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(54) **METHOD AND SYSTEM FOR LOCATING A WORKFORCE**

(76) Inventor: **Michael Bruce**, New York, NY (US)

Correspondence Address:
BENJAMIN L. Davis
2B, 55 E. 128th
New York, NY 10035 (US)

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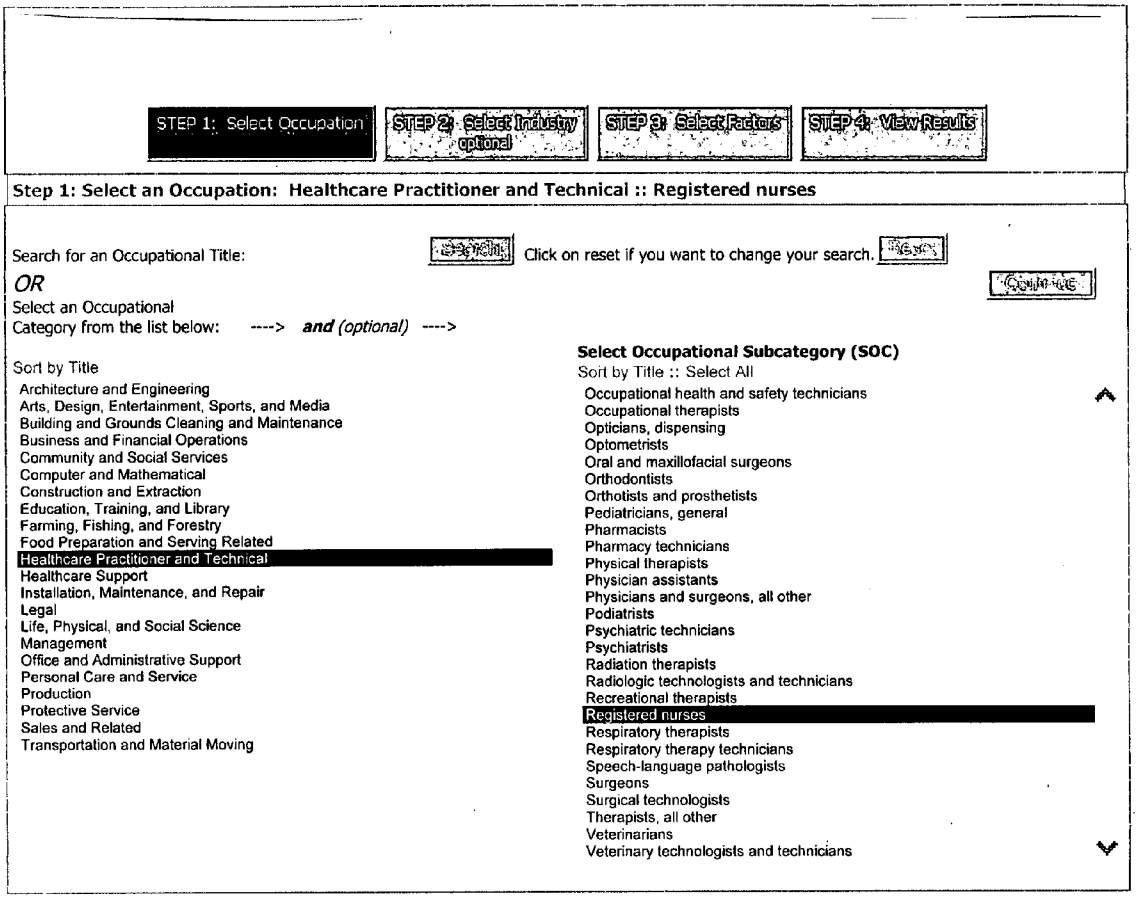
(57) **ABSTRACT**

The present invention generally relates to a computer-implemented method and system that helps a user or any other person to organization that needs to choose or allocate resources between or among geographical areas on the basis of key demographic variables. More specifically, the present invention uses computer automated SQL statements to extract, integrate, and index disparate data associated with at least one database over a Network. Non-limiting examples of disparate data may include statistical data essential to quantifying various industry and occupation variables that is mined from federal and/or private databases and maintained on a private database. Common geographical areas may link the disparate data, which is returned to the user as viewable raw data and/or index values. A user may then compare disparate data essential to quantifying and qualifying industry and occupation variables on an "apples to apples" basis.



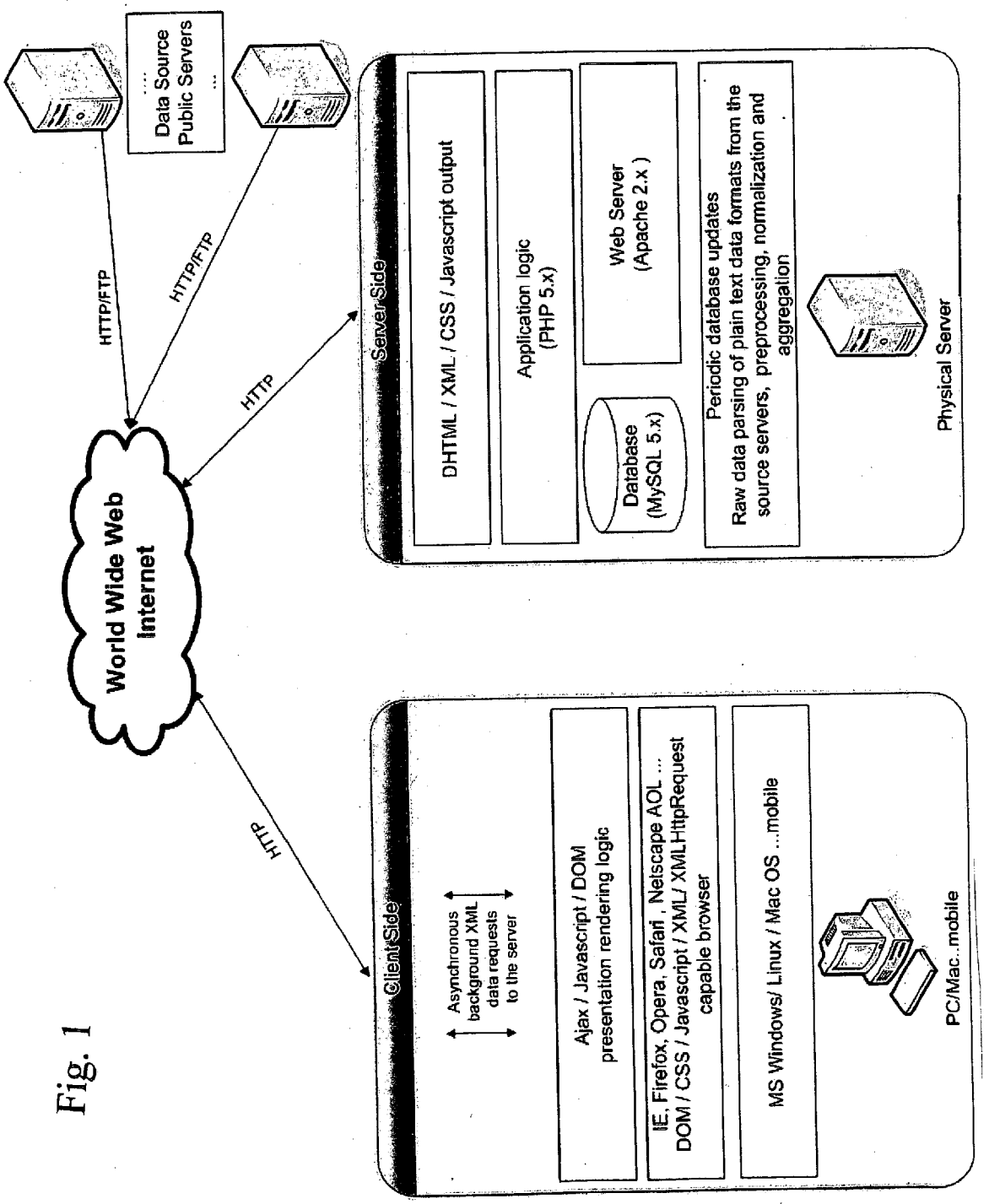

Data Source
Public Servers
HTTP/FTP
HTTP/FTP
HTTP
World Wide Web
Internet
HTTP
Server Side
DHTML / XML / CSS / Javascript output
Application logic
(PHP 5.x)
Web Server
(Apache 2.x)
Database
(MySQL 5.x)
Periodic database updates
Raw data parsing of plain text data formats from the source servers, preprocessing, normalization and aggregation
Physical Server
Client Side
Asynchronous background XML data requests to the server
Ajax / Javascript / DOM
presentation rendering logic
IE, Firefox, Opera, Safari , Netscape AOL ...
DOM / CSS / Javascript / XML/ XMLHttpRequest capable browser
MS Windows/ Linux / Mac OS ...mobile
PC/Mac..mobile

Fig. 1

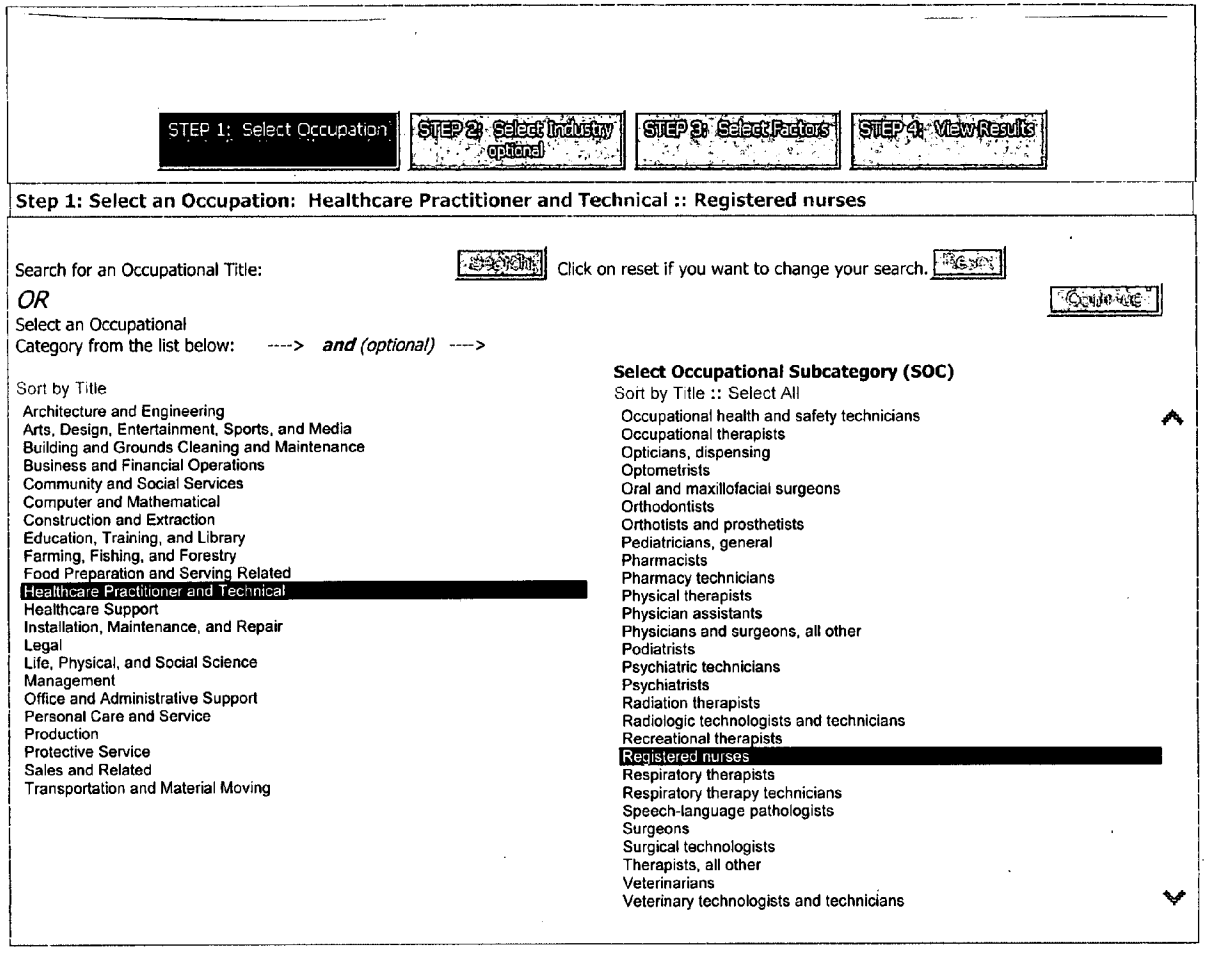

STEP 1: Select Occupation
STEP 2: Select Industry optional
STEP 3: Select Factors
STEP 4: View Results
Step 1: Select an Occupation: Healthcare Practitioner and Technical :: Registered nurses
Search for an Occupational Title:
Click on reset if you want to change your search.
OR
Select an Occupational Category from the list below: ----> and (optional) ---->
Sort by Title
Architecture and Engineering
Arts, Design, Entertainment, Sports, and Media
Building and Grounds Cleaning and Maintenance
Business and Financial Operations
Community and Social Services
Computer and Mathematical
Construction and Extraction
Education, Training, and Library
Farming, Fishing, and Forestry
Food Preparation and Serving Related
Healthcare Practitioner and Technical
Healthcare Support
Installation, Maintenance, and Repair
Legal
Life, Physical, and Social Science
Management
Office and Administrative Support
Personal Care and Service
Production
Protective Service
Sales and Related
Transportation and Material Moving
Select Occupational Subcategory (SOC)
Sort by Title :: Select All
Occupational health and safety technicians
Occupational therapists
Opticians, dispensing
Optometrists
Oral and maxillofacial surgeons
Orthodontists
Orthotists and prosthetists
Pediatricians, general
Pharmacists
Pharmacy technicians
Physical therapists
Physician assistants
Physicians and surgeons, all other
Podiatrists
Psychiatric technicians
Psychiatrists
Radiation therapists
Radiologic technologists and technicians
Recreational therapists
Registered nurses
Respiratory therapists
Respiratory therapy technicians
Speech-language pathologists
Surgeons
Surgical technologists
Therapists, all other
Veterinarians
Veterinary technologists and technicians

Fig. 2

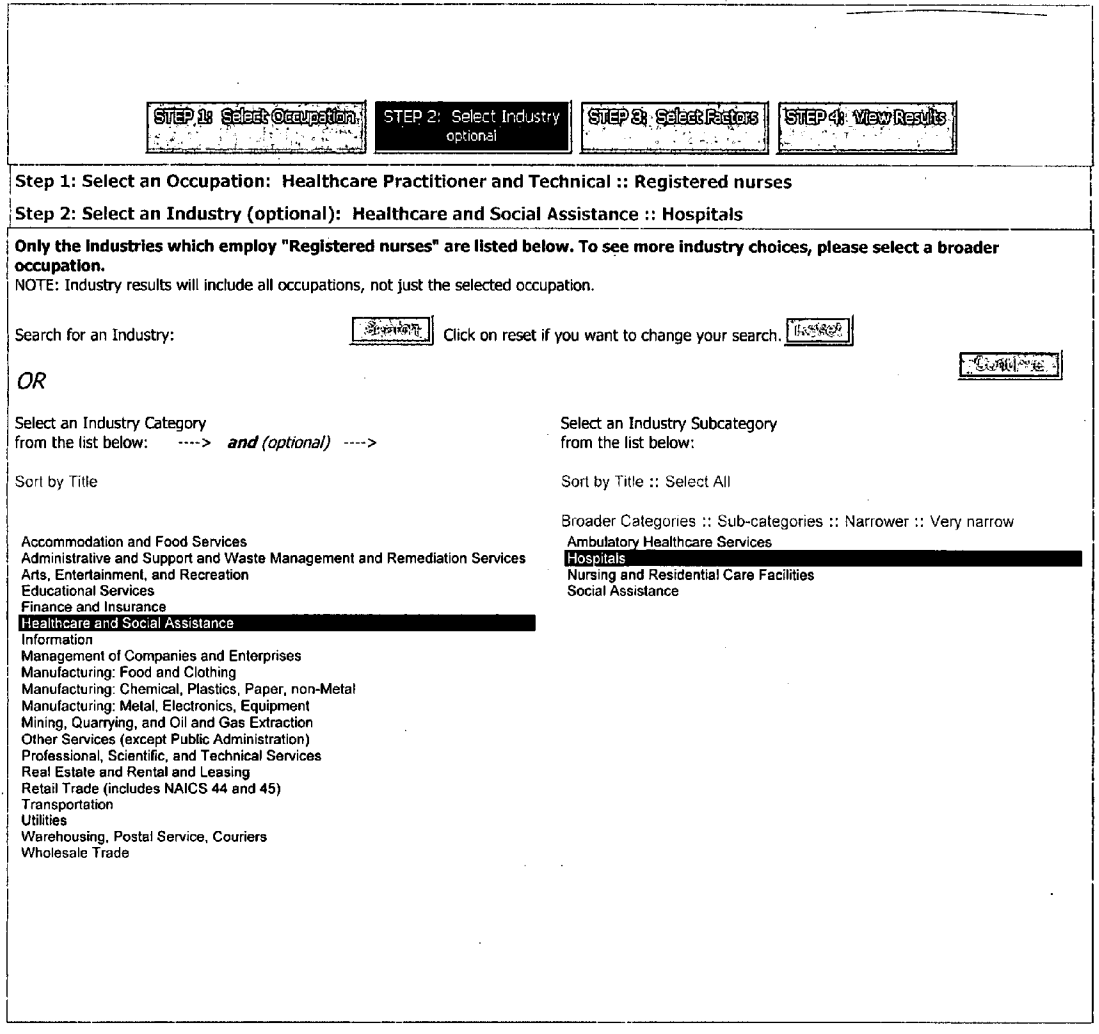

STEP 1: Select Occupation
STEP 2: Select Industry optional
STEP 3: Select Factors
STEP 4: View Results
Step 1: Select an Occupation: Healthcare Practitioner and Technical :: Registered nurses
Step 2: Select an Industry (optional): Healthcare and Social Assistance :: Hospitals
Only the industries which employ "Registered nurses" are listed below. To see more industry choices, please select a broader occupation.
NOTE: Industry results will include all occupations, not just the selected occupation.
Search for an Industry:
Click on reset if you want to change your search.
OR
Select an Industry Category from the list below: ----> and (optional) ---->
Sort by Title
Accommodation and Food Services
Administrative and Support and Waste Management and Remediation Services
Arts, Entertainment, and Recreation
Educational Services
Finance and Insurance
Healthcare and Social Assistance
Information
Management of Companies and Enterprises
Manufacturing: Food and Clothing
Manufacturing: Chemical, Plastics, Paper, non-Metal
Manufacturing: Metal, Electronics, Equipment
Mining, Quarrying, and Oil and Gas Extraction
Other Services (except Public Administration)
Professional, Scientific, and Technical Services
Real Estate and Rental and Leasing
Retail Trade (includes NAICS 44 and 45)
Transportation
Utilities
Warehousing, Postal Service, Couriers
Wholesale Trade
Select an Industry Subcategory from the list below:
Sort by Title :: Select All
Broader Categories :: Sub-categories :: Narrower :: Very narrow
Ambulatory Healthcare Services
Hospitals
Nursing and Residential Care Facilities
Social Assistance

Fig. 3

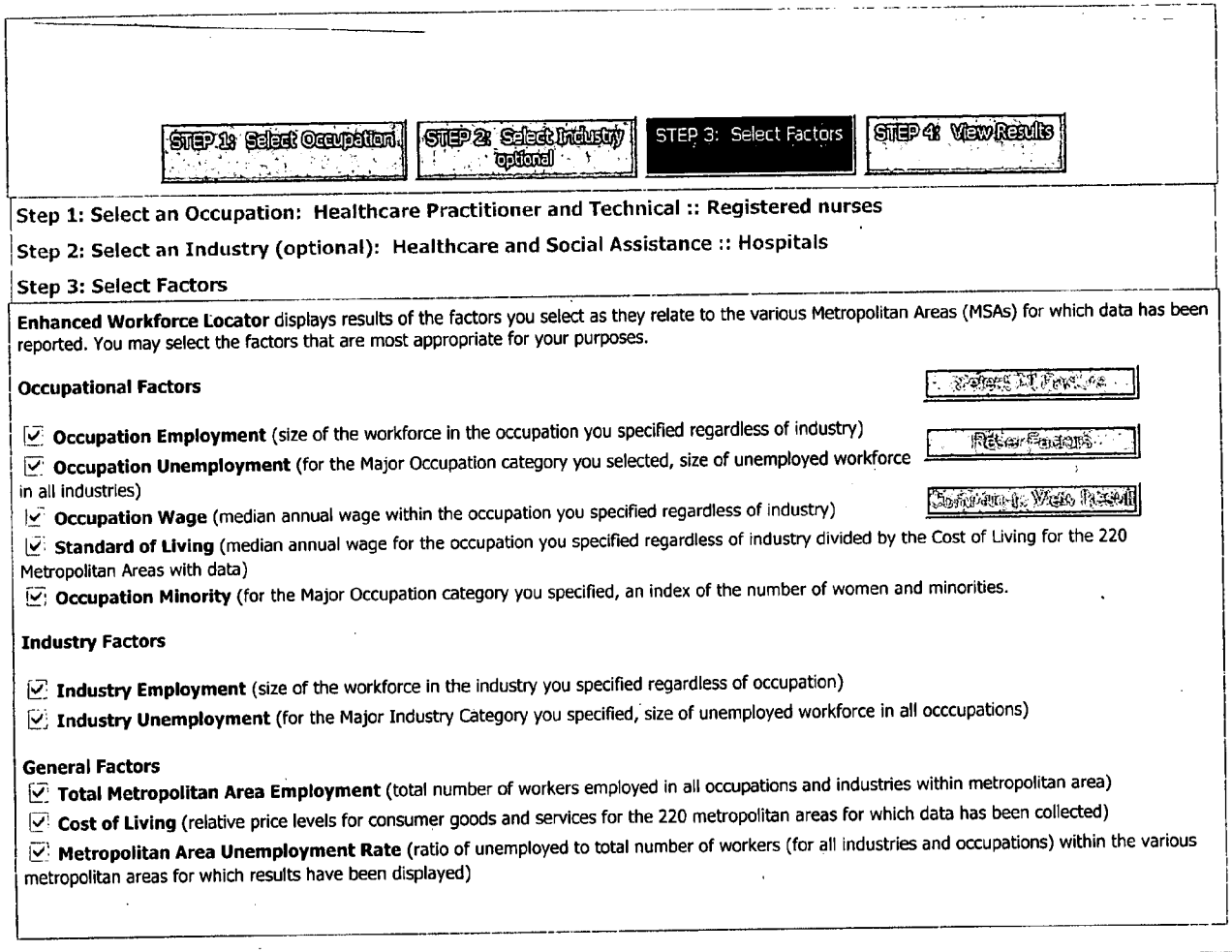

STEP 1: Select Occupation
STEP 2: Select Industry optional
STEP 3: Select Factors
STEP 4: View Results
Step 1: Select an Occupation: Healthcare Practitioner and Technical :: Registered nurses
Step 2: Select an Industry (optional): Healthcare and Social Assistance :: Hospitals
Step 3: Select Factors
Enhanced Workforce Locator displays results of the factors you select as they relate to the various Metropolitan Areas (MSAs) for which data has been reported. You may select the factors that are most appropriate for your purposes.
Occupational Factors
Occupation Employment (size of the workforce in the occupation you specified regardless of industry)
Occupation Unemployment (for the Major Occupation category you selected, size of unemployed workforce in all industries)
Occupation Wage (median annual wage within the occupation you specified regardless of industry)
Standard of Living (median annual wage for the occupation you specified regardless of industry divided by the Cost of Living for the 220 Metropolitan Areas with data)
Occupation Minority (for the Major Occupation category you specified, an index of the number of women and minorities.
Industry Factors
Industry Employment (size of the workforce in the industry you specified regardless of occupation)
Industry Unemployment (for the Major Industry Category you specified, size of unemployed workforce in all occcupations)
General Factors
Total Metropolitan Area Employment (total number of workers employed in all occupations and industries within metropolitan area)
Cost of Living (relative price levels for consumer goods and services for the 220 metropolitan areas for which data has been collected)
Metropolitan Area Unemployment Rate (ratio of unemployed to total number of workers (for all industries and occupations) within the various metropolitan areas for which results have been displayed)

Fig. 4

STEP 1: Select Occupation | STEP 2: Select Industry optional | STEP 3: Select Factors | STEP 4: View Results

Step 1: Select an Occupation: Healthcare Practitioner and Technical :: Registered nurses

Step 2: Select an Industry (optional): Healthcare and Social Assistance :: Hospitals

Step 3: Select Factors

Step 4: Results

Select how you would like to display results, then click "Change Display":

- (◉) Display Top 20 Results
- ( ) Display All Results

- ( ) View Occupation Data Only
- ( ) View Industry Data Only
- (◉) View Both Occupation and Industry Data

▼▲ Click arrows to change column sort order

Metropolitan Area (MSA) Name	Occupation Employment (in all industries) (# of workers employed) ▼▲	Occupation Unemployment Index (in all industries) (1.0 = average) ▼▲	Occupation Minority Index (# compared to average # in occupation) (1.0 = average) ▼▲	Industry Employment (for all occupations) (# of workers employed) (click + below for county breakdown) ▼▲	Industry Unemployment Index (for all occupations in industry) (1.0 = average) ▼▲	Total Metropolitan Area Employment (total # of workers employed) ▼▲	Metropolitan Area Unemployment Rate (for all industries & occupations) ▼▲	Occupation Wage (in all industries) (median $/year) ▼▲	Cost of Living Index (relative price levels for consumer good and services) (100.0 = average) ▼▲	Standard of Living (Wage / Cost of living) ▼▲
New York-Northern New Jersey-Long Island, NY-NJ-PA	162,070	12.4 index	22.6 index	326,321	19.9 index	8,340,640	4.40	$76,390	168.70	453
Los Angeles-Long Beach-Santa Ana, CA	80,480	3.9 index	13.1 index	140,181	11.3 index	5,682,670	5.40	$75,740	152.00	498
Chicago-Naperville-Joilet, IL-IN-WI	78,060	2.0 index	9.5 index	172,314	8.9 index	4,477,610	5.30	$64,490	106.50	606
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	60,830	1.3 index	7.4 index	127,758+	4.4 index	2,733,960	4.60	$66,340	114.00	582
Boston-Cambridge-Quincy, MA-NH	59,660	1.1 index	6.8 index	124,683+	3.8 index	2,468,720	3.60	$76,860	134.00	574

Fig. 5

METHOD AND SYSTEM FOR LOCATING A WORKFORCE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present invention claims priority from provisional patent application No. 61/001,826 filed on Nov. 5, 2007.

FIELD OF THE INVENTION

[0002] The present invention generally relates to a computer-implemented method and system that helps an employer to access and analyze employee-demographics which are critical to making workforce decisions between and amongst geographic areas. More specifically, the present invention uses computer automated SQL statements to extract, integrate, and index disparate data associated with at least one database over a Network. Non-limiting examples of disparate data may include statistical data essential to quantifying various industry and occupation variables that is mined from federal and/or commercial databases and maintained on a private database. Common geographical areas may link the disparate data, which is returned to the user as viewable raw data and/or index values. A user may then compare disparate data essential to quantifying and qualifying industry and occupation variables on an "apples to apples" basis.

BACKGROUND OF THE INVENTION

[0003] Business owners examine many variables when assessing the advantages and disadvantages associated with finding qualified people to fill its workforce. Whether a business is relocating, building in a new area, expanding, or diversifying its workforce, poor analysis of industry and occupational variables frustrates a business's ability to make informed decisions. The cost and risk of making the wrong decision as to which geographic areas to explore, relative to workforce decisions, are significant. Once one or more target geographic areas are selected for investment or further research, thousands, even hundreds of thousands of dollars, and weeks, even months or years, are at risk if even one critical variable does not meet its threshold value. The industry and occupational variables may include without limitation: the size of a metropolitan area, the number and types of minorities within an occupation, occupation employment, occupation unemployment, occupation wage, standard of living, industry unemployment, industry employment, total employment for an area, total unemployment for an area, job creation, new hires in occupations and industry, separations, turnover rate, average wages, cost of living, average wage inverse, unemployment, unemployment average, industry workforce, percentage of minorities, gender make up of an area, and the like. All variables are analyzed with respect to an employer's prioritized needs and interest in having a business in a certain geographic area.

[0004] Currently, the data for locating workers is collected by various agencies, non-limiting examples being the U.S. Census Bureau, the U.S. Bureau of Labor and Statistics, Bureau of Economic Analysis, America's Labor Market Information System, Council for Community and Economic Research, other private agencies, and the like. However, their databases are decentralized and somewhat chaotic. Each agency's system is designed for a different purpose, and, as a result, they often measure the same variable differently. Therefore, they arrive at results that may confuse non-economists. For example, the U.S. Census Bureau contains statistical data as related to industry while the Bureau of Labor and Statistics contains statistical data relating to occupations within industries.

[0005] Analyzers study and develop findings and conclusions for each database individually, but it is difficult to compare the data from each database on an "apples to apples" basis. None of these methods use a normalization variable or truly integrate the data from the databases into a coherent relationship to quickly analyze an employer's needs when filing its workforce.

[0006] Other methods include an in-depth and costly study of variables within a selected set of Metropolitan Statistical Areas, or MSAs. The drawbacks to these methods include selecting a bad area to either relocate or start your business, where the area is unattractive because of basic demographic, geographic, or economic variables that were difficult to identify prior to doing a more in depth study. It is important for businesses to eliminate all of the bad choices before paying a quarter million dollars to do a feasibility study on entering a specific geographic region to do business.

[0007] Therefore, there is a need for a computer-implemented method and system that allows an employer to access and analyze employee demographics which are critical to making workforce decisions between and amongst geographic areas. The present invention meets this need via a computer-implemented method and system that extracts, integrates, and/or indexes data from at least one database having disparate data over a Network. The data relates to statistical data essential to quantifying occupational and industry variables. The data may be linked by common geographical areas, indexed, and presented to a user to assess the same.

SUMMARY OF THE INVENTION

[0008] Embodiments of the present invention address these problems via a computer-implemented method for extracting, integrating, and creating index and/or percentile values of disparate data from one or more tables in a database the method comprises: a.) receiving user selections relating to industries and occupations that form a structured language query; b.) the structured language query of step a.) being presented to a database having tables with disparate statistical data relating to industries and occupations; c.) having a structured language query extract the disparate statistical data of step b.) from the database corresponding to the user's selections of step a.); d.) having a structured language query within the database convert some, or all, of the extracted statistical data of step c.) into index or percentile values; and e.) having a structured language query return the statistical data and/or the converted statistical data of step d.) to the user as integrated data, indexed values, percentile values, and/or any combinations thereof.

[0009] It is an aspect of the present invention, wherein the user comprises a business, the media, or any other person or organization that needs to choose or allocate resources between or among geographical areas.

[0010] It is an aspect of the present invention, wherein user selections are accessed over a Network at a computer server by web based applications, wherein user selections indicate at least one cell within at least one column and/or row of at least

one database table having statistical data relating to industries and occupations within the database.

[0011] It is an aspect of the present invention, wherein user selections are accessed from a permanent or temporary computer file located on the user's computer, wherein user selections indicate at least one cell within at least one column and/or row of at least one database table having statistical data relating to industries and occupations within the database.

[0012] It is another aspect of the present invention, wherein the user selections comprises occupational categories and/or occupational subcategories, various industry categories and/or industry subcategories, query variables for the same, and/or any combinations thereof.

[0013] Yet another aspect of the present invention includes having query variables comprising the size of a metropolitan area, the number and types of minorities within an occupation, occupation employment within a geographic area, occupation unemployment within a geographic area, occupation wage within a geographic area, standard of living within a geographic area, industry unemployment within a geographic area, industry employment within a geographic area, total occupation employment within a geographic area, total occupation unemployment within a geographic area, total industry employment within a geographic area, total industry unemployment within a geographic area, job creation within a geographic area, new hires within a geographic area, separations within a geographic area, turnover rate within a geographic area, average wages within a geographic area, cost of living within a geographic area, average wage inverse within a geographic area, industry unemployment within a geographic area, unemployment average within a geographic area, industry workforce within a geographic area, percentage of minorities within a geographic area, gender make up within a geographic area, the percent of industry employment in the given occupation, the percent of establishments reporting the given occupation in the given industry, the mean hourly industry and/or occupation wage, the mean annual industry and/or occupation wage, the percent relative standard error for the mean wage, employment percent relative error, and/or any combinations thereof.

[0014] Still another aspect of the present invention includes having all statistical data associated with each query variable being returned, displayed, or stored on the user's computer as raw data, an index value, or a percentile value.

[0015] It is an aspect of the present invention, wherein the geographic area is a Metropolitan Statistical Area as defined by the United States Office of Management and Budget.

[0016] It is an aspect of the present invention, wherein the U.S. Census Bureau and the U.S. Bureau of Labor and Statistics define the industry and occupation categories and subcategories thereof, or are harmonized to correspond to those categories or subcategories.

[0017] It is an aspect of the present invention, wherein said database is a private database housed on a computer server and accepts query languages comprising MS SQL/ASP.NET, MS Access/Visual Basic, MySQL/Coldfusion (CFML), HSQL/JSP (J2EE), PostgreSQL/Perl, MS SQL/Foxpro, Oracle/ASP.NET.

[0018] It is an aspect of the present invention, wherein the structured language query is in the form of an SQL query statement.

[0019] It is an aspect of the present invention, wherein the disparate data comprises statistical data essential to quantifying and/or qualifying various industry and occupation query variables as acquired by the U.S. Bureau of Labor Statistics and the U.S. Census Bureau and the Council for Community and Economic Research.

[0020] It is an aspect of the present invention, wherein the disparate data is initially mined over a Network from tables located within databases maintained by the U.S. Bureau of Labor Statistics, the U.S. Census Bureau, or the Council for Community and Economic Research and extracted into tables on a private database.

[0021] It is an aspect of the present invention, wherein the user subjectively ranks the importance of the integrated data, indexed data, or percentile data returned to the user according to their business needs.

[0022] An aspect of the present invention includes a system for extracting, integrating, and indexing disparate data from one or more tables in a database, the system comprising: a user's computer having web based applications or permanent files located on the user's computer capable of selecting options related to occupations, industries, and query variables for the same; and a server computer or a file within the user's computer capable of reading options selected from the user's computer over a Network or within the user's computer and generating a structured language query to parse a relational database having statistical data relating to occupation, industry, and query variables of the same.

[0023] It is an aspect of the present invention, wherein the server computer presents a series of graphical menus relating to occupation and industry variables to the user's computer over a Network via a graphical user interface.

[0024] It is an aspect of the present invention, wherein the server computer has at least one send/receive module capable of generating and/or reading a structured language query concerning statistical data associated with industries and occupations and presenting said query to the relational database.

[0025] It is an aspect of the present invention, wherein the relational database has at least one send/receive module capable of generating and/or reading a structured language query concerning statistical data associated with industries and occupations as presented by the server computer.

[0026] It is an aspect of the present invention, wherein the relational database has a send/receive module for searching tables having statistical data associated with industries and occupations within the database and returning that data to the send/receive module associated with communicating to the send/receive module of the computer server.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] The figures discussed below are non-limiting examples of the present invention and are not intended to limit the scope of the present invention.

[0028] FIG. **1** Depicts a general flow chart for the present invention.

[0029] FIG. **2** Depicts a web menu where the user is prompted to form a request by selecting from a list of major occupational categories and subcategories as defined by the SOC.

[0030] FIG. **3** Depicts a web menu where the user is optionally presented with a selection of major industry categories and subcategories as defined by the NAICS.

[0031] FIG. **4**. Depicts a web menu where the user is presented with a selection of query variables associated with statistical data defining industries and occupations.

[0032] FIG. **5** Depicts a web menu where the data is returned to the user as a virtual table.

DETAILED DESCRIPTION OF THE INVENTION

Definitions

[0033] To detail the present invention, the following non-limiting terms are used:

[0034] The term "Table" generally refers to an arrangement of statistical data, words, numbers, or combinations of them, as in parallel columns and/or rows, to establish a set of relations in a definite, compact, and comprehensive form, wherein the data relates to statistical data on industries and occupations as complied by the U.S. Census Bureau, the Bureau of Labor and Statistics, the Bureau of Economic Analysis, America's Labor Market Information System, the Council for Community and Economic Research, other commercial databases, and the like.

[0035] The term "View" generally refers to a rapidly created virtual table presented to the user as raw data and/or index values extracted from a database having statistical data on industry and occupations. The View is composed of a result set from the SQL-query that retrieves the disparate data from the at least one database over a Network. Changing the data in the database alters the data shown in the View. The View can join and simplify multiple tables from the database into a single virtual table presented to the user.

[0036] The term "Metropolitan Statistical Area" or "MSA" generally refers to one or more adjacent counties or county equivalents that have at least one urban cluster of at least 50,000 people plus adjacent territories having a high degree of social and economic integration. The U.S. Office of Management and Budget generates the MSA codes and designations.

[0037] The term "NAICS" generally refers to the North American Industry Classification System. Federal statistical agencies developed the NAICS to classify business establishments through the collection, analysis, and publication of statistical data related to business economy. The NAICS numbering system is a six-digit code as used by the United States of America, Canada, and Mexico. The first five digits are generally (although not always strictly) the same in all three countries. The last digit designates national industries. The first two digits designate the largest business sector, the third digit designates the sub-sector, the fourth digit designates the industry group, and the fifth digit designates particular industries.

[0038] Example business sectors may include without limitation: Forestry, Fishing, Hunting, and Agriculture Support, Mining, Utilities, Construction, Manufacturing, Wholesale Trade, Retail Trade, Transportation and Warehousing, Information, Finance and Insurance, Real Estate and Rental and Leasing, Professional, Scientific, and Technical Services, Management of Companies and Enterprises, Administrative and Support and Waste Management and Remediation Services, Educational Services, Health Care and Social Assistance, Arts, Entertainment, and Recreation, Accommodation and Food Services, Other Services (except Public Administration), and Unclassified.

[0039] The term "SOC" generally refers to Standard Occupational Classification. The SOC system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of over 820 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 23 major groups, 96 minor groups, and 449 broad occupations. Each broad occupation includes detailed occupation(s) requiring similar job duties, skills, education, or experience.

[0040] The term "Menu," "Web Menu," "Graphical Screen," or "Screen" generally refers to a list of commands presented to a user by a computer or communications system. With a Menu, the user does not have to have a detailed knowledge or recall of syntax but is presented with graphical shortcuts and frequently-used commands to navigate a web page. A computer using a graphical user interface presents Menus with a combination of text and symbols to represent choices. By clicking on one of the symbols, the user selects instructions representing symbols.

[0041] The term "Disparate Data" or "Data" generally refers to statistical data relating to industry and occupational variables collected by various government and private agencies covering all MSAs. The Disparate Data is located in tables housed on databases, where the database is maintained over a Network.

[0042] The term "Database" generally refers to a private database accessible over a Network. The private database is relational and stores a collection of data on individual tables having at least one common relation. The database is operated and controlled by a private firm. A database administrator may maintain the database. Their duties are to implement and maintain the database system, establish policies and procedures pertaining to management, security, maintenance, and use of the database management system.

[0043] The term "Network" generally refers to an electronically connected group of computers including, but not limited to, the following: the World Wide Web/Internet, Intranet, Local Area Networks (LAN), Wide Area Networks (WAN), or Wireless Wide Area Networks (WWAN).

[0044] The term "Module" generally refers to sub-routines, procedures, definitional statements and macros. Each Module may be separately compiled and linked into a single executable program. The Module processes may be arbitrarily redistributed to one of the other modules, combined together in a single module, or made available in, for example, a shareable dynamic link library.

THE DATABASE AND GENERAL EMBODIMENT OF THE INVENTION

[0045] From this point forward, the following words will describe a computer-implemented method and system that allows an employer to access and analyze employee demographics which are critical to making workforce decisions between and amongst geographic areas. The present invention presents a user with a computer-implemented method and system that creates automated SQL statements that extract, integrate, and index disparate data relating to industry and occupation statistics from at least one database, where the data may be linked by common MSAs. However, the following words are not a limitation on the scope of the present invention but are written to detail certain embodiments thereof.

[0046] It is within the scope of the present invention wherein the computer-implemented method and system is either a Network-based application, or the data and/or the program can be stored on a user's computer. All disparate data may be within a private database located on a remote computer server and accessible over a Network or located within

a permanent or temporary file on the user's computer. From FIG. **1**, disparate statistical data relating to industry and occupation is mined over a Network from public servers maintained by the U.S. Census Bureau and the U.S. Bureau of Labor and Statistic, as well as other commercial agencies. The data is then, stored in tables located within a private database located on a private computer server. The data mining process is performed via HTTP/FTP requests and is well known within the arts.

[0047] The user's computer connects to a server over a Network and is allowed to see graphical information from the server's computer via web pages through PHP and JavaScript platforms, where asynchronous background XML data requests are sent to the computer server. The user's web based application and the computer server uses a graphical user interface (GUI) to present a user with options for searching the database. The user may view the web pages using Internet browsers such as Internet Explorer, Firefox, Netscape Navigator, Opera, Safari, and the like.

[0048] The options relate to various occupational categories and/or occupational subcategories, various industry categories and/or industry subcategories, and query variables for the same. The U.S. Census Bureau and the U.S. Bureau of Labor and Statistics define the industry and occupation categories and subcategories of the present invention respectively. Each user selection specifies search criteria to embed within a structure language query.

[0049] The present invention associates user selections with a file on the user's computer, or within the web-based software located at the computer server, to generate an automated SQL/PHP statement. The objective of the automated SQL statement is to present a request to a database to extract, and/or index disparate data related to industry and occupation statistics. The complexity involved is hidden from the user who, in fact, requires no knowledge of SQL or PHP in order to use the invention. However, it is within the scope of the present invention where SQL, combined with PHP, is just one of many computer languages that can be used with the present invention. Other computer languages may include, without limitation,: MS SQL/ASP.NET, MS Access/Visual Basic, MySQL/Coldfusion (CFML), HSQL/JSP (J2EE), PostgreSQL/Perl, MS SQL/Foxpro, Oracle/ASP.NET, as well as any combination of the above DBMS/language pairs, and the like.

[0050] Once the user's selections are made, initial SQL query statements are generated by at least one send/receive module at the computer server and presented to at least one send/receive module at the private database. Each module is capable of reading and understanding the structured language query in use, e.g. SQL. Described embodiments of the invention disclose modules stored on both the computer server and at the private database. However, one of ordinary skill in the art recognizes that all relevant modules could be stored and executed at the user's computer, thus eliminating the need for a server computer.

[0051] The query requests the extraction, integration, and indexing of disparate data relating to industry and occupation statistics. All raw and indexed data are returned to the computer server by at least one send/receive module located at the database, and ultimately, to the user's web browser, as a virtual table. PHP scripting language is used to manipulate information presented by the computer server to the user's web browser. As an alternative, raw and indexed data may be returned and stored to the user's computer in either an XML or CSV format.

[0052] The database of the present invention includes a relational database that stores a collection of data on individual tables having at least one column in common. The private database is associated with at least one module that receives structured language queries from the computer server, extracts raw data from tables with the database, indexes data from tables within the database, and returns such data to the computer server. The database is private and maintained by a database administrator and/or one or more applications developer. The private database is accessible over a Network and is kept by a private firm, non-limiting examples being MySQL, Interbase/Firebird, PSQL, IBM, Microsoft/Sybase, Oracle, and the like.

[0053] The disparate data includes statistical data mined over a Network from databases owned by the BLS, the Census Bureau, and the Council for Community and Economic Research. The disparate data is essential to quantifying various industry and occupation variables and is gathered by those agencies, where non-limiting examples may include: the size of a metropolitan area, the number and types of minorities within an occupation, occupation employment within a geographic area, occupation unemployment within a geographic area, occupation wage within a geographic area, standard of living within a geographic area, industry unemployment within a geographic area, industry employment within a geographic area, total occupation employment within a geographic area, total occupation unemployment within a geographic area, total industry employment within a geographic area, total industry unemployment within a geographic area, job creation within a geographic area, new hires within a geographic area, separations within a geographic area, turnover rate within a geographic area, average wages within a geographic area, cost of living within a geographic area, average wage inverse within a geographic area, industry unemployment within a geographic area, unemployment average within a geographic area, industry workforce within a geographic area, percentage of minorities within a geographic area, gender make up within a geographic area, the percent of industry employment in the given occupation, the percent of establishments reporting the given occupation in the given industry, the mean hourly industry and/or occupation wage, the mean annual industry and/or occupation wage, the percent relative standard error for the mean wage, employment percent relative error, and/or any combinations thereof. The disparate data is extracted from agency databases and inserted into tables maintained on the private database. All statistical data may be mined from databases owned and maintained by the BLS, the Census Bureau, and/or the Council for Community and Economic Research over a Network via computers having software programs known within the arts of data extraction from relational databases over a Network.

[0054] Data from each agency database is extracted monthly, quarterly or annually, as available, and stored in separate tables within the private database. Each record contains the MSA code, occupation code or industry code as appropriate, and the raw data. There are also lookup tables for translating codes to text for MSA code, SOC, and NAICS. There is a table that translates Census occupation codes to SOC and a table that translates Census industry codes to

NAICS. For constraining data, there is a table of industry codes that occur for each occupation.

[0055] Once the disparate data is mined, the data may be joined into one or more tables within the private database. Joining the disparate data within a table is possible because the disparate data share at least one common field stored in at least one column of the agency tables. The disparate data may be joined via well-known merge routines in the database arts.

[0056] Disparate data returned to the user represents statistical data relating to occupation and industry variables linked by common MSAs. The Metropolitan Statistical Areas can differ from data set to data set and must be harmonized to allow an "apples to apples" comparison of variables by geographic area. The extracted data is used to form index values that reflect the likelyhood of finding a higher or lower number for an industry or occupational variable when taken against the same variable covering all MSAs.

[0057] In some instances, geographic codes are changed to match the MSA coding scheme used by the BLS and the Census Bureau. For example, the New England states do not use the MSA coding scheme when reporting industry and occupation statistics to the Census Bureau and BLS respectively. Their coding scheme is changed to create a common MSA field amongst all areas reporting statistics to the Census Bureau and BLS.

[0058] Although it is within the scope of the invention where the method includes using web based applications and a Network server to identify, extract, and/or index disparate data live from a private database, it is also possible to extract such data directly from databases owned and maintained over a Network by the BLS, the Census, and/or the Council for Community and Economic Research and present such data to the user as a virtual table.

[0059] From the virtual table, the user sees numbers that are a mixture of raw statistical data and various index values for certain query variables, such that the disparate data can be readily compared. Presenting the raw statistical data and index values in table form allows the user to make a solid qualitative assessment of the query variables with respect to all MSAs returning data. The user's qualitative assessment of the returned data may include without limitation: the number of people holding specific jobs within a given area, the types of people holding specific jobs within a geographical area, the average wage of people holding specific jobs within a geographical area, the cost of living for those people in a geographic area, the total employment within a geographic area, the standard of living in a geographic area, industry employment in a geographic area, industry unemployment in a geographic area, occupation unemployment in a geographic area, occupation employment in a geographic, and the number of people employed in each occupation within each industry.

[0060] It is within the scope of the present invention where ranking the importance of the query variables is a subjective exercise based upon the user's specific business wants and/or business needs when locating a workforce within a geographic area. The user seeing statistical data and index values as a virtual table allows for an "apples to apples" comparison of the data. The user compares all index values and raw data to other MSAs having data returned to the user. After comparing the returned data, the user selects which MSA is best to have its business based on its workforce needs.

[0061] The list of query variables may include, without limitation: the size of a metropolitan area, the number and types of minorities within an occupation, occupation employment within a geographic area, occupation unemployment within a geographic area, occupation wage within a geographic area, standard of living within a geographic area, industry unemployment within a geographic area, industry employment within a geographic area, total occupation employment within a geographic area, total occupation unemployment within a geographic area, total industry employment within a geographic area, total industry unemployment within a geographic area, job creation within a geographic area, new hires within a geographic area, separations within a geographic area, turnover rate within a geographic area, average wages within a geographic area, cost of living within a geographic area, average wage inverse within a geographic area, industry unemployment within a geographic area, unemployment average within a geographic area, industry workforce within a geographic area, percentage of minorities within a geographic area, gender make up within a geographic area, the percent of industry employment in the given occupation, the percent of establishments reporting the given occupation in the given industry, the mean hourly industry and/or occupation wage, the mean annual industry and/or occupation wage, the percent relative standard error for the mean wage, employment percent relative error, and/or any combinations thereof.

[0062] It is a preferred embodiment of the present invention where the user selects query variables including, but not limited to: the number and types of minorities within an occupation, occupation employment, occupation unemployment, occupation wage, standard of living, industry employment, industry unemployment, total employment for a metropolitan area, total unemployment rate for a metropolitan area, and/or cost of living. It is within the scope of the present invention where the results for some and/or all query variables may be presented to the user as an index or percentile value.

[0063] Indexing

[0064] Once the disparate data is returned to the user, one might ask: "How do the numbers for each query variable compare for each MSA? What is a high value for a query variable with respect to other MSAs returning data for the same query variable? What is a low number?Relatively speaking, how low or how high is a number with respect to other MSAs returning a value for the same query variable? Some of the numbers are in numbers of workers within industries located in an MSA, some numbers are in dollars; how does the user compare these apples to oranges? Is there a common number the user can use to compare the disparate data returned for each query variable associated with an MSA?"

[0065] A convenient way to deal with these issues is an index. An index can be a number or formula expressing some property and/or ratio between two quantifiable things. An index can work for any and all data returned for each of the query variables. If some numbers are higher and some lower, the user may use an index to compare the quality of a query variable when compared to other MSAs having data returned for the same query variable. With an indexing method, the user can compare disparate data on an "apples to apples" basis. It is within the scope of the present invention where indexing the data returned to the user may be in the form of a simple index value, a percentile, a simple average, a weighted average, or a min-max regret.

[0066] One kind of index is a simple index. With a simple index, if a number is the same as the average, its index is 100.

For an average of 100, if an index value for an MSA is twice the index value averaged over all MSAs, its index value is 200. If the number is half the size, its index value is 50. A query variable returned as a simple index will tell the user if the returned index number is above or below the average number for that query variable averaged over all MSAs.

[0067] A percentile is another indexing scheme contemplated with the present invention. A percentile is another number that works like a simple index. The percentile presents a number on a scale of 100. The percentile indicates a number having a percent distribution that is equal to or below the highest number within the distribution, by definition 100%. For example, if an MSA has a percentile value at the bottom of the percentile scale with respect to averages across all MSAs, it is in the first percentile. If another city is in the median, it is in the 50th percentile, and so on. Unlike a simple index, a percentile will never exceed 100 by definition.

[0068] A simple average would include comparing a raw number returned for a query variable for a specific MSA against the total average for that query variable as calculated based on data averaged over all MSAs returning data.

[0069] The user might not feel that all query variables are of equal importance. With the present invention, the user may express the importance of the query variables in several different ways. The user can use a five point scale for each query variable, where rating a query variable with a factor of 5 for most important to 1 as the lowest. The user can also spread 100 points amongst the selected variables to give relative weights to the variables.

[0070] The user may also use an analytical technique called the "Min-Max Regret," which is short hand for minimizing your maximum regret. This technique quickly gets to those MSAs with the least negative values returned to avoid making costly mistakes. Here, the user places emphasis on the MSAs having the least negative data returned for each query variable. An area with a high, simple, or weighted average may seem attractive, but the high average might disguise a low variable, which might make that area unacceptable. The user may use the MIN function within a spreadsheet program for data returned for each query variable associated with a geographical area. The user may sort the returned data with the highest minimum index at the top.

[0071] With the present invention, the preferred embodiment includes having index values and/or percentiles of all data returned to the user. In calculating both indexes and percentiles, the present invention uses the first two digits of the NAICS or SOC when locating and retrieving the data. Locating data in tables cells by the first two digits of the codes allows the best trade-off of granularity of data returned with the fewest cells having sparse or no data. For industry employment, a user is allowed to select two-digit through six-digit NAICS. For occupation employment, occupation wage and standard of living, a user is allowed to select two-digit through five-digit SOC codes. For occupation unemployment and occupation minorities, only the first two digits of the selected SOC is used to retrieve data. For industry unemployment, only the first two digits of the selected NAICS is used to retrieve data.

[0072] For the present invention, the Occupation Minority Index is calculated as follows. Because the sample size for the monthly Census is small, the weighted, value as calculated by the Census Bureau, is used. For all minority classifications, the weighted value is summed across 24 months of data for each occupation and each MSA. Minority women are counted twice (Hispanic women and non-hispanic women of other minorities). This gives the total weighted value of minorities in each occupation in each MSA. The average weighted value across MSAs is calculated. Then the weighted value for each MSA is expressed as an index relative to the group average. Within each MSA, the distribution of minorities among various groups is expressed as percent contribution to the total weighted value of minorities within that MSA. The minority groups comprise African Americans, Asian American, Native Hawaiian or other Pacific Islander, American Indian or Alaskan native, Mixed Race, Hispanic, Non-Minority Women, Minority Women. A minority woman will be counted twice—once in her racial or nationality (Hispanic) group and again under Minority Women.

[0073] For the present invention, the indexing scheme is calculated as a simple ratio between a number for a query variable within a specific MSA, divided by the average number for the same query variable over all MSAs. The number for a query variable within a specific MSA may be generated by taking a simple ratio between the number of interest for a category, divided by the sum of all people within an MSA that fits within that category. A non-limiting example being the occupational unemployment index, where the index may be calculated using the following non-limiting form:

$$\text{Occupation Unemp. Index} = \frac{\text{Sum over 6 months (weighted value for Unemp.)}}{\text{Avg. Sum over 6 months (weighted value for Unemp. for all } MSAs\text{)}}$$

[0074] The above equation can be described as follows. Because the sample size for the monthly Census is small, the weighted value as calculated by the Census Bureau is used. The weighted value is summed across six months of data for each occupation and each MSA. This gives the total weighted value of unemployed workers capable of doing work in each occupation in each MSA. The average weighted value across MSAs is calculated. Then the weighted value for each MSA is expressed as an index relative to the group average. For each MSA that has an occupation unemployment index returned, the user may compare these index values against each other to see if an MSA has a higher or lower number of unemployed people capable of doing a specific job when compared to a similar pool of workers across all MSAs.

[0075] Another non-limiting example for a simple index is the occupational employment index, where the index may be calculated using the following:

$$\text{Occupation Employment Index} = \frac{\text{Number of employed in selected occupation in specific } MSA}{\text{The Average number of employed in selected occupation for all } MSAs}$$

[0076] The above equation can be described as a simple ratio between the number of employed people doing a specific job within an MSA at a given point in time. That number is then divided by the average number of employed people for that occupation over the same period of time for all MSAs within the private database having such data.

[0077] The Cost of Living Index is the raw index number as provided by the Council for Community and Economic Research. The index is a measure of the cost of living for maintaining a certain standard of living over a period of time. The Cost of Living Index measures differences in prices among areas at a single point in time.

[0078] Although examples for indexing are shown with respect to occupation minority index and occupation unemployment, and occupation employment index it is within the scope of the present invention where data for all query variables may be returned to the user as SQL-generated index values or percentile values. This can be accomplished by embedding within the query language a similar equation as used above or similar equations denoting percentile values.

[0079] Creating a Request

[0080] The Computer and Logging In

[0081] The computer-implemented method and system may include software installed on a personal computer, a workstation, a minicomputer, a mainframe, a supercomputer, or a web or computer server. Each computer should at least have a central processing unit, a main memory for storing programs or data, and a fixed or hard disk drive unit, which is all coupled by a data bus. The computer should have a basic operating system, such as MS Windows, Linux, Mac OS, and the like. The software used with the present invention defines the functionality of the system according to the present invention and enables the system to work as described. The program may reside on, or in, a hard disk or the memory of a user's computer or may be accessible from a remote server over a Network. The program may run inside Microsoft Internet Explorer, Firefox, Netscape, Opera, Safari, or any compatible web browser, where the web browser is capable of rendering DOM, CSS, Javascript, XML, XMLHttp requests, and the like. The computer may be a desktop, server, portable, hand-held, set-top, or any other desired configuration.

[0082] The computer typically receives a number of inputs and outputs for communicating information externally. Non-limiting examples of inputs and outputs may include: a keyboard, a mouse, a trackball, a joystick, a touchpad, and/or a microphone, a CRT monitor, and/or an LCD display panel. Otherwise, the user selections may be received via another computer interfaced with a computer over Network or via a dedicated workstation interface or the like.

[0083] Initially, the user is presented with a web menu, which may be an HTML or HTTP accessed via a browser. The user is prompted to enter a pre-registered user identification and password at the first web menu. This information is selected by the user and is kept private for the user to access the present invention. A non-limiting example is, an identification and password having a mixture of alphabetical and numerical values ranging from about six characters to about eight characters in length.

[0084] Step One: Occupation Selection

[0085] After the user signs-in, the user is ready to start the process of locating a workforce to fill its business needs. FIG. **2** depicts a web menu where the user is prompted to form a request by selecting from a list of major occupational categories as defined by the U.S. Bureau of Labor and Statistics (BLS). Currently, there are over 820 BLS State Occupational Codes according to their occupational definition and further classified into approximately 23 major groups, 96 minor groups, and 449 broad occupations. Each occupation name, along with its various sub-categories, and database specific codes, is mined from the BLS database and is stored in a tables associated with the private database.

[0086] Non-limiting example of major BLS occupations may include, without limitation: Management Occupations; Business and Financial Operations Occupations; Computer and Mathematical Occupations; Architecture and Engineering Occupations; Life, Physical, and Social Science Occupations; Community and Social Services Occupations; Legal Occupations; Education, Training, and Library Occupations; Arts, Design, Entertainment, Sports, and Media Occupations; Healthcare Practitioner and Technical Occupations; Healthcare Support Occupations; Protective Service Occupations; Food Preparation and Serving Related Occupations; Building and Grounds Cleaning and Maintenance Occupations; Personal Care and Service Occupations; Sales and Related Occupations; Office and Administrative Support Occupations; Farming, Fishing, and Forestry Occupations; Construction and Extraction Occupations; Installation, Maintenance, and Repair Occupations; Production Occupations; Transportation and Material Moving Occupations; and the like. As an alternative, the user may directly type an occupational name into a field located on the web menu.

[0087] After selecting the major occupational category, the user may further refine the search by optionally selecting from a list of occupational subcategories associated with the tables located within the private database. For example, a user may select Management Occupations from the occupational field. The user may then optionally select from occupational subcategories under Management Occupations. As defined by the BLS, the occupational subcategories under Management Occupations may include, without limitation: Chief Executives; General and Operations Managers; Legislators, Advertising and Promotions Managers; Marketing Managers; Sales Managers; Public Relations Managers; Administrative Services Managers; Computer and Information Systems Managers; Financial Managers; Compensation and Benefits Managers; Training and Development Managers, Human Resources Managers; All Other, Industrial Production Managers; Purchasing Managers; Transportation, Storage, and Distribution Managers; Farm, Ranch, and Other Agricultural Managers; Farmers and Ranchers, Construction Managers; Education Administrators; Preschool and Child Care Center/Program, Education Administrators; Elementary and Secondary School, Education Administrators; Postsecondary, Education Administrators; All Other; Engineering Managers; Food Service Managers; Funeral Directors; Gaming Managers; Lodging Managers; Medical and Health Services Managers; Natural Sciences Managers; Postmasters and Mail Superintendents; Property, Real Estate, and Community Association Managers; Social and Community Service Managers; and Managers. Each major occupational category and subcategory thereof corresponds to a column within in a table housed on the private database, where the data is initially mined from the BLS database. The BLS uses the SOC scheme, but the Census Bureau uses it's own coding system. It is within the scope of the present invention that the Census coding system is translated to SOC so that unemployment and minority data can be compared across data sources.

[0088] Step Two: Industry Selection

[0089] After selecting a major occupation or optionally a subcategory thereof, the user is presented with another web menu, as depicted in FIG. **3**. Here, the user may optionally select a major industry category as defined by the NAICS. Optionally, the user may type an industry name into a field

located on the web menu. The typed industry name is typically an NAICS industry name associated with a table within the private database.

[0090] Note that the user is only presented with industries employing occupations, or subcategories thereof, as selected by the user from the previous web menu. To see more industry choices at the present web menu, the user would select from broader occupations as listed on the previous web menu. However, when viewing the returned data, industry results for geographic regions will include all occupations, not just data for an occupation selected from a previous web menu.

[0091] There are over twenty NAICS industry sectors, further divided into thousands of sub-sectors, industry groupings, specific industries, and finally U.S. industries. Five sectors are mainly goods-producing sectors and fifteen are entirely services-producing sectors. NAICS allows for the identification of 1,170 industries. Non-limiting examples of NAICS industry sectors may include without limitation: Forestry, Fishing, Hunting, and Agriculture Support; Mining; Utilities; Construction; Manufacturing; Wholesale Trade; Retail Trade; Transportation and Warehousing; Information, Finance and Insurance; Real Estate and Rental and Leasing; Professional, Scientific, and Technical Services; Management of Companies and Enterprises; Administrative and Support and Waste Management and Remediation Services; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; Accommodation and Food Services; Other Services (except Public Administration); and Unclassified. All statistical data is gathered by the U.S. Census Bureau. However, since the BLS uses NAICS and the Census Bureau uses its own coding system, the Census coding system is translated to NAICS so that unemployment data can be compared across data sources. That data is then stored on their database that is accessible over a Network. The data is mined and then transferred to the private database of the present invention.

[0092] After optionally selecting a major industry, the user may further refine their search by selecting from a list of industry subcategories associated with tables within the private database. For example, a user may select Manufacturing from the major industry field. The user may then optionally select from subcategories under Manufacturing, where the industry subcategories as defined by the NAICS would be Food Manufacturing; Beverage and Tobacco Product Manufacturing; Textile Mills; Textile Product Mills; Apparel Manufacturing; Leather and Allied Product Manufacturing; Wood Product Manufacturing; Paper Manufacturing; Printing and Related Support Activities; Petroleum and Coal Products Manufacturing; Chemical Manufacturing; Plastics and Rubber Products Manufacturing; Nonmetallic Mineral Product Manufacturing; Primary Metal Manufacturing; Fabricated Metal Product Manufacturing; Machinery Manufacturing; Computer and Electronic Product Manufacturing; Electrical Equipment; Appliance, and Component Manufacturing; Transportation Equipment Manufacturing; Furniture and Related Product Manufacturing; and/or Miscellaneous Manufacturing.

[0093] Step Three: Selecting Query Variables

[0094] From FIG. **4**, the user is prompted to select from a number of query variables associated with the occupation and/or industry categories or subcategories selected from previous web menus. The list of query variables may include without limitation: occupation minority, occupation employment, occupation unemployment, occupation wage, standard of living, industry employment, industry unemployment, total employment rate for a metropolitan area, total unemployment rate for a metropolitan area, and/or cost of living.

[0095] Occupation employment represents the size of the workforce in the occupation that the user selected, regardless of industry, for all MSAs returning data. Occupation Minority is an index of the number of women and minorities that can be found with in an occupation, regardless of industry, for all MSAs returning data. Occupation unemployment represents the number of unemployed people, in all industries, for all MSAs returning data. Occupation wage is the median annual wage within the user-selected occupation, regardless of industry, for all MSAs returning data. Standard of Living represents the median annual wage for the occupation selected by the user, regardless of industry, divided by the Cost of Living for all MSAs returning data.

[0096] Industry employment is the number of people employed in an industry selected by the user, regardless of occupation, for all MSAs returning data. Industry unemployment is the number of people unemployed in an industry, regardless of occupation, for all MSAs returning data. Total metropolitan area employment is the total number of people employed in all occupations and industries within an MSA. Cost of Living is the relative price levels for consumer goods and services for all MSAs returning data. Metropolitan area unemployment rate is a ratio of unemployed to total number of people for all industries and occupations for all MSAs returning data.

[0097] It is within the scope of the present invention where data for all query variables may be returned to the user as SQL-generated index values. These query variables represent at least one column of at least one database table containing the desired information for extraction. The user then sends the request to the private database by pressing a results tab located on the web menu. As an alternative, a user may structure a request by optionally bypassing any of these menus, thus creating a request that will retrieve information that is non industry or occupation related, e.g. statistical data relating to the Cost of Living Index, minority information, and/or Standard of Living Index.

[0098] Step Four: Results View

[0099] From FIG. **5**, the user is presented with a final web menu having a virtual table with a number of columns and rows. The virtual table shows data for each query variable extracted from the private database as identified by the automated SQL statement. Before being returned to the user's computer, all raw statistical data may be converted into an index or percentile value by an SQL statement.

[0100] The column headings of the virtual table are the query variables relating to the user's selection(s) of occupation and industry from previous steps. Non-limiting examples of query variables presented to the user may include, without limitation: occupation minority index, occupation employment, occupation unemployment index, occupation wage, standard of living, industry employment, industry unemployment index, cost of living index, total employment for a metropolitan area, total unemployment rate for a metropolitan area.

[0101] When viewing results, the user is presented with the options of displaying all returned results, the top twenty results, or may choose which returned data to view. The virtual table shows the user statistical data for the occupation and industry and the associated query variables in columns and rows. Having the data presented to the user as a mixture

of raw statistical data and various index values for certain query variables makes the data readily comparable.

[0102] Presenting the raw statistical data and index values in table form allows the user to make a solid qualitative assessment of the query variables with respect to all MSAs returning data for the occupation and industry selection(s). The user's qualitative assessment of returned data may include, without limitation: the size of a workforce talent pool by city, job title, industry, and ethnicity, employment and unemployment rates returned to the user, the cost and standard of living returned to the user, the areas with the highest number of minorities by job, industry, and geographic location, the total employment within a geographic area, the standard of living within a geographic area, industry employment within a geographic area, industry unemployment within a geographic area, and/or total unemployment with in a geographic area.

[0103] It is within the scope of the present invention where ranking the importance of the query variables is a subjective exercise based upon the user's specific business wants and/or business needs when locating a workforce within a geographic area. When disparate data is returned by the automated SQL statement, the user seeing statistical data and index values in a virtual table can make an "apples to apples" comparison of the data. The user compares all index values and raw data to other areas having data returned to the user. After comparing the returned data, the user selects which geographic area is best to have its business, based on its workforce needs.

[0104] Creating Database Tables

[0105] Disparate data is initially mined from databases maintained by the BLS, the Census Bureau, and the Council for Community. The data mining process is not performed, per se, by a user of the invention, but by the database administrator of the private database. This data is then used to create at least one table located within the private database. Again, the data is statistical data essential to quantifying industries and occupations. The following is a non-limiting example of an SQL segment that downloads and extracts occupation employment and occupation wage and data from MS Excel files located at ftp://ftp.bls.gov/pub/special.requests/oes/oesm07ma.zip:

[0106] INSERT INTO occupation_data (msa_id, msa_name, occupation_id, name, type, total_employment, median_annual_wage);

[0107] SELECT AREA, AREA_NAME, OCC_CODE, OCC_TITLE, GROUP, TOT_EMP, A_MEDIAN FROM ExcelFiles;

[0108] UPDATE msa JOIN occupation_data USING (msa_id) SET

[0109] msa.total_employment=occupation_data.total_employment WHERE occupation_id="XX-000."

[0110] The above SQL segment parses the Excel files with a PHP based parser and populates a the private database. In addition, the "MSA" table is updated with the MSA total employment data imports occupation data into table "occupation_data" (records with occupation_id=XX-0000 are cumulative for the MSA across occupations).

[0111] Occupation Employment data may be returned to the private database via the following query group by MSA, where 'XX-XXXX' designates the occupation selected for extraction:

[0112] SELECT msa.msa_id as msa_id, occupation_data.total_employment AS occupation_employment FROM occupation_data JOIN msa using (msa_id) WHERE occupation_id='XX-XXXX';

[0113] Occupation Wage data may be returned to the private database via the following query group by MSA, where 'XX-XXXX' is designates the occupation selected for extraction:

[0114] SELECT msa.msa_id as msa_id, median_annual_wage, occupation_data.total_employment AS occupation_employment FROM occupation_data JOIN msa USING(msa_id)

[0115] WHERE occupation_id='XX-XXXX.'

[0116] The following is a non-limiting example of SQL segments that download and extract industry data into tables located within the private database. Due the amount of industry related data, creating industry tables occurs in a series of steps. Initially industry data is Downloaded from data archives located at ftp://ftp.bls.gov/pub/special.requests/cew/2007/msa/allmsa07.zip, extracting the archive. One temporary attribute table is created via the following query:

[0117] CREATE TABLE import (row text);

[0118] Next said data is imported into a temporary "import" table, "industry_data_alt," via common SQL import utilities, non-limiting examples being mysqlimport, where lines are terminated-by="\n" databa_name import.txt.

[0119] The next step for creating industry tables within the private database includes parsing the values from the temporary "import" table and inserting that data into the "industry_data_alt" table via the following query, data is queried for the first three quarters and for the fourth quarter annual data:

[0120] INSERT into industry_data_alt

[0121] (msa_id,industry_id,ownership, disclosure,total_employment)

[0122] SELECT concat(trim(substr(row,5,4)),'0') as msa_id,trim(substr(row,12,6)) as industry_id,trim(substr(row,11,1)) as ownership,

[0123] trim(substr(row,25,1)) as disclosure,(trim(substr(row,34,9))+trim(substr(row,43,9))+trim(substr(row,52,9))/3 as total_employment.

[0124] INSERT into industry_data_alt

[0125] (msa_id,industry_id,ownership,disclosure, total_employment)

[0126] SELECT concat(trim(substr(row,5,4)),'0') as msa_id,trim(substr(row,12,6)) as industry_id,trim(substr(row,1,1)) as ownership,

[0127] trim(substr(row,285,1)) as disclosure,(substr(row,294,9)+substr(row,312,9)+substr(row,303,9))/3 as total_employment FROM import;

[0128] After industry data is placed into the industry_data_alt table, post import data manipulations are performed via the following queries:

[0129] UPDATE industry_data_alt set total_employment=-1 where disclosure='N' and total_employment=0.

[0130] MSA codes may be reconciled for data in the industry_data_alt tables via the following query:

[0131] UPDATE industry_data_alt set msa_id_raw=msa_id.

[0132] Some industry data is reassigned to different MSAs to account for super MSAs versus Divisions via the following queries:

[0133] UPDATE industry_data_alt set msa_id=70750 where msa_id=12620.

[0134] Unwanted industry data may be deleted by the following query:

[0135] DELETE from industry_data_alt where industry_d=31.

[0136] All data returned to the private database may be joined by industry rnages by the following query:

[0137] INSERT into industry_data_alt

[0138] SELECTmsa_id,31,sum(total_employment), ownership,disclosure,msa_id_raw

[0139] FROM industry_data_alt where substr(industry_id,1,2)=31 and total_employment>0 group by msa_id;

[0140] industry data at the county level may be extracted from ftp://ftp.bls.gov/pub/special.requests/cew/2007/county/*.zip (about 50) using the same query steps as above.

[0141] Industry Employment data may be returned to the private database via the following query, where XXXXXX designates an industry code returned to the database:

[0142] SELECT msa.msa_id as

[0143] msa_id,SUM(industry_data_alt.total_employment) AS

[0144] industry_employment_alt FROM industry_data_alt JOIN msa USING (msa_id) WHERE industry_id=XXXXX AND industry_data_alt.total_employment>=0 AND ownership=5 GROUP BY msa.msa_id;

[0145] SQL Query, Indexing, and Percentiles

[0146] Although the invention describes using the PHP/JavaScript/SQL platforms to query the private database, it is within the scope of the present invention where the combined platforms are just one of many computer languages that can be used with the present invention. Other computer languages may include, without limitation: MS SQL/ASP.NET, MS Access/Visual Basic, MySQL/Coldfusion (CFML), HSQL/JSP (J2EE), PostgreSQL/Perl, MS SQL/Foxpro, Oracle/ASP.NET.

[0147] However, with the present invention, GUIs are presented to the user's computer by the computer server via the PHP and JavaScript platforms. It is well known within the arts that PHP is a scripting language that produces dynamic web pages with stand-alone graphical applications. With the present invention the use of PHP may include, without limitation: the authentication users; interpreting and displaying error messages to user; displaying relevant sub-categories when a major occupation or industry is selected; defining additional variables such as cumulative sum for calculations; reduce the complexity and improve the efficiency of some queries; with programming loops and conditionals such as IF statements; WHILE statements; and/or FOR/EACH statements.

[0148] The present invention also makes use of JavaScript on the user's computer. Non-limiting uses of JavaScript may include: sorting occupation selections in an occupation selection screen, sorting industry selections in an industry selection screen, limiting the results tables to displaying the top 20 or all results, expanding to county data, expanding to minority percentages, displaying user results returned to the user in a View, constraining industry selections by selected occupation, processing sort order requests, processing downloads of returned data to the users computer to CSV.

[0149] All user selections of occupation, industry, and query variables, optional or otherwise, via PHP/JavaScript generate an automated SQL-statement that locates the private database over a Network, extracts data from tables in the database, and converts the data to an index or percentile. The data may be presented to the user as a web-based virtual table or the information can be downloaded onto the user's computer as an XML or CSV file to be viewed in a separate spreadsheet program.

[0150] The database is maintained on the computer server and is capable of reading SQL language queries. At the applications layer, for output to the user's computer one may find DHTML, XML, CSS, or JavaScript platforms. A database manager periodically updates the database by the raw-data parsing of plain-text data formats from the agency servers, via preprocessing, normalization, and aggregation of said raw data.

[0151] In a preferred embodiment, the query may be in the form of an SQL code that is supported by the MySQL-PHP platform. MySQL is a multithreaded, multi-user SQL database management system (DBMS). The basic program runs as a server providing multi-user access to a number of databases. MySQL is commonly used in web applications and acts as the database component of the LAMP, MAMP, and WAMP platforms, i.e. Linux, Mac, Windows, Apache, MySQL-PHP, Perl, and Python platforms.

[0152] However, one of ordinary skill in the art would recognize that other platform sources may be used to initiate the query of the present invention. Other platform sources may include, but are not limited to: Oracle, IBM, ANSI, and the like. Any programming language that works with the MySQL platform may be used with the present invention. The programming languages may include but are not limited to: ANSI C/ANSI C++, Delphi, and Visual Basic.

[0153] A standard SQL statement usually takes the form: "SELECT <string> FROM <string> WHERE <string> GROUP BY<string> HAVING <string> ORDER BY<string>." More information on SQL can be found at: http://dev.mysql.com/doc/.

[0154] While only the SELECT and FROM strings are required, it is desirous to include other strings to further narrow and optimize the search. The result of a SELECT statement is a subset of data that matches the search criteria, and is stored as a temporary table, often termed the "result table." In the SELECT statement illustrated above, the FROM string indicates the table name from which the information is being retrieved. The remaining strings included in the SELECT statement direct which columns are to be returned and stored in the results table. The WHERE string includes filtering criteria; and therefore it dictates which rows satisfy the search criteria. The results are to be returned and stored in the results table.

[0155] A join operation is usually performed by specifying more than one table in the FROM string of the SELECT statement. A join operation allows rows from multiple tables all satisfying the search criteria to be sequentially combined into a single row and stored in the results table. This becomes important for grouping relevant information into a single table, rather than requiring the search engine to repeatedly parse the entire database to assemble the requested data, thus saving time.

[0156] Initial SQL Segments

[0157] The common SQL segment indicating the location of the database may take the following non-limiting form:

[0158] The common SQL segment indicating MSAs may take the following non-limiting form:

[0159] Common queries start

[0160] SELECT m.*,m.name AS msa_name FROM msa AS m|

[0161] Common queries end

[0162] The above SQL segment displays the MSA name rather than the MSA code whenever MSAs are displayed.

[0163] SQL Segments to Retrieve Raw Data

[0164] All SQL queries are tethered to both common SQL segments to retrieve raw data for query variables. These SQL segments retrieve raw data for query variables linked by common MSAs. Non-limiting examples may include raw data associated with total employment for occupations and industries linked via common MSAs, total unemployment for occupations and industries linked by common MSAs, numbers reflecting minority make up of occupation and industries linked by common MSAs, numbers associated with a cost of living index, total MSA employment and unemployment rates, and occupation wage occupation density for an MSA, industry density for an MSA.

[0165] A non-limiting example of an SQL segment for locating raw data relating to the query variable occupational employment may take the following form:

[0166] Queries for factor OCCUPATION EMPLOYMENT

[0167] (in all industries)

[0168] (# of workers employed) start

[0169] SELECT msa.msa_id as msa_id,occupation_data.total employment AS

[0170] occupation_employment FROM occupation_data JOIN msa

[0171] using(msa_id) WHERE occupation_id='17-0000'|

[0172] Queries for factor OCCUPATION EMPLOYMENT

[0173] (in all industries)

[0174] (# of workers employed) end

[0175] The above SQL segment can be described as follows: For each MSA code listed in our master list of MSAs, the SQL segment selects the listed total employment value in the occupation-data table. The occupation code is the selected SOC corresponding with the user-selected occupation from the web Menu (in this non-limiting example 17-0000).

[0176] The above SQL segment identifies tables within the private database having MSAs with data related to the total employment of the user selected occupation. All MSAs having raw data on total employment for the user selected occupation is then joined using the MSA identification and the occupational identification value. If an MSA has a total employment number for the occupation selected by the user, then such data is returned to the user and may be viewed in the virtual table. It is within the scope of the present invention where similar SQL segments are generated for all query variables related to occupation unemployment, industry employment, industry unemployment, metropolitan unemployment rate, occupation wage, cost of living index, cost of living, occupation density within an MSA, industry density within an MSA, where the segment joins total employment or total unemployment data relating to occupation or industry and link them via common MSAs.

[0177] SQL Segments for Locating and Indexing Query Variables

[0178] To retrieve indexed data for query variables, other SQL segments are generated based on the user's selection of occupation and industry, and/or subcategories thereof, and the user's selection of query variable, along with selecting a graphical tab that initiates the index option. The following non-limiting example gives an SQL segment that locates and indexes data from the private database per the user's selection of occupation, and/or subcategories thereof, and the user's selection for the query variable occupation unemployment, and selection of the indexing option:

[0179] Queries for factor OCCUPATION UNEMPLOYMENT INDEX

[0180] (in all industries)

[0181] (1.0=average) start

[0182] SELECT MAX(date) AS max_month FROM employment_data|

[0183] 0.57918095588684 SELECT msa_id,SUM (value) AS

[0184] occupation_unemployment FROM employment_data WHERE occupation_id LIKE '17-%' AND employment_data.type=2 AND date<='2008-07-01' AND date>='2008-01-01' GROUP BY msa_id|

[0185] Queries for factor OCCUPATION UNEMPLOYMENT INDEX

[0186] (in all industries)

[0187] (1.0=average) end.

[0188] The above SQL segment can be described as follows: select the MSA code and the sum of weighted values from the employment_data table, where the first two digits of the SOC are 17 and the survey respondent is unemployed (type=2) and the survey records are between Jan. 1, 2008 and Jul. 1, 2008 (our most recent 6 months of data).

[0189] The above SQL statement selects the occupational unemployment rate in all industries for all MSAs returning data for that query variable. The occupation unemployment index is generated according to a simple index scheme where the average is 100. The present invention groups the MSAs returning data by an identifier for each MSA having such data. Data is updated monthly and only the most recent six months of data are used. The LIKE statement broadens the user's selected occupation code (five-digits) to the major (two-digit) category for more complete data.

[0190] It is within the scope of the present invention where similar SQL segments are generated to index raw data, or previously indexed values, for query variables related to occupation employment, industry employment, industry unemployment, metropolitan unemployment rate, occupation wage, cost of living index, occupation density within an MSA, industry density within an MSA, where the present invention uses a simple indexing scheme to index raw data. For index values relating to occupation, the index value reflects data for all industries employing the user-selected occupation. For index values relating to industry, the index value reflects data for all occupations employed within the user selected industry. The above query segment is typical of SQL statements used in the present invention for indexing raw data associated with query variables in the private database, where indexing is based on a simple indexing scheme.

[0191] Queries for factor METROPOLITAN AREA UNEMPLOYMENT

[0192] RATE

[0193] (for all industries and occupations) start

[0194] SELECT msa_id,total_unemployment FROM msa WHERE total_unemployment>0|

[0195] Queries for factor METROPOLITAN AREA UNEMPLOYMENT RATE

[0196] (for all industries and occupations) end

[0197] The above SQL segment can be described as follows: The unemployment rate is stored with each MSA name and code, and then this query selects the Unemployment Rate for each MSA stored in the master MSA table.

[0198] Queries for factor COST OF LIVING INDEX
[0199] (relative price levels for consumer good and services)
[0200] (100.0=average) start
[0201] SELECT msa_id,living_cost FROM msa WHERE living_cost >0
[0202] Queries for factor COST OF LIVING INDEX
[0203] (relative price levels for consumer good and services)
[0204] (100.0=average) end

[0205] The above SQL segment can be described as follows: The Cost of Living Index is stored with each MSA name and code, and then this query selects the Cost of Living Index for each MSA stored in the master MSA table.

[0206] To retrieve indexed data for the query variable Standard of Living, the following non-limiting SQL segment locates and indexes data from the private database:

[0207] Queries for factor STANDARD OF LIVING
[0208] (Wage/Cost of Living) start
[0209] SELECT msa.msa_id AS
[0210] msa_id,(occupation_data.median_annual_wage/msa.living_cost) AS living_standard,median_annual_wage FROM occupation_data JOIN msa
[0211] using(msa_id) WHERE occupation_id='17-0000'|
[0212] Queries for factor STANDARD OF LIVING
[0213] (Wage/Cost of Living) end

[0214] The above SQL statement creates and retrieves a Standard of Living index by taking a simple ratio between the occupation wage and the cost of living, where the index value is then linked by common MSAs. Both the occupation wage and cost of living are reported in U.S. dollars. For each MSA in the master listing of MSA codes, the SQL segment obtains the median annual wage from the occupation_data table where the occupation SOC equals the user selected occupation and divides it by the Cost of Living index from the MSA table.

[0215] To retrieve data for query variables associated with industry data, an initial SQL segment may be generated based on the user's selection of industry, and/or subcategories thereof, and the user's selection of industry related query variables. An example SQL segment statement formed after the user's industry selections may take the following form:

[0216] Queries for factor INDUSTRY EMPLOYMENT
[0217] (for all occupations)
[0218] (# of workers employed) start
[0219] SELECT msa.msa_id as
[0220] msa_id,SUM(industry_data_alt.total_employment) AS industry_employment_alt FROM industry_data_alt JOIN msa USING (msa_id) WHERE industry_id='72' AND industry_data_alt.total_employment>=0 AND ownership=5 GROUP BY msa.msa_id|
[0221] SELECT * FROM industry_data_alt WHERE industry_id='72' AND industry_data_alt.total_employment<0|
[0222] SELECT SUM(total_employment) AS total_employment FROM msa_county INNER JOIN industry_county_data USING (county_id)
[0223] WHERE industry_id=72 AND msa_id='10180' AND disclosure!='N' AND owner=5|
[0224] Queries for factor INDUSTRY EMPLOYMENT
[0225] (for all occupations)
[0226] (# of workers employed) end

[0227] The above SQL segments retrieve raw data for all industries returning data for the user-selected occupation. For each MSA, the total employment are selected for each county where the county's MSA is the desired MSA and the data is public (not equal to Null) and the company reporting is public. First, for each MSA in the master table, the sum is calculated for total employment where industry is the selected industry and the value is valid (greater than zero) and the company reporting is public. Second, for each MSA, obtain any footnoted values (less than zero) for the selected industry. The external database includes footnotes for non-disclosed and private data. These characters are converted to negative numbers on import so that they can be distinguished and referenced in the display.

[0228] The numbers for total employment in an industry is for all occupations employed within that industry for an MSA. It is within the scope of the present invention where the above SQL segment retrieves industry data for total employment for specific counties within MSAs. The above SQL segment may be generated may times across many MSAs having data reflecting industry total employment at the MSA and county levels.

[0229] Ascription

[0230] It is within the scope of the present invention where the computer implemented method and system ascribes the estimated data for each occupation in each industry for each MSA. The present invention may return to the user data reflecting numbers that predict the total numbers for occupations by industry for a particular MSA. The present invention makes these estimates in two stages: 1) Simple Proportional Ascription, and 2) Simple Proportional Ascription with Marginal Reconciliation.

[0231] Simple Proportional Ascription uses the proportional of occupations within each industry at the national level to distribute occupations within each industry at the individual MSA level.

[0232] Simple Proportional Ascription with Marginal Reconciliation goes one step further by reconciling the results of the first step (Simple Proportional) with the known totals for each occupation and for each industry within the MSA. This is accomplished in an iterative fashion as follows: a.) first the estimated occupational estimates from the Simple Proportional Ascription are totaled, and compared to the total for each occupation in that MSA in the source database. The difference is then found, and allocated among all the non-zero cells; b.) then the new estimates are totaled by industry and compared to the total for each industry in that MSA in the source. Again, the difference is then found, and allocated among all the non-zero cells; c.) the new estimates by industry are then totaled by occupation. Again the difference is then found, and allocated among all the non-zero cells; and d.) the process continues reconciling the estimated differences with the marginal data by occupation, then by industry, until the difference is less than one. At this point, for practical purposes, the results from the Simple Proportional Ascription are reconciled with the given marginal totals for each occupation and industry with the MSA

[0233] Data Analysis

[0234] It is within the scope of the present invention where the user may filter all returned data, be it raw data, indexed data, or data that has been calculated as a percentile, where both sides of the mean are calculated separately. The user may enter into a field located within the results view the number for which filtering will be based and may opt to filter numbers

that are greater than or equal to the selected number or less than or equal to the selected number.

[0235] It is within the scope of the present invention where the user may perform a simple average of the indexed and percentile values returned for a query variable across all MSAs.

[0236] It is within the scope of the present invention where the user may perform a weighted average for all indexed and percentile values returned to the user. The user may select weight factors from the group consisting of very important, important, average, little weight, and no weight. Or, the user may allocate 100 points among factors, with zero being no weight but to be displayed.

[0237] It is within the scope of the present invention wherein the user may perform a min-max regret on all index and percentile data returned to the user.

[0238] The foregoing words describe one embodiment of a computer-implemented method and system that allows an employer to quickly assess the advantages and disadvantages associated with having a business in a geographical area with a number of people to fill its workforce. However, these words are not a limitation on the scope of the present invention, but are written to detail certain embodiments thereof. It should be understood that changes may be made to the specific occupation selections, industry selections, and/or query value options without departing from the scope of the invention, thus, the scope of the present invention is defined solely by the following claims.

What is claimed is:

1. A computer-implemented method for extracting, integrating, and creating index and/or percentile values of disparate data from one or more tables in a database, the method comprising:

a.) receiving user selections relating to industries and occupations that form a structured language query;

b.) the structured language query of step a.) being presented to a database having tables with disparate statistical data relating to industries and occupations;

c.) having a structured language query extract the disparate statistical data of step b.) from the database corresponding to the user's selections of step a.);

d.) having a structured language query within the database convert some, or all, of the extracted statistical data of step c.) into index or percentile values; and

e.) having a structured language query return the statistical data and/or the converted statistical data of step d.) to the user as integrated data, index values, percentile values, and/or any combinations thereof.

2. The user of claim **1**, wherein the user comprises a business, the media, or any other person or organization that needs to choose or allocate resources between or among geographical areas.

3. The method of claim **1**, wherein user selections are accessed over a Network at a computer server by web based applications, wherein user selections indicate at least one cell within at least one column and/or row of at least one database table having statistical data relating to industries and occupations within the database.

4. The method of claim **1**, wherein user selections are accessed from a permanent or temporary computer file located on the user's computer, wherein user selections indicate at least one cell within at least one column and/or row of at least one database table having statistical data relating to industries and occupations within the database.

5. The method of claim **1**, wherein the user selections comprises occupational categories and/or occupational subcategories, various industry categories and/or industry subcategories, query variables for the same, and/or any combinations thereof.

6. The query variables of claim **5**, wherein said query variables comprise the size of a metropolitan area, the number and types of minorities within an occupation, occupation employment within a geographic area, occupation unemployment within a geographic area, occupation wage within a geographic area, standard of living within a geographic area, industry unemployment within a geographic area, industry employment within a geographic area, total occupation employment within a geographic area, total occupation unemployment within a geographic area, total industry employment within a geographic area, total industry unemployment within a geographic area, job creation within a geographic area, new hires within a geographic area, separations within a geographic area, turnover rate within a geographic area, average wages within a geographic area, cost of living within a geographic area, average wage inverse within a geographic area, industry unemployment within a geographic area, unemployment average within a geographic area, industry workforce within a geographic area, percentage of minorities within a geographic area, gender make up within a geographic area, the percent of industry employment in the given occupation, the percent of establishments reporting the given occupation in the given industry, the mean hourly industry and/or occupation wage, the mean annual industry and/or occupation wage, the percent relative standard error for the mean wage, employment percent relative error, and/or any combinations thereof.

7. The query variables of claim **6**, wherein all statistical data associated with each query variable is returned, displayed, or stored on the user's computer as raw data, an index value, or a percetinle value.

8. The geographic area of claim **6**, wherein the geographic area is a Metropolitan Statistical Area as defined by the United States Office of Management and Budget.

9. The method of claim **1**, wherein the U.S. Census Bureau and the U.S. Bureau of Labor and Statistics define the industry and occupation categories and subcategories thereof, or are harmonized to correspond to those categories or subcategories.

10. The database of claim **1**, wherein said database is a private database housed on a computer server and accepts query languages comprising MS SQL/ASP.NET, MS Access/Visual Basic, MySQL/Coldfusion (CFML), HSQL/JSP (J2EE), PostgreSQL/Perl, MS SQL/Foxpro, Oracle/ASP.NET.

11. The structured language query of claim **1**, wherein the structured language query is in the form of an SQL query statement.

12. The disparate data of claim **1**, wherein the disparate data comprises statistical data essential to quantifying and/or qualifying various industry and occupation query variables as acquired by the U.S. Bureau of Labor Statistics, the U.S. Census Bureau, the Council for Community, and the Economic Research.

13. The disparate data of claim **1**, wherein the disparate data is initially mined over a Network from tables located within databases maintained by the U.S. Bureau of Labor

Statistics, the U.S. Census Bureau, or Council for Community and Economic Research and extracted into tables on a private database.

14. The method of claim **1**, wherein the user subjectively ranks the importance of the integrated data, index data, or percentile data returned to the users according to their business needs.

15. A system for extracting, integrating, and indexing disparate data from one or more tables in a database, the system comprising:

a user computer having web-based applications or permanent files located on the user's computer, capable of selecting options related to occupations, industries, and query variables for the same; and

a server computer or a file within the user's computer capable of reading options selected from the user's computer over a Network or within the user's computer and generating a structured language query to parse a relational database having statistical data relating to occupation, industry, and query variables of the same.

16. The system of claim **15**, wherein the server computer presents a series of graphical menus relating to occupation and industry variables to the user's computer over a Network via a graphical user interface.

17. The system of claim **15**, wherein the server computer has at least one send/receive module capable of generating and/or reading a structured language query concerning statistical data associated with industries and occupations and presenting said query to the relational database.

18. The system of claim **15**, wherein the relational database has at least one send/receive module capable of generating and/or reading a structured language query concerning statistical data associated with industries and occupations as presented by the server computer.

19. The system of claim **15**, wherein the relational database has a send/receive module for searching tables having statistical data associated with industries and occupations within the database and returning that data to the send/receive module associated with communicating to the send/receive module of the computer server.

20. The method of claim **1**, wherein integrated data, index values, percentile values and/or any combinations thereof is presented to the user as estimated data for each occupation in each industry for each MSA.

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