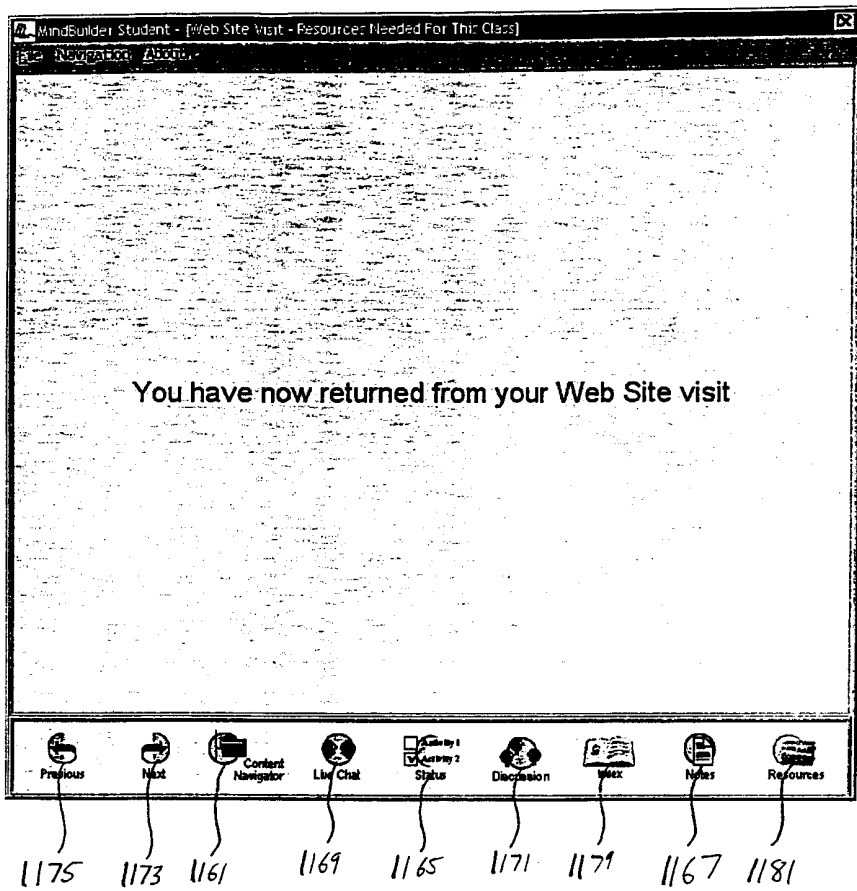
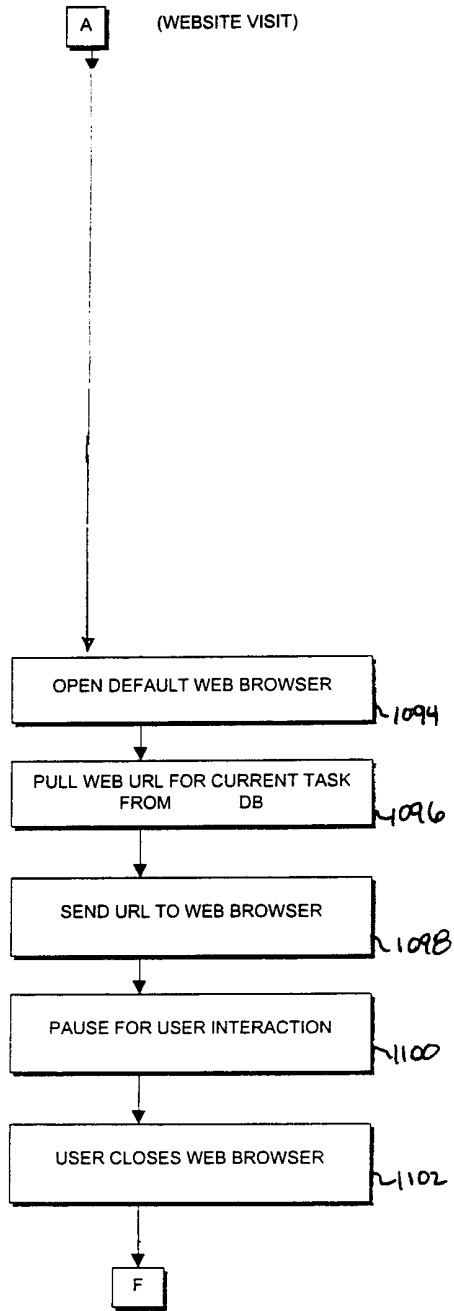


FIG. 28A

FIG 2BB



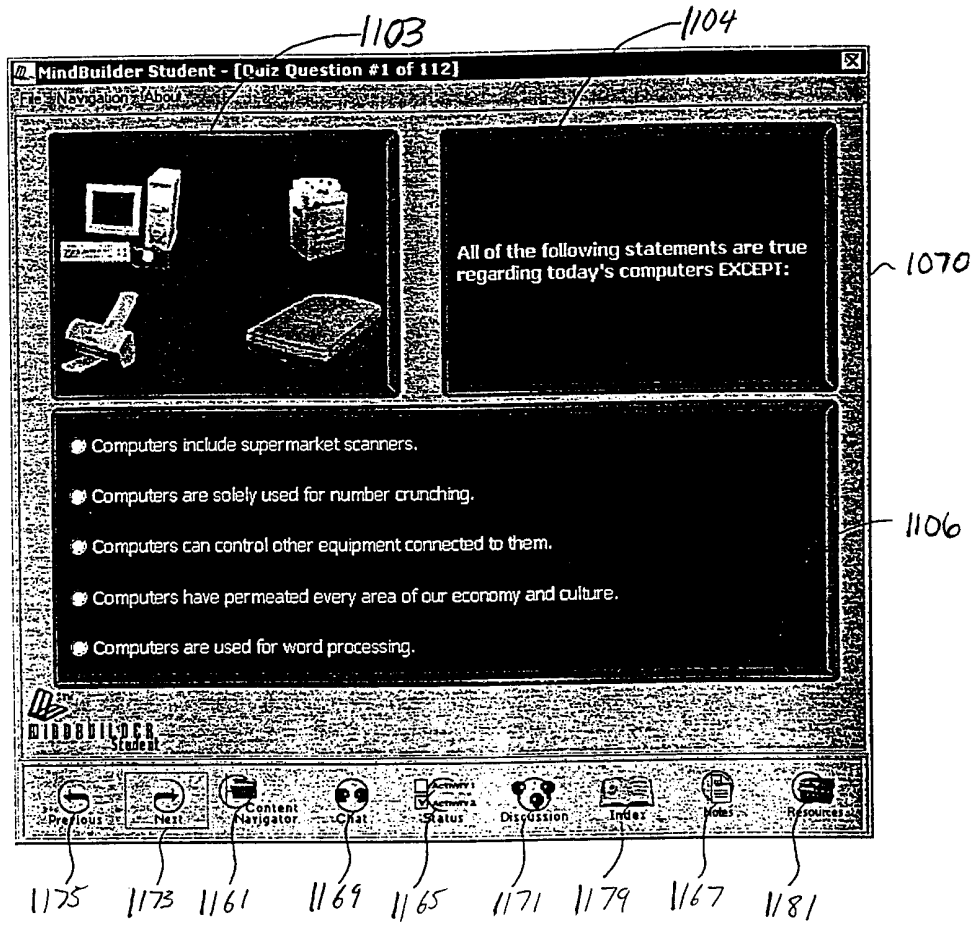


FIG. 29

FIG. 30A

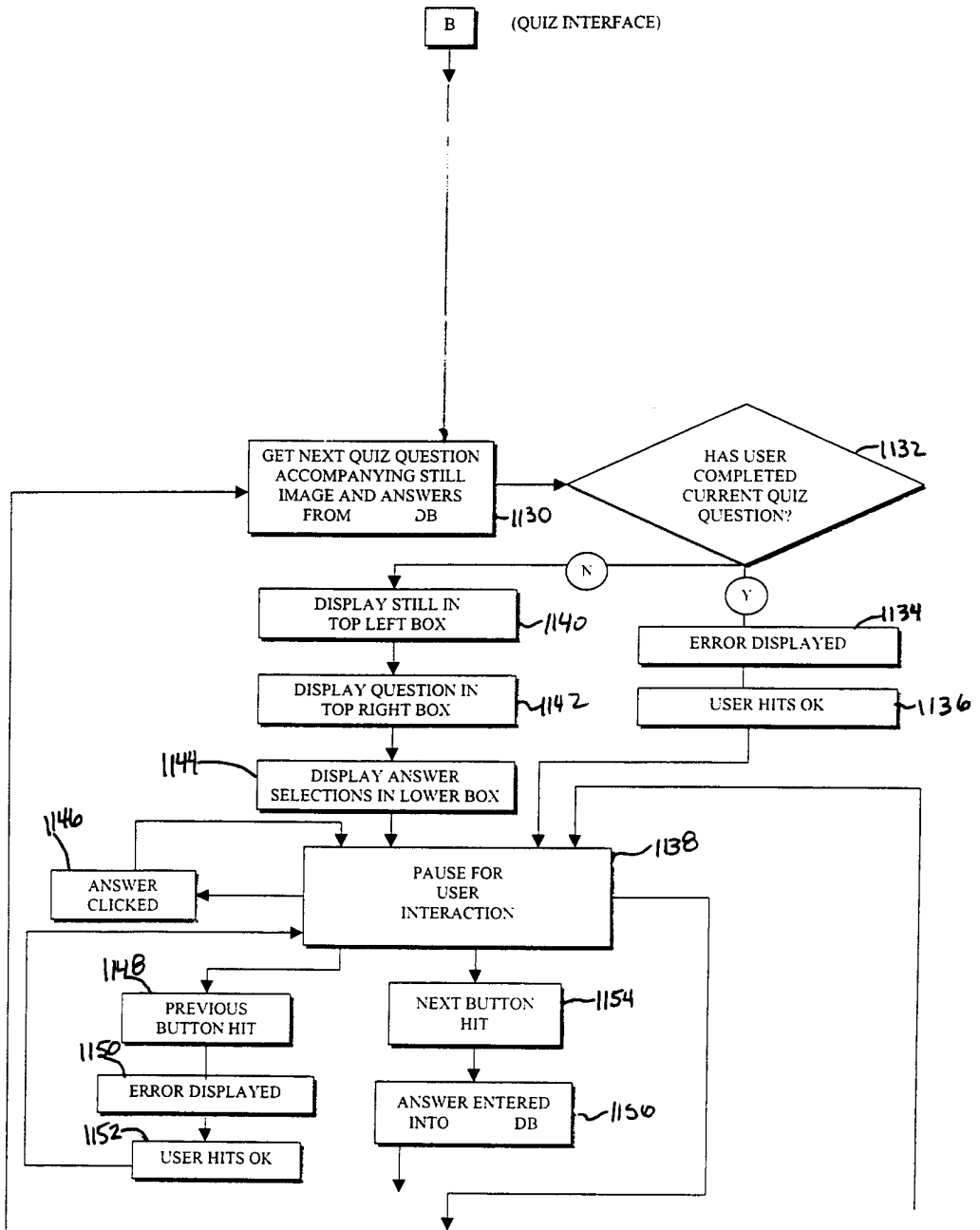
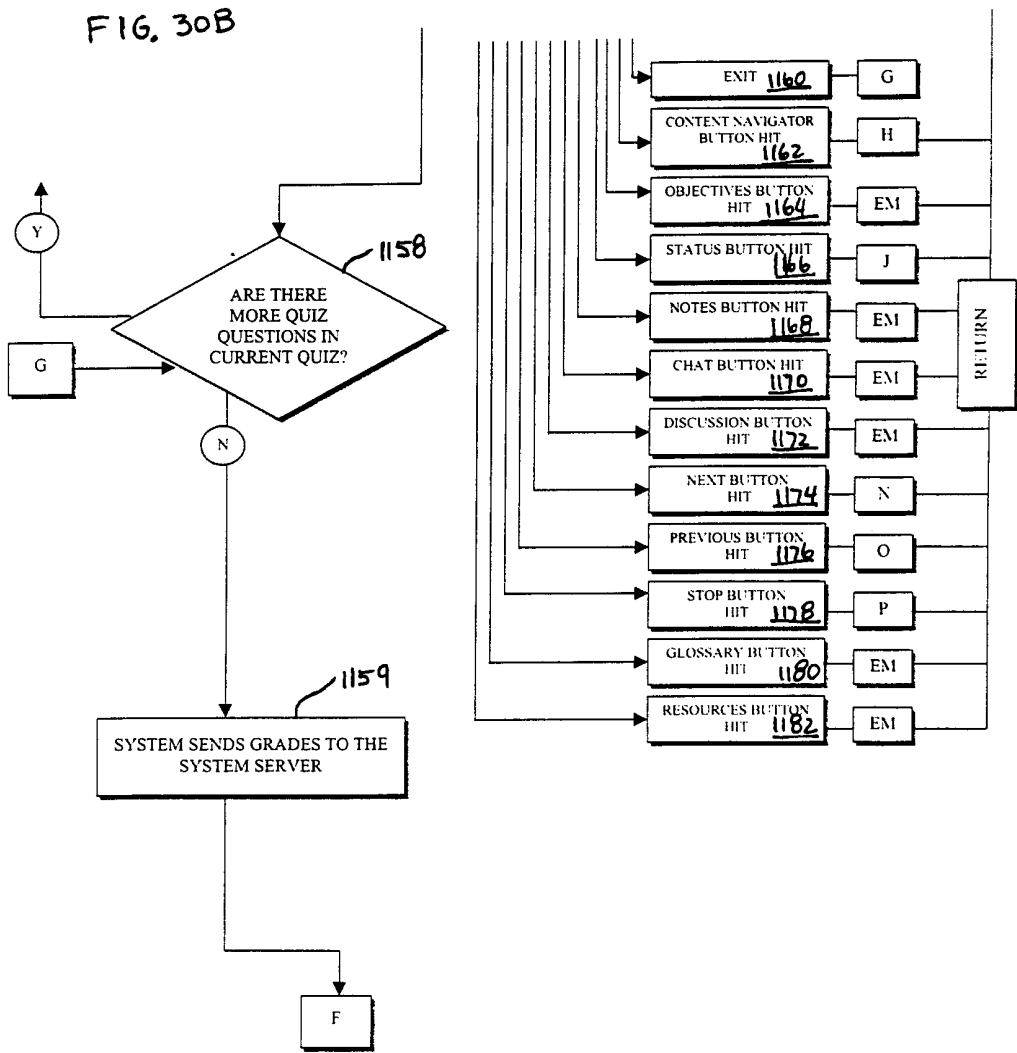


FIG. 30B



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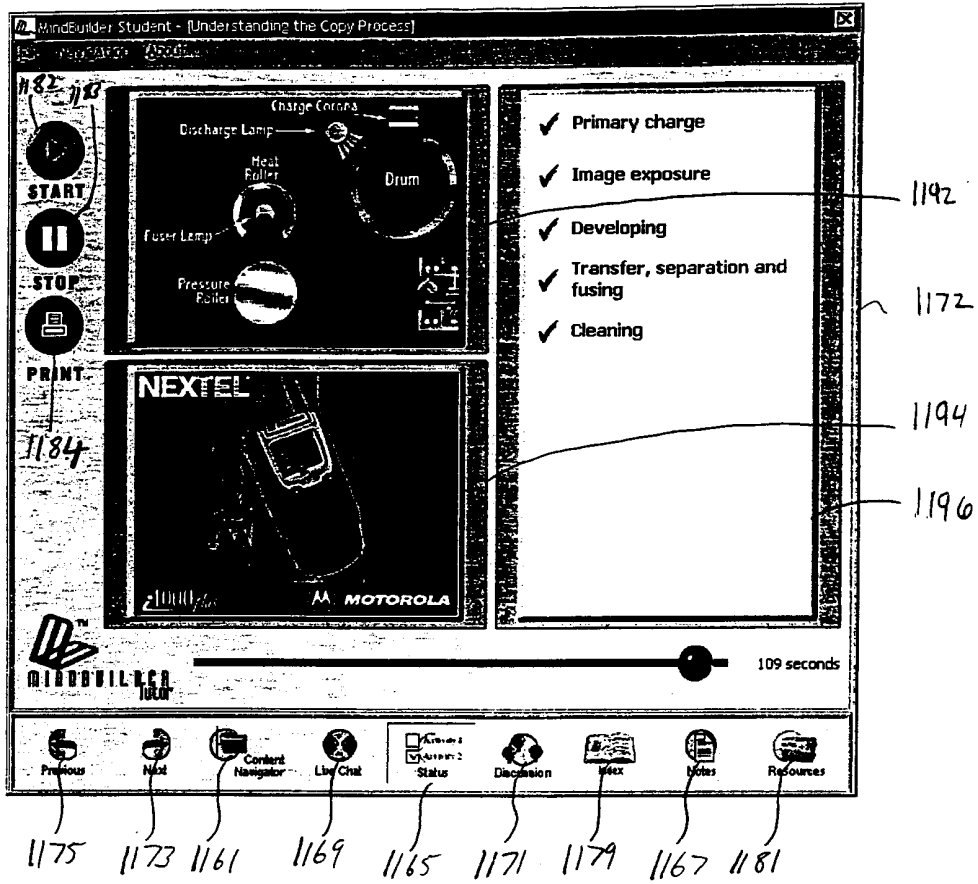
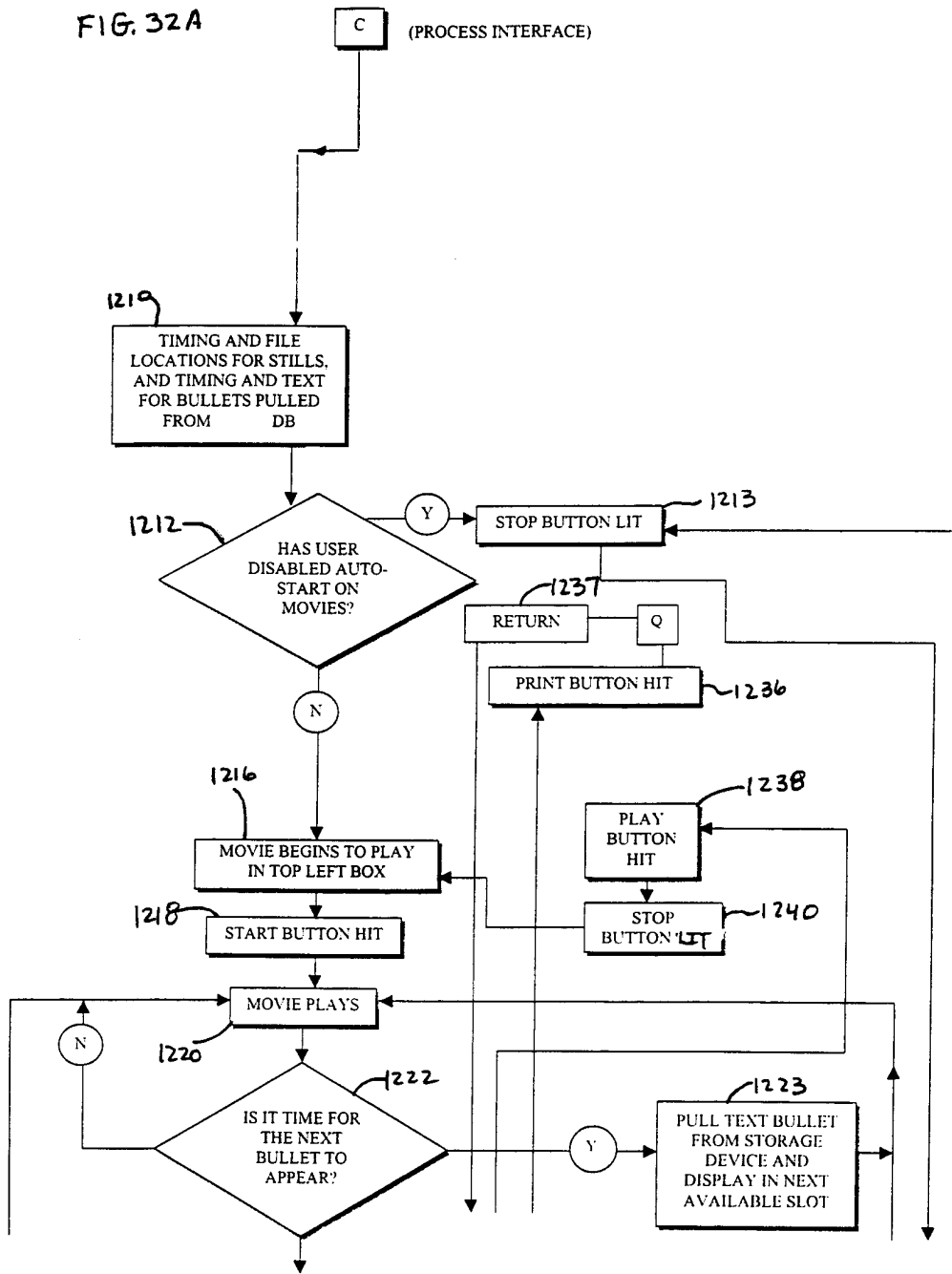


FIG. 31

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FIG. 32A



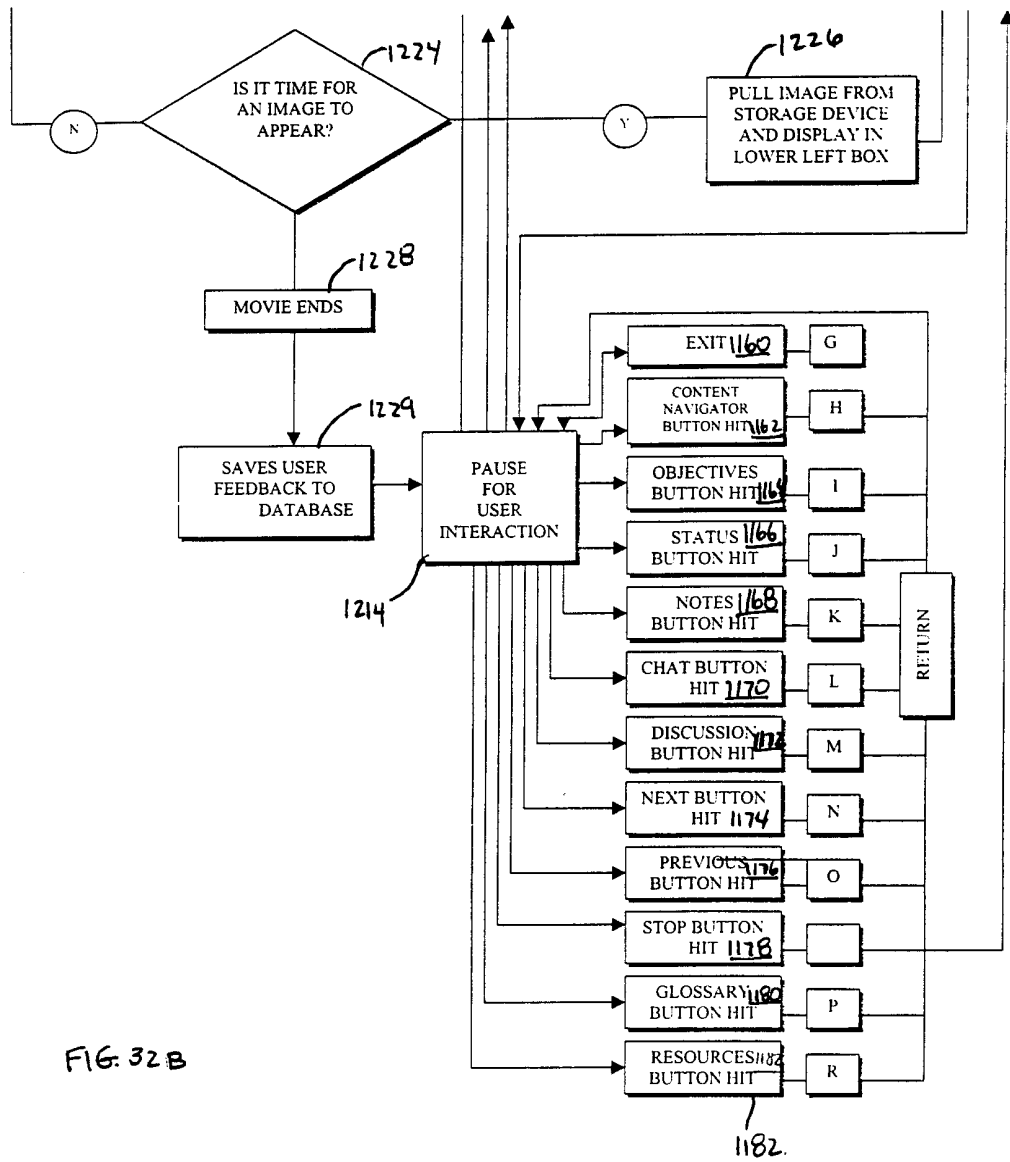


FIG. 32B

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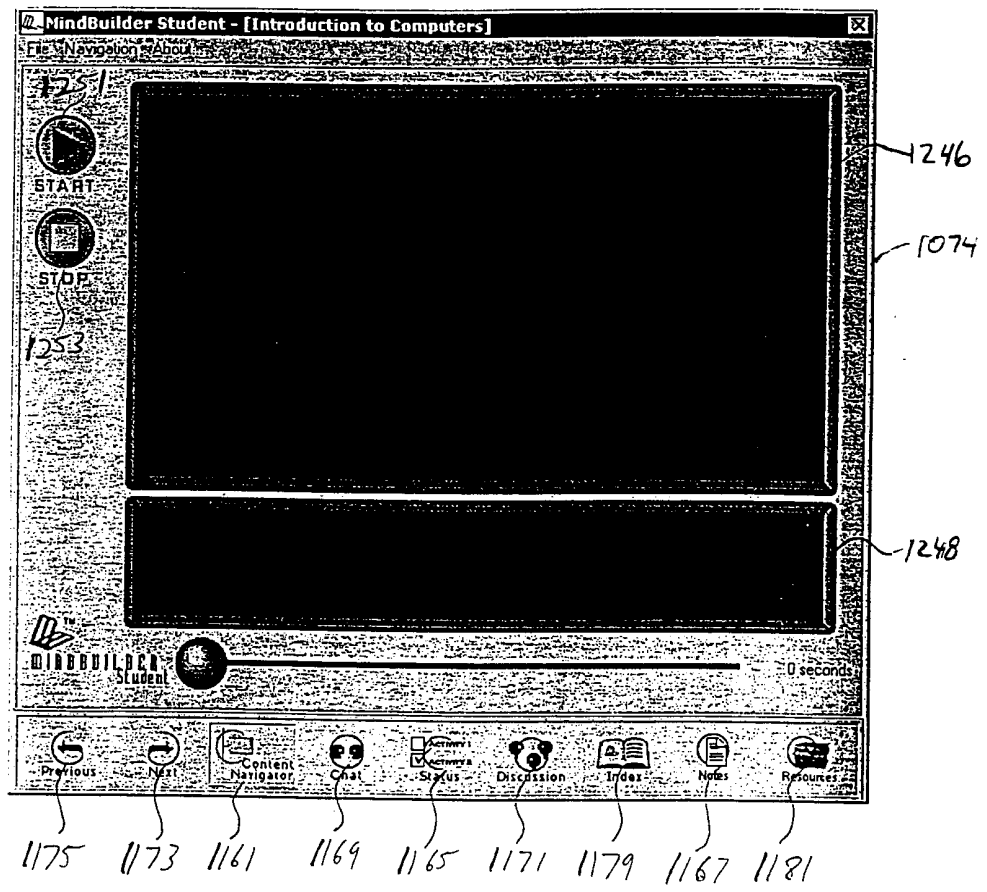
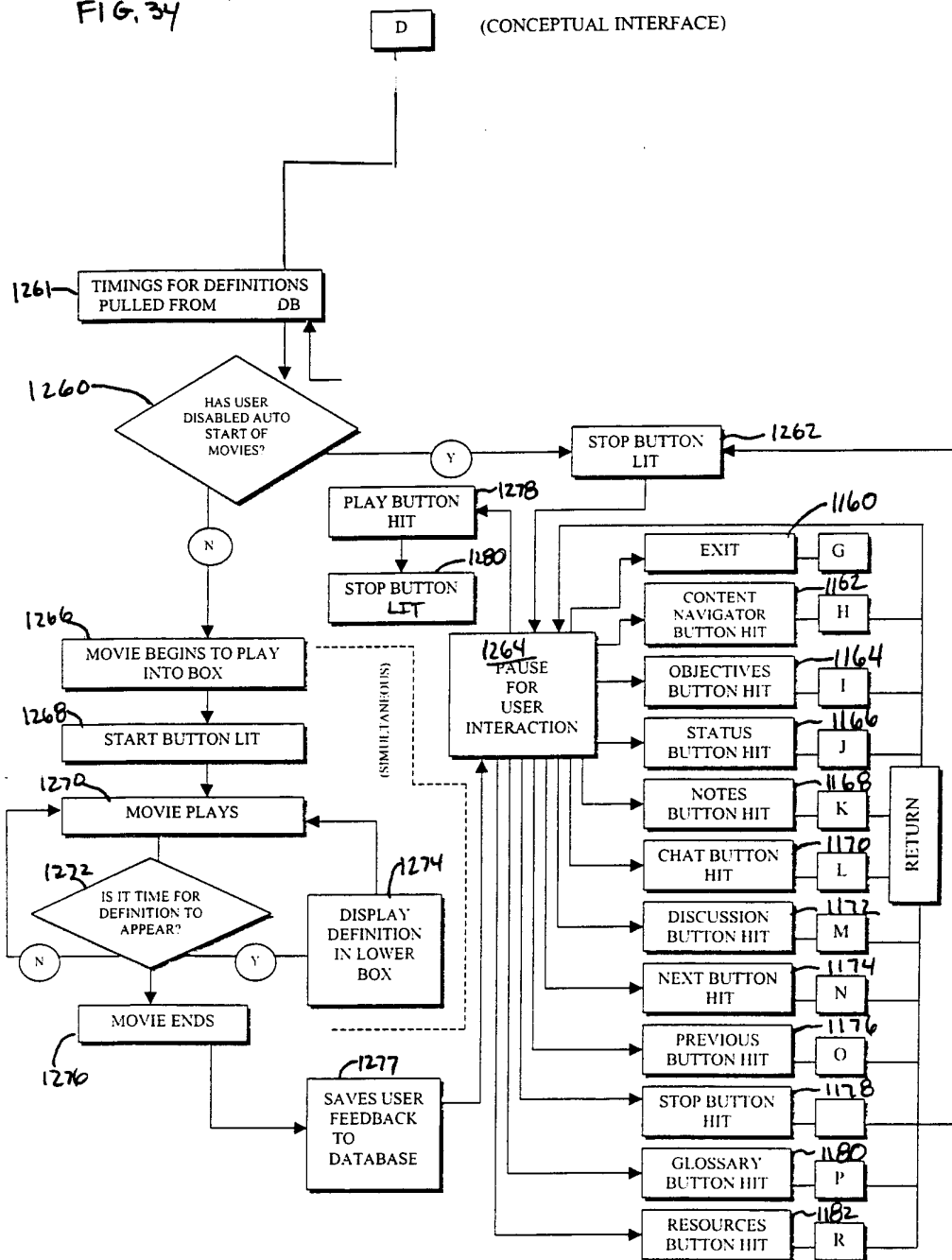


FIG. 33

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FIG. 34



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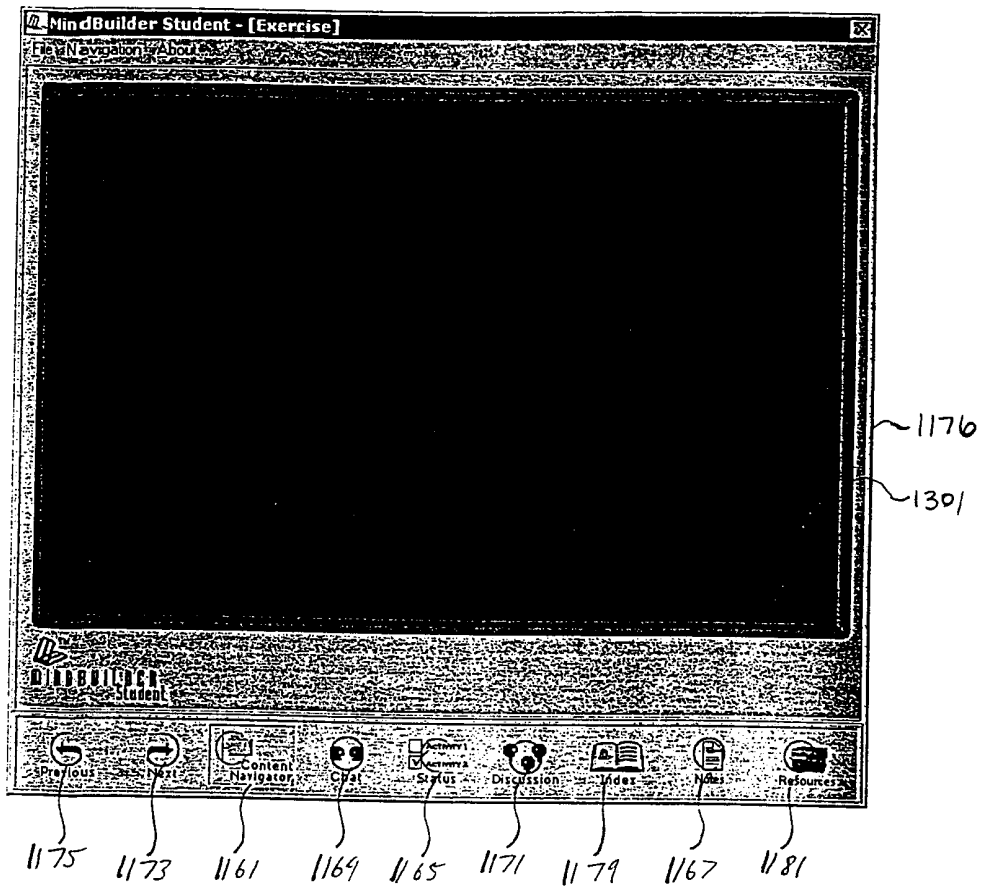
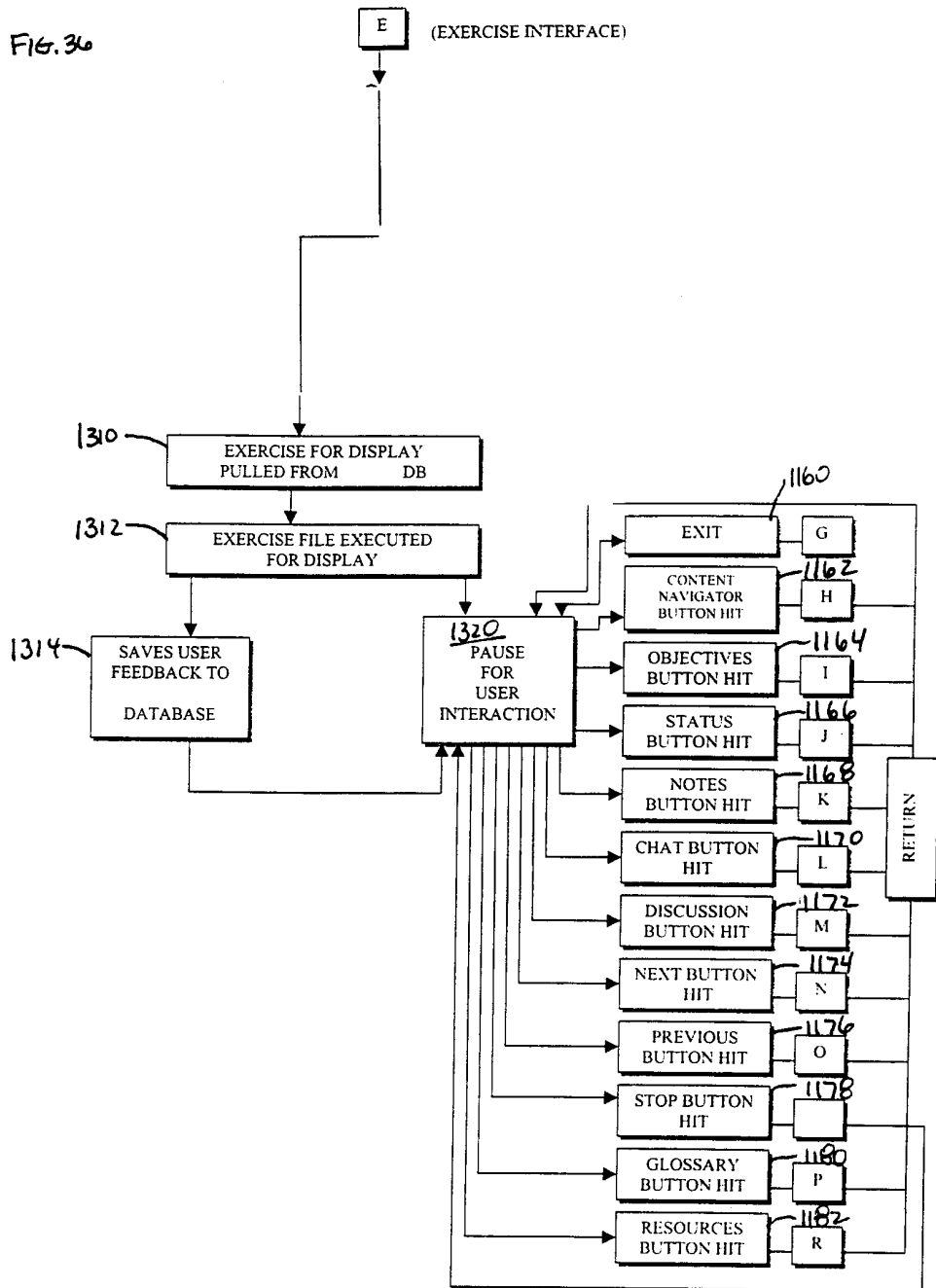
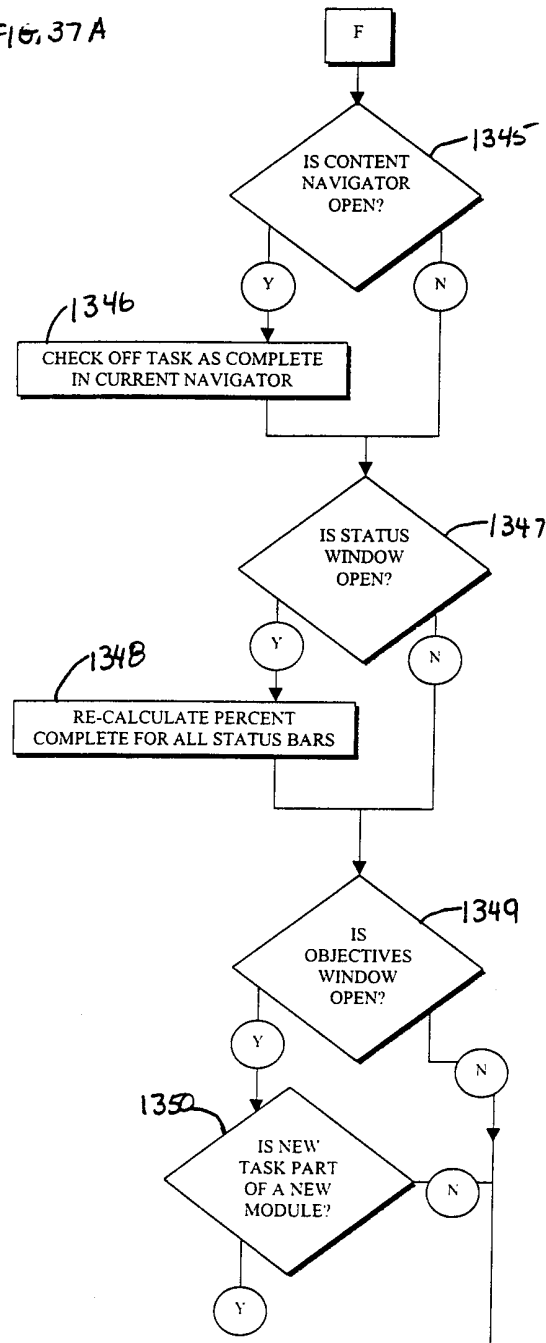


FIG. 35



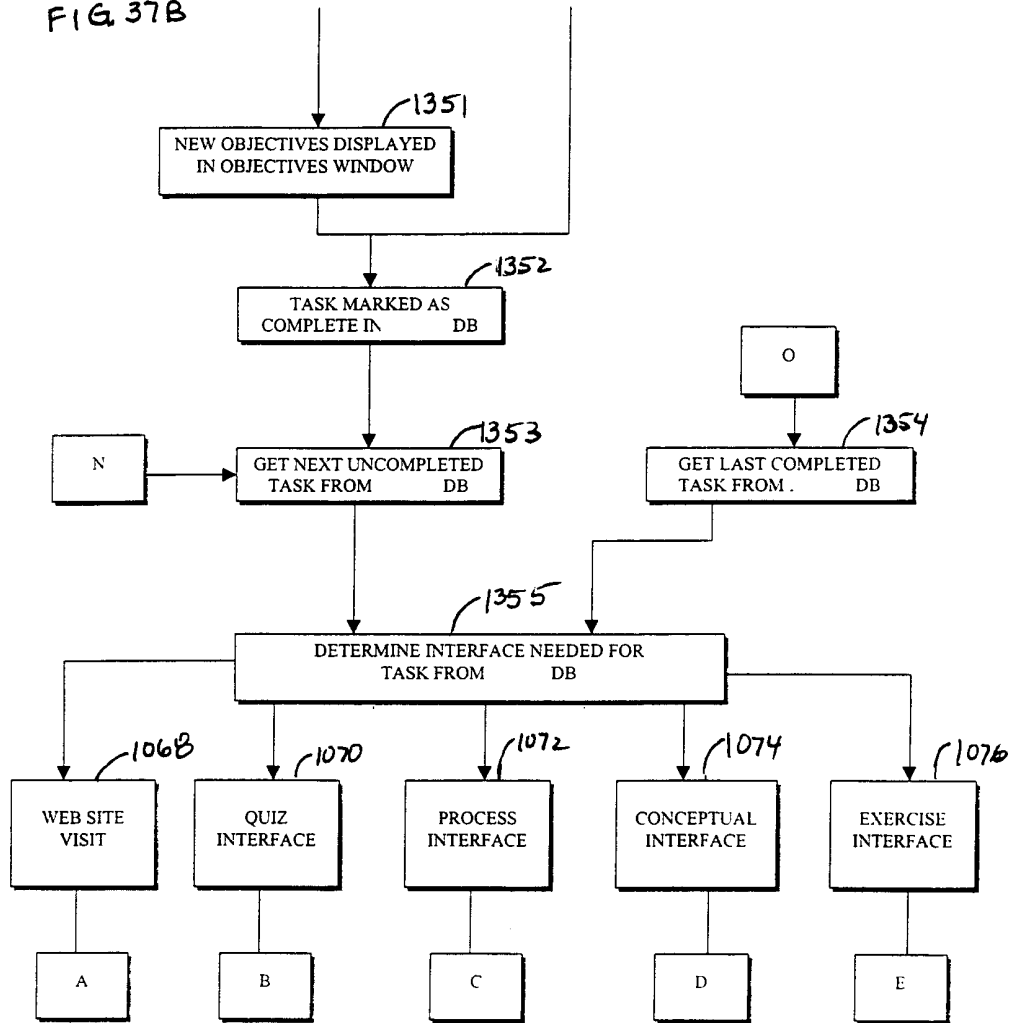
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FIG. 37A



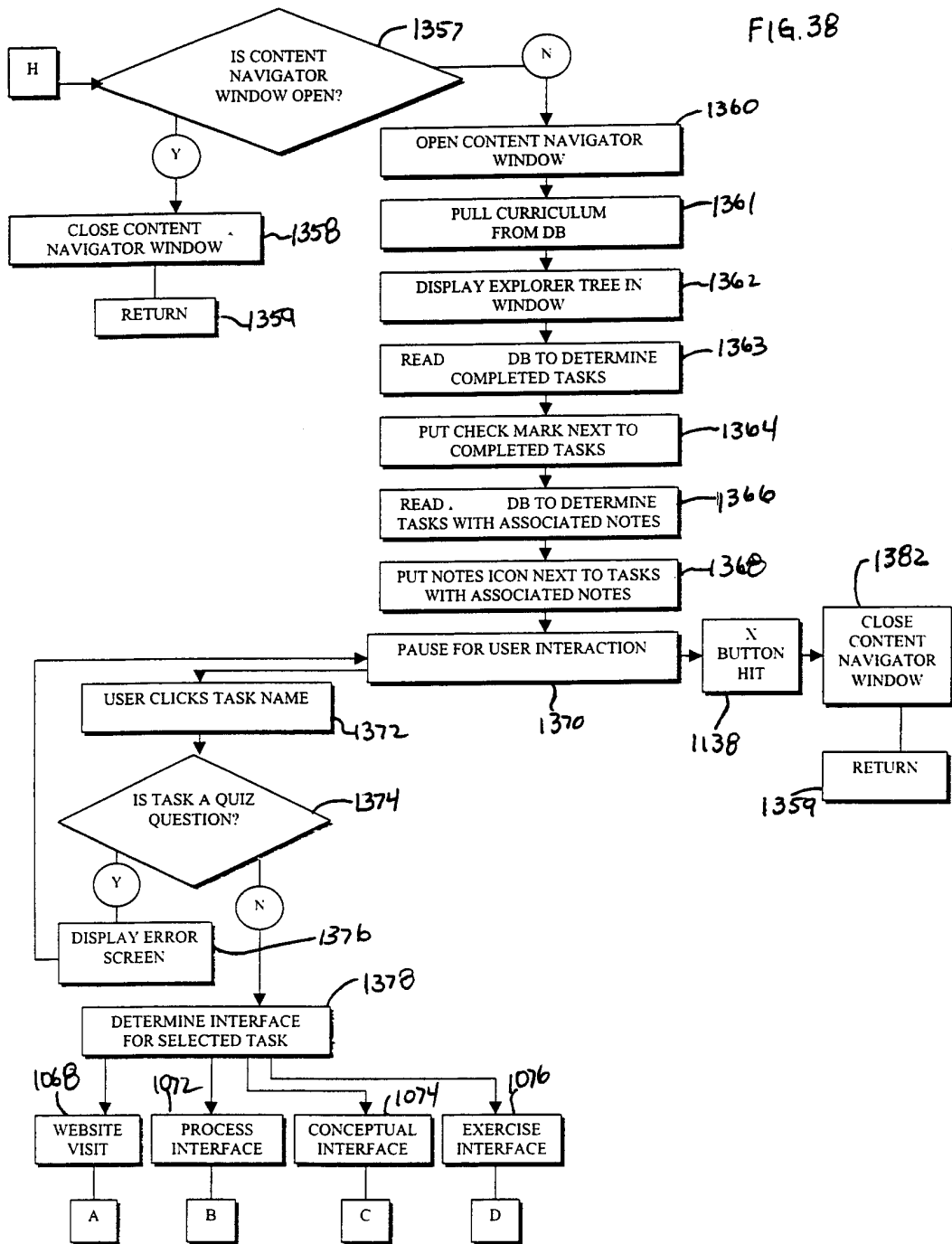
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FIG. 37B



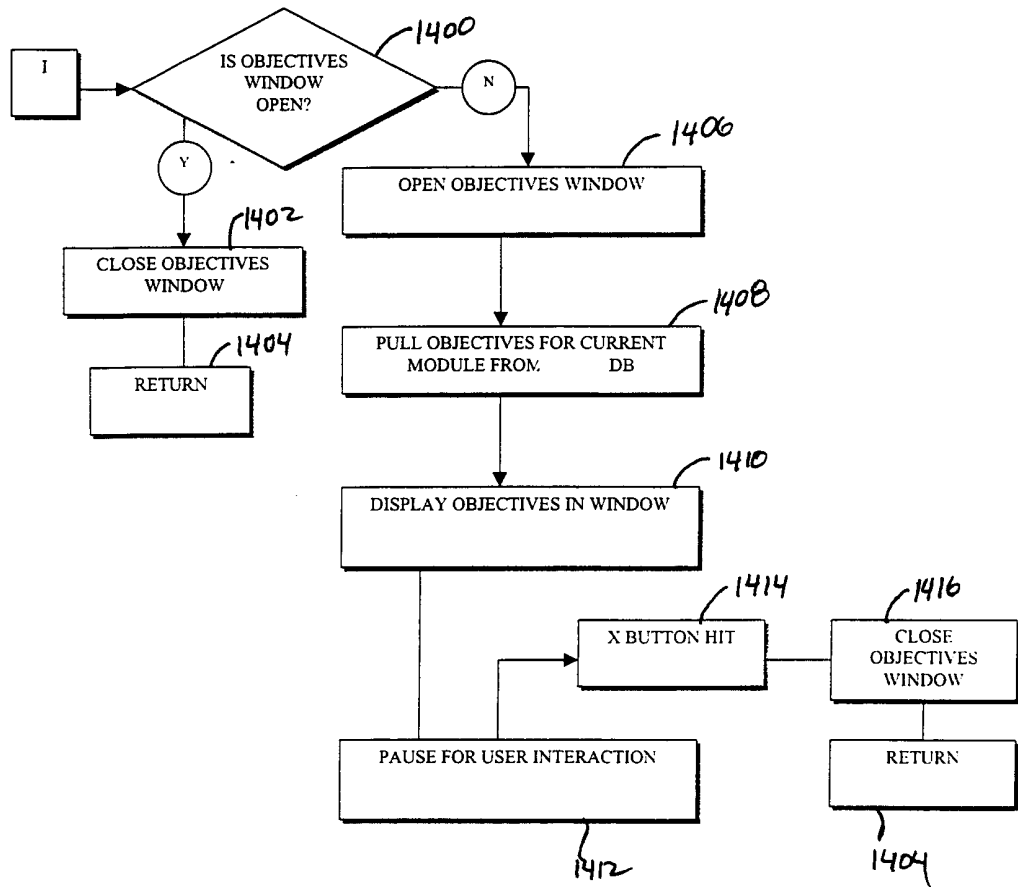
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FIG. 38



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FIG. 39



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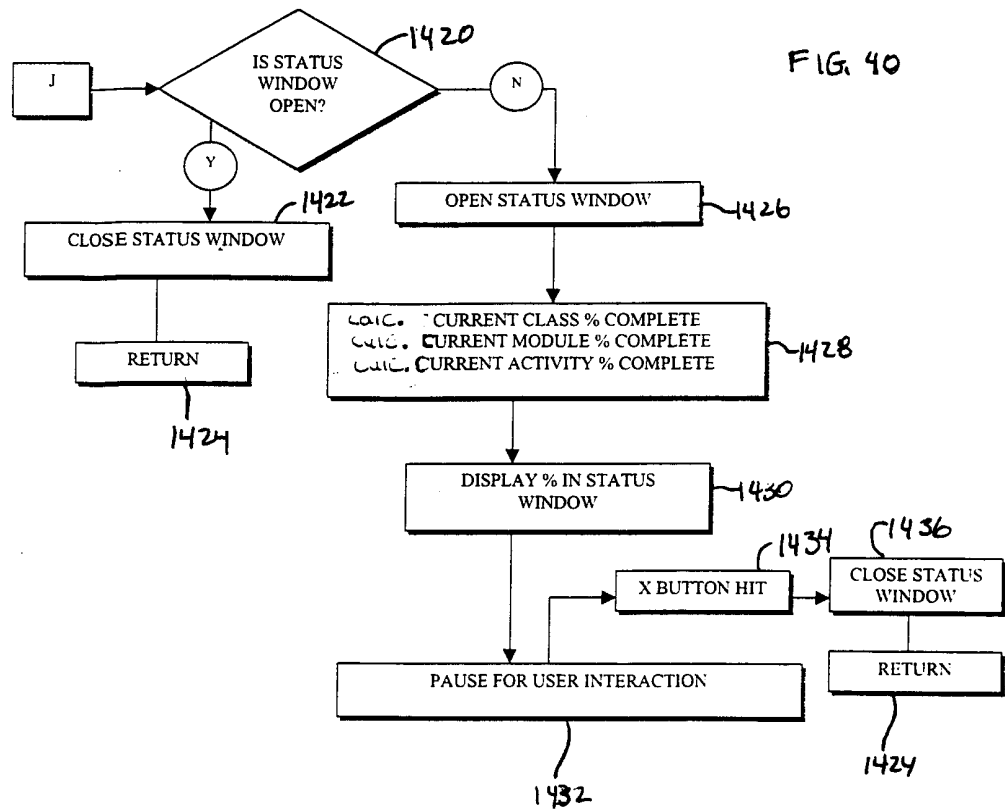
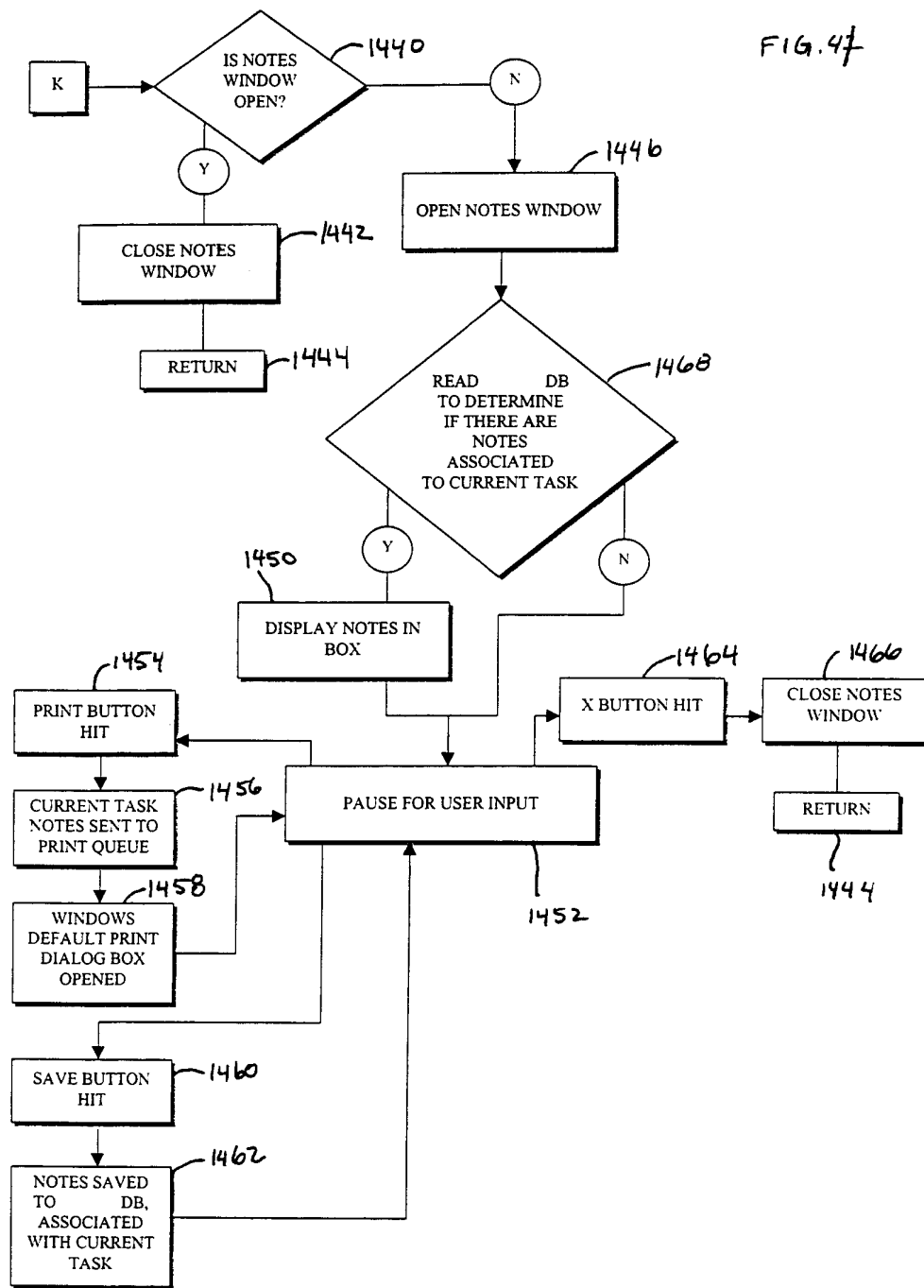


FIG. 47



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FIG. 42

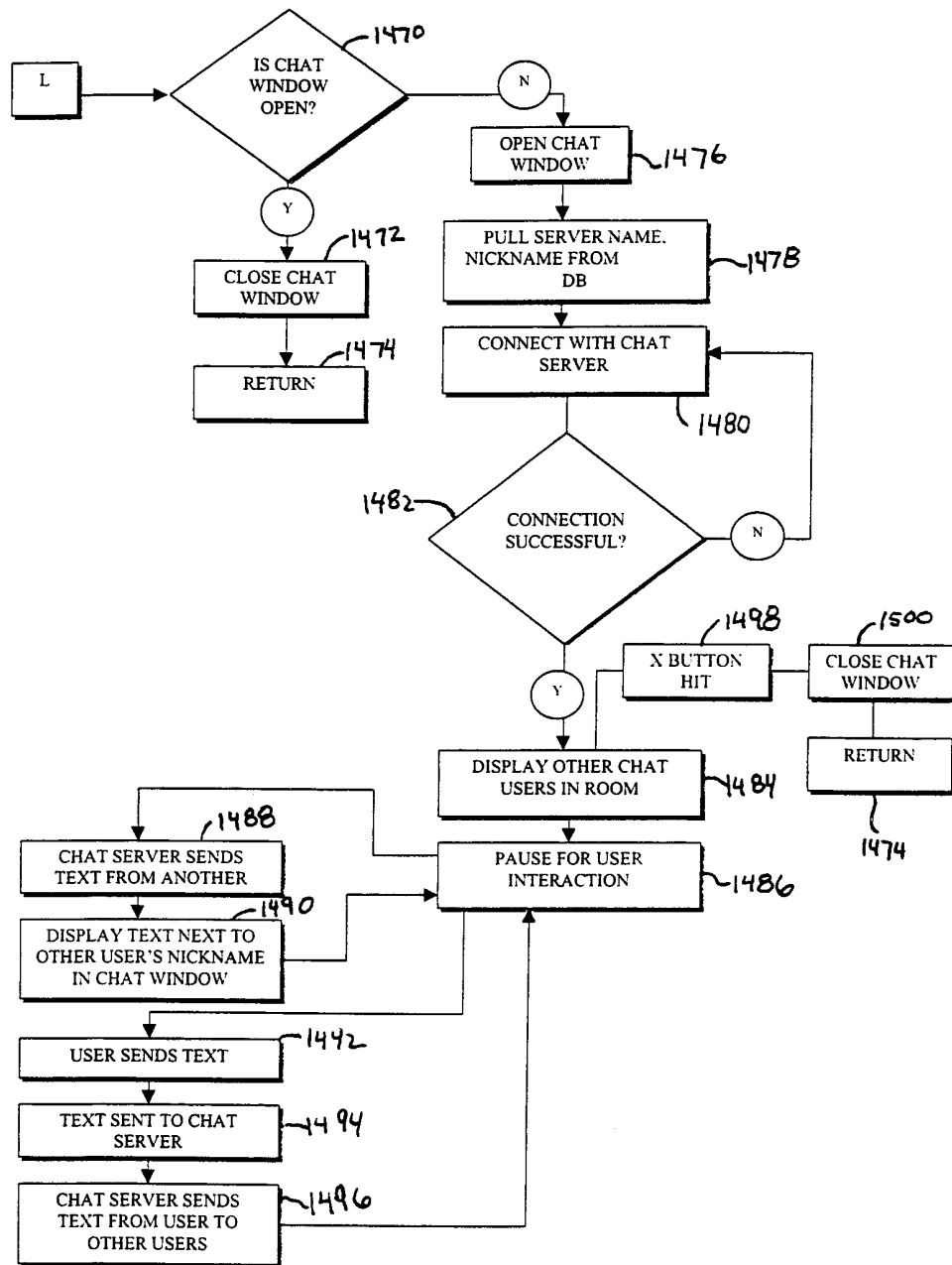
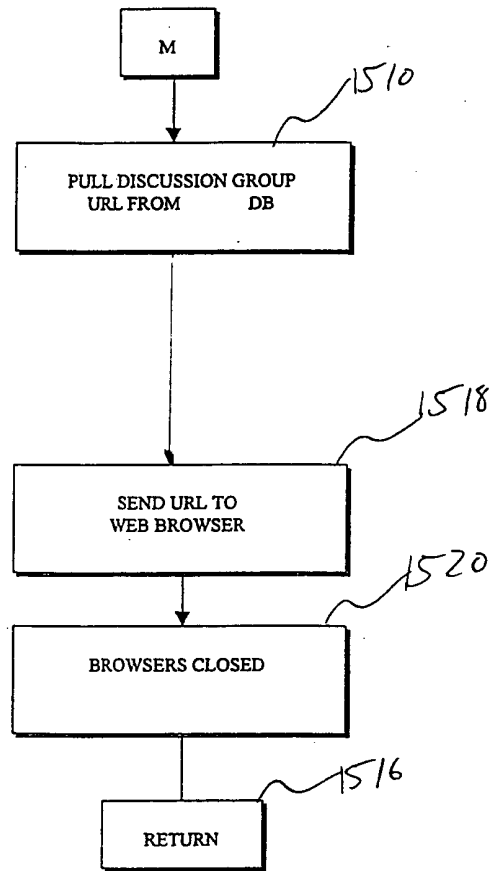
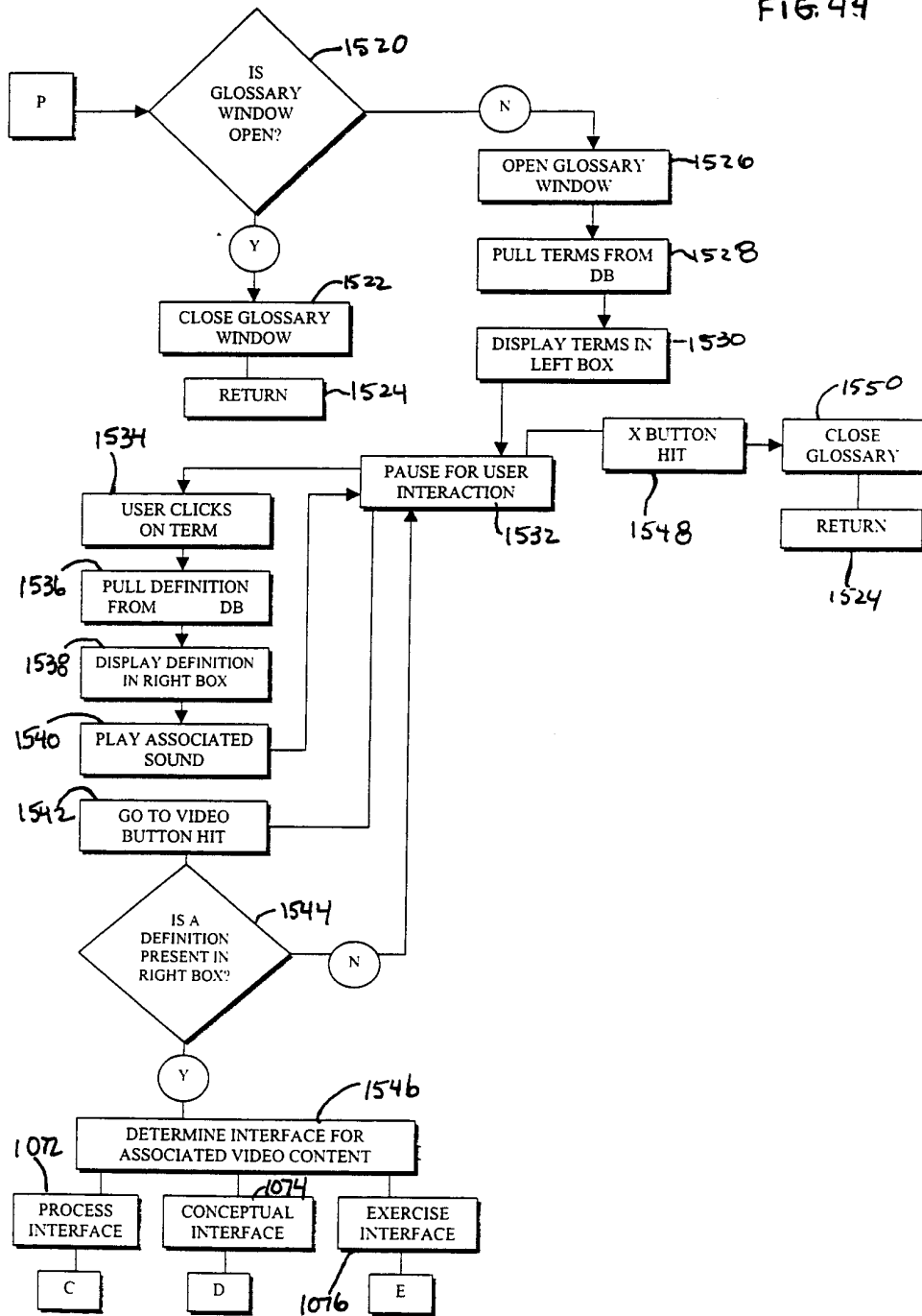


FIG. 43

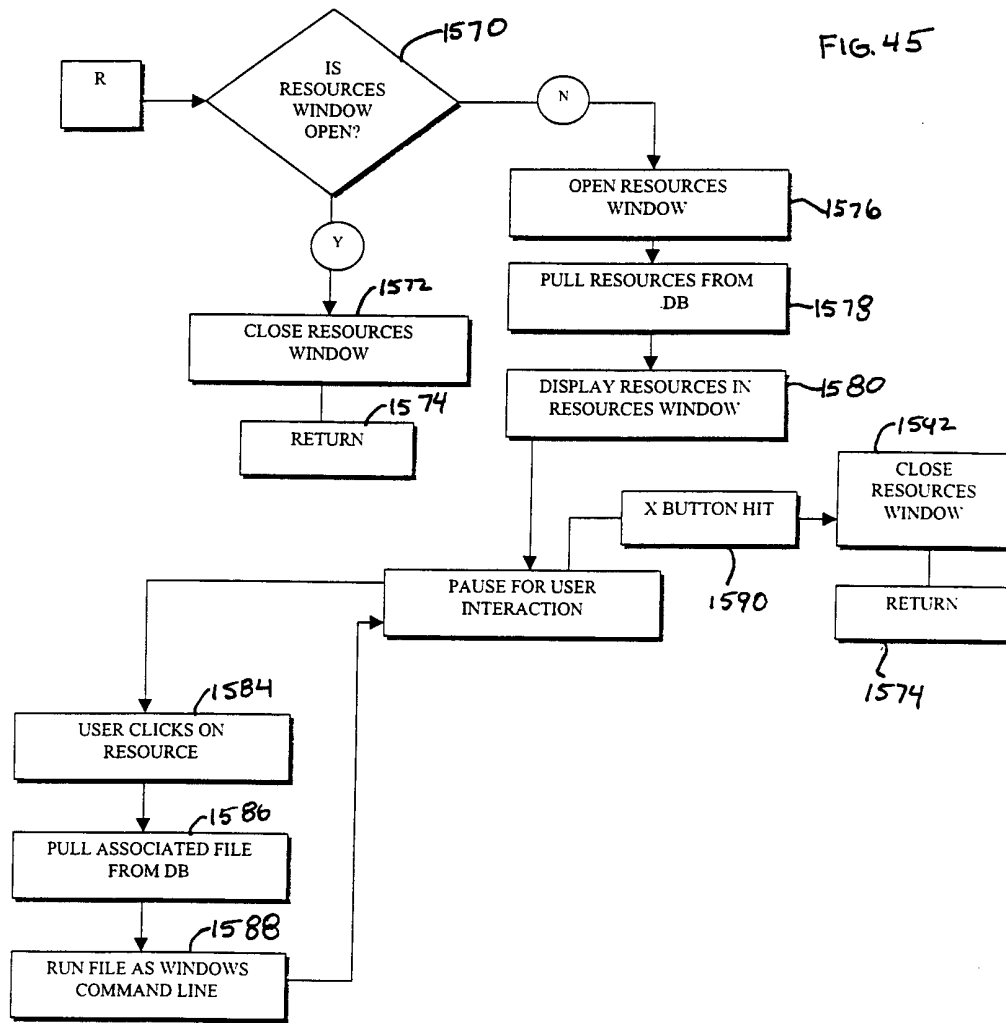


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FIG. 44



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/20000

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) :G09B 3/00
US CL : 434/350
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
U.S. : 434/350, 322, 323, 118, 362

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST
search terms: multimedia, training, system

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, E ----- Y, E	US 6,099,320 A (PAPADOPOULOS) 08 August 2000, see entire document.	1-7, 9-41, 43,45-57, 59-66 ----- 44
X, P	US 5,978,648 A (GEORGE et al.) 02 November 1999, see entire document.	1-66
A	US 5,577,186 A (MANN, II ET AL.) 19 November 1996, see entire document.	
A	US 5,310,349 A (DANIELS et al.) 10 May 1994.	
A, P	US 6,064,856 A (LEE et al) 16 May 2000, see entire document.	

Further documents are listed in the continuation of Box C. See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
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Date of the actual completion of the international search
28 SEPTEMBER 2000

Date of mailing of the international search report
20 OCT 2000

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/20000

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,002,491 A (ABRAHAMSON et al.) 26 March 1991.	
A	US 4,609,358 A (SANGSTER) 02 September 1986.	
A	US 5,601,436 A (SUDMAN et al.) 11 February 1997.	
A	US 5,318,450 A (CARVER) 07 June 1994.	