Title: METHOD FOR GENERATING A PLAYLIST

FIG. 3
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METHOD FOR GENERATING A PLAYLIST

FIELD OF INVENTION

The present invention relates to a method for generating a playlist comprising at least first media objects and second media objects to be presented simultaneously, to an electronic device adapted for simultaneously presenting at least first media objects and second media objects, and to a computer program.

BACKGROUND OF THE INVENTION

In the context of the present application, the term playlist refers to a list of media objects that are designated to be presented subsequently. In this context, media objects are formed by information comprising characteristics perceivable by human beings with their senses. In particular, media objects may comprise time-dependent characteristics, i.e. may be capable of changing their appearance over time. In particular, a media object can be formed by visual, audible, audio-visual or tactile information which preferably comprises time-dependent characteristics. In some publications, such media objects are called modalities. For example, a media object can be formed by an audio signal which is changing over time such as music, by a video signal, or by a light signal changing over time such as lighting of different colors or other light effects. Media objects can for example be formed by audio files, in particular by audio files representing songs. Examples for audio file types which may form media objects are CD audio files, MP3 audio files, WMA audio files, and the like.

Further examples for media objects are for example breeze (or wind) effects and vibration or rumble effects or other tactile information and respective control signals for such effects. Further, a media object can e.g. comprise more than two modalities such as e.g. a combination of visual and/or audio and/or tactile information.

For example, such media objects may be stored in a database, e.g. a database comprised in a stationary or mobile device, such as a stationary or mobile computer, a PDA (personal digital assistant), a mobile phone, an MP3 player, mobile storage mediums, such as CDs or DVDs, USB storage devices, and the like. Further, such media objects may be provided to be downloadable via a network, such as the internet or a local network.

One of the possible ways of describing an atmosphere which is known in the art is by using so-called mood labels, for example sad, aggressive, tender, and so on. A more generic way of describing an atmosphere by a mood or emotion is by plotting it on a two-dimensional valence-arousal space wherein valence defines the positive/negative aspect (e.g.
happy-sad) and arousal defines the relaxed/excited aspect (e.g. tender/carefree). It should be noted that other methods for mapping a mood or emotion on a two- or higher-dimensional space have been proposed which shall not be excluded. Further, it has been shown that music as well as color of light can also be mapped on this plane or space, respectively.

It has been shown that both music and colored light are essential components of creating an atmosphere in a certain location, for example in a living room. Since a combination of music and colored light can be used to enhance the experience of listening to music, it has been proposed to present music and colored light together. However, there is a demand for methods and systems which allow users to select a combination of music, color of light, and dynamics of the colored light in a convenient manner without necessitating sophisticated operations to be performed by the user and without requiring complicated programming activity by the user.

US 2009/0063971 A1 describes a system and method for presenting media information to users. Media objects such as songs are analyzed to determine a set of three or more objective characteristics that describe the media object. Icons representing the media objects are then presented to a user in a display representing a three-dimensional space in which each dimension corresponds to a different characteristic. The icons are located within the three-dimensional space based on their characteristics. It is described that a user may create a gradient curve for one or more characteristics. These curves may be created by drawing a line through the three-dimensional space or by some other user input.

US 2007/0038671 A1 describes a program and an electronic device adapted to perform actions directed toward generating a playlist for a mobile device. It is described to capture an image, perform image analysis of the image to extract at least one attribute of the image, and use the attribute(s) so extracted to generate a playlist. The image can be a line drawing entered by a user through a user interface, such as a touch pad, coupled to the mobile device. The image is analyzed to extract attributes, such as line thickness and stroke speed, which are subsequently used to generate a playlist.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method for generating a playlist and an electronic device adapted for simultaneously presenting at least first media objects and second media objects which enable a user to generate playlists of at least first media objects and second media objects to be presented simultaneously in an easy way without requiring complicated input schemes.

This object is solved by a method for generating a playlist comprising at least
first media objects and second media objects to be presented simultaneously according to claim 1. The method comprises the steps: loading a plurality of first media objects from a database; assigning coordinates to the first media objects; assigning coordinates to second media objects; generating an at least two-dimensional representation representing first media objects and corresponding second media objects; receiving a user input in form of a trajectory in the at least two-dimensional representation; and generating a playlist comprising subsequent sets of combinations of first media objects and second media objects to be presented simultaneously based on the trajectory. Since, the playlist comprising subsequent sets of combinations of first media objects and second media objects (which are different types of media objects) is generated based on the trajectory resulting from the user input, a playlist comprising two media objects to be presented in combination can be conveniently prepared by a single user input. The at least two-dimensional representation can preferably be presented on a suitable visual user interface such as a display known in the art. Preferably, the visual user interface is also adapted for receiving the user input. This can e.g. be achieved by a touch screen or digital pen interface as the visual user interface. For example, in this case the user input can be in the form of a curve which is drawn on the visual user input device. However, it should be noted that the user input interface is not restricted to these types described before and e.g. other types of pointing devices such as a (computer) mouse can also be used. According to the method, a playlist comprising at least two media objects (first and second media objects) to be presented simultaneously is provided. This means, it is also possible that a playlist comprising more than two media objects (e.g. three or more media objects) to be presented simultaneously is generated. For example, audio information can be used as first media objects, lighting as second media objects, and e.g. tactile information such as wind or vibrations as further media objects.

Preferably, the combinations of first media objects and second media objects present in the playlist are selected depending on the positions of the coordinates of the first and second media objects relative to the trajectory. Thus, a comprehensible way for adding media objects to the playlist is provided which a user will intuitively understand. For example, all the first media objects with coordinates within a defined maximum distance from the trajectory can be added to the playlist. The corresponding second media objects can e.g. be formed by those situated at the same coordinates as the first media objects or by those situated at the corresponding position (e.g. closest distance) of the trajectory.

Preferably, the order of the combinations of the first media objects and second media objects in the playlist is determined by the direction of the trajectory. Thus, the ordering of the media objects in the playlist is determined in a comprehensible way. For
example, combinations of first and second media objects corresponding to the beginning of the trajectory can be arranged at the beginning of the playlist and combinations corresponding to the end of the trajectory can be arranged at the end of the playlist. In this case, the user generate the playlist in a very intuitive and convenient manner.

Preferably, the position of the trajectory in the at least two-dimensional representation, the direction of the trajectory, and at least one further feature of the user input are determined. In this case, further information can also be input via a single user input such that multi-modality (such as for instance a combination of music, color of light, and dynamic light effects) can be controlled conveniently. Preferably, the at least one further feature is at least one of the smoothness of the trajectory, the speed with which the trajectory is generated, and the pressure with which a user input is performed. The smoothness of the trajectory and the speed at which the trajectory is generated can e.g. easily be analyzed using known techniques. This can be performed e.g. when the trajectory is input (virtually) with a computer mouse or the like or when the trajectory is input via a touch screen, touch pad, or digital pen interface, or the like. The pressure with which the user input is performed can e.g. be detected with a suitably adapted touch screen, touch pad, or digital pen interface. For example, position and direction of the trajectory can be used to determine which first and second media objects are added to the playlist and in which order, and the further feature can be used to determine dynamical effects of the first media object or the second media object, or the like. Preferably, dynamic properties of the second media objects are determined by the at least one further feature. This can e.g. be dynamic light effects such as a change in color or brightness, blinking or flashing effects, etc.

Preferably, the media objects in the database are classified according to at least two objective characteristics. The at least two objective characteristics (i.e. corresponding values of these objective characteristics) can conveniently be used as the coordinates which are assigned to the first media objects for the at least two-dimensional representation. Possible objective characteristics which have proved to present satisfactory results with respect to classification of music are e.g. valence (representing the positive/negative aspect, i.e. to which extent a song is happy or sad) and arousal (representing the relaxed/excited aspect, i.e. whether a song is rather tender or carefree). However, other objective characteristics are possible such as sad-happy as a first objective characteristic and slow-fast as a second objective characteristic. A number of other combinations of objective characteristics for classifying media objects such as music (in particular songs) is known in the art.

Preferably, the first media objects are audio files. In particular with respect to
audio files as first media objects, there is a demand to provide methods and devices for generating playlists in a convenient manner. The audio files can for instance be formed by music files such as songs which can be provided in different file types as known in the art.

Preferably, the second media objects are light effects to be displayed together with corresponding first media objects. It has been found out in studies that in particular the combination of music and lighting effects is essential in creating an atmosphere in a certain location.

The object is also solved by an electronic device adapted for simultaneously presenting at least first media objects and second media objects according to claim 10. The electronic device comprises: a memory for storing a database comprising a plurality of first media objects; a visual user interface adapted for displaying information to a user; and a processor adapted to perform the following steps: load a plurality of first media objects from the database; assign coordinates to first media objects; assign coordinates to second media objects; generate an at least two-dimensional representation representing first media objects and corresponding second media objects on the visual user interface; receive a user input in form of a trajectory in the at least two-dimensional representation; and generate a playlist comprising subsequent sets of combinations of first media objects and second media objects to be presented simultaneously based on the trajectory. The electronic device achieves substantially the same advantages which have been described above with respect to the method. It should be noted that at least first media objects and second media objects means that a plurality of media objects (three or more media objects) to be presented simultaneously is also possible.

Preferably, the visual user interface is adapted to function as a user input device. In this case, the visual user interface is a bi-directional user interface which enables both providing information to the user and receiving information from the user. For example, the visual user interface can be realized by a touch screen or digital pen interface. The visual user interface can e.g. be provided on the electronic device itself or separate, e.g. on a remote control.

Preferably, the electronic device comprises a speaker for presenting sound signals as first media objects. In this case, the device is capable of presenting the first media objects to a user without requiring further components. The speaker can e.g. be provided as a built-in speaker or as an external speaker. For example, the speaker can also be realized as head phones or ear phones.

Preferably, the electronic device comprises a light source for presenting light signals as second media objects. In this case, the device is capable of presenting the second
media objects to the user without requiring further components. The light source can for instance be formed by a living color lamp. For generating a well-defined atmosphere in a location, in particular the combination of a speaker for outputting music and of one or more light sources for generating (colored) light effects is relevant.

The object is also solved by a computer program comprising program code for executing, when executed on a digital data processor, the method according to any one of claims 1 to 9. The computer program achieves the advantages which have been described above with respect to the method. Further, the computer program has the advantage that the method can be realized on any hardware comprising a suitable digital data processor such as e.g. a stationary or mobile computer, a PDA, a mobile phone, and the like. Preferably, the computer program is provided as a computer program product, i.e. in a tangible form.

Preferably, the computer program is stored on a machine-readable carrier. Such machine-readable carrier can for instance be formed by a CD, a DVD, a USB-device, or other storage medium known in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

Further features and advantages of the present invention will arise from the detailed description of embodiments with reference to the enclosed drawings.

Fig. 1 schematically shows an electronic device adapted for simultaneously presenting first media objects and second media objects.

Fig. 2 is a schematic illustration of a two-dimensional representation of two objective characteristics on a visual user interface.

Fig. 3 is a schematic illustration of a visual representation of first media objects based on two objective characteristics.

Fig. 4 is a schematic block diagram for explaining a method for generating a playlist.

DETAILED DESCRIPTION OF EMBODIMENTS

An embodiment of the present invention will now be described with reference to the Figures. According to the embodiment which will be explained in the following, the electronic device 1 adapted for simultaneously presenting at least first media objects and second media objects is a mobile device. The electronic device 1 comprises a digital pen interface as a visual user interface 3 which is capable of visually presenting information to a user and of receiving a user input generated by means of a digital pen 6. Thus, according to the invention the visual user interface 3 simultaneously is a user input interface. According to
the embodiment, the visual user interface 3 is integrated to a casing 2 of the electronic device 3 which contains the necessary electronic components such as at least one processor 8, at least one memory 7, and the like. For example, the electronic device 1 is formed by a PDA (personal digital assistant). However, it should be noted that the visual user interface can also be provided separate from the electronic device, e.g. can be integrated to a remote control or provided as a separate device.

The electronic device 1 according to the embodiment is provided with a speaker 4 for presenting first media objects to a user. According to the embodiment, the first media objects are song files which are stored in a database in the electronic device 1 and which can be loaded to be presented via the speaker 4. Although an external speaker is shown in Fig. 1, the speaker 4 may also be built-in or provided as head phones or ear phones. Further, more than one speaker may be provided.

Further, the electronic device 1 is provided with a light source 5. Although only one light source 5 is exemplarily shown in Fig. 1, a plurality of light sources may be provided. Although the light source 5 is schematically shown in Fig. 1 as a separate device connected to the electronic device 1, the light source 5 (or sources) may for instance also be integrated with the electronic device 1. The light source 5 is adapted such that light of different colors can be presented to a user. In particular, different colors can be presented in a time-dependent way. Further, the light source 5 is adapted such that dynamic light effects can be presented to a user. The light source 5 can be a large light source or combination of light sources capable of generating different lighting effects in a location or may be a small light source or combination of light sources (e.g. only illuminating the electronic device 1).

According to the embodiment, the electronic device 1 is particularly adapted for presenting light effects of different color to a user as second media objects.

Thus, according to the embodiment the first media objects are formed by audio files and the second media objects are formed by light effects (e.g. lighting of different colors).

The electronic device 1 is provided with a digital data processor 8 as is known for e.g. portable devices such as PDAs. The digital data processor 8 is adapted such that the process steps which will be described in the following are executed by the digital data processor. For example, this can be realized by the digital data processor 8 being a common general purpose processor and by an appropriate software running on the processor or by the digital data processor 8 being a special purpose hardware particularly adapted for this purpose or by a combination of special purpose and general-purpose or multi-purpose elements. Further, the electronic device 1 is provided with a suitable memory 7 in which the
database of first media objects and possibly other data objects can be stored. The electronic
device 1 is further provided with suitable circuitry known in the art to enable operation of the
electronic device 1.

Operation of the electronic device 1 will be described in the following
referring to the schematic block diagram of Fig. 4.

In a step S1, a plurality first media objects is loaded from the database. In the
embodiment, the first media objects are audio files, in particular songs. Further, in the
embodiment the database is located in the memory 7 in the electronic device 1. However, it is
also possible that the first media objects are loaded from an external database. The first media
objects in the database are classified according to at least two different objective
characteristics. In the example, the first media objects being song files are classified
according to the objective characteristics "valence", i.e. a value how sad or happy,
respectively, the content of the media object is, and "arousal", i.e. a value how relaxed or
excited, respectively, the content of the media object is. This type of classification is well
known in the art and will not be described again.

In a step S2, depending on the "valence" value and on the "arousal" value
assigned to a first media object in the database, coordinates on a two-dimensional plane are
assigned to the first media objects. A first coordinate is assigned according to the "valence"
value and a second coordinate is assigned according to the "arousal" value of the respective
first media object. Thus, the first media objects are mapped on a two-dimensional valence-arousal
plane according to the atmosphere or mood/emotion the content of the first media
objects conveys to a user.

Further, in a step S3, different colors are assigned to the coordinates of the
two-dimensional valence-arousal plane such that a certain color corresponds to each point on
this plane. The colors can e.g. be automatically determined in such a way that specific colors
are assigned to certain moods (i.e. coordinate pairs on the graphical representation such as the
valence-arousal plane) or can e.g. be set by a user according to its preference. Preferably, the
assignment of colors to moods/coordinates on the graphical representation is also stored in
the database.

In step S4, a two-dimensional graphical representation representing the first
media objects and the corresponding second media objects is provided. In the embodiment, a
two-dimensional graphical representation of the audio files according to their valence-arousal
coordinates and of the corresponding colors of light is provided on the visual user interface 3.
An example for such a representation is given in Fig. 3 wherein the black filled and empty
circles 10 indicate different songs which can be found at different locations on the valence-
arousal plane due to the difference in the assigned coordinates. For example, a first media
object (e.g. song) which is classified as "happy" and "relaxed" will be shown in the lower
right quadrant, a first media object which is classified as "sad" and "excited" will be shown in
the upper left quadrant, a first media object classified as "sad" and "relaxed" will be shown in
the lower left quadrant, and a first media object classified as "happy" and "excited" will be
shown in the upper right quadrant. The exact position depends on the assigned "valence" and
"arousal" values. Further, (not shown) in Fig. 3, the background color of the representation
may represent the corresponding color which is assigned to the respective coordinates/first
media objects. However, it should be noted that this is not necessary. Further, it is not strictly
necessary that icons (such as the circles 10 in Fig. 3) corresponding to the individual first
media objects are shown in the representation as long as positions in the representation are
assigned to the first media objects, i.e. as long as a fixed relation between the coordinates in
the representation and first media objects exists.

In step S5, a user input in form of a trajectory in the at least two-dimensional
representation is received. For example, this can be achieved by a user making a curve with a
digital pen in the representation if the visual user interface device 3 is formed as a digital pen
interface. As an alternative, this can e.g. be achieved by making a curve with a finger or other
pointing device in the case of a touch pad. Further, according to an alternative, this can be
done (virtually) by moving a cursor on the representation, e.g. with a mouse or other known
navigation device. An example for such a trajectory in the graphical representation is shown
as the curve C4 in Fig. 3. The curves C1, C2, and C3 in Fig. 2 represent further examples for
trajectories in the representation which can be input by a user.

In step S6, a playlist comprising subsequent sets of combinations of first
media objects and second media objects to be presented simultaneously is generated based on
the trajectory. According to the example, the combinations of first media objects and second
media objects present in the playlist are selected depending on the positions of the
coordinates of the first and second media objects relative to the trajectory. Further, the order
of the combinations of the first media objects and second media objects in the playlist is
determined by the direction of the trajectory. How this is achieved will now be described.

The device 1 is adapted such that all first media objects which are within a
certain distance from the trajectory are added to the playlist. For example, in the example
shown in Fig. 3, all the first media objects (formed by audio files) which are shown by black
filled circles will be added to the playlist when the trajectory C4 is input by a user, since the
representations of these first media objects are located close to the trajectory C4. Further, the
direction D4 in which the trajectory is input by the user is schematically indicated by an
arrow in Fig. 3. The selected first media objects (represented by the filled black circles) are added to the playlist corresponding to their location in the direction of the trajectory C4. For the example of the trajectory C4 in Fig. 3, first rather "sad" songs will be placed in the playlist and the subsequent songs will be increasingly more "happy". All the selected songs will be rather "excited" (and thus not "relaxed").

Further examples of possible trajectories C1, C2, and C3 (and corresponding directions D1, D2, D3) are shown in Fig. 3 (icons indicating the exact position of first media objects are omitted in Fig. 3). According to the trajectory C1, only "sad" first media objects will be selected starting with a neutral value for "arousal" (neither "relaxed" nor "excited") and the subsequent first media objects will be increasingly more "excited". In the case of the trajectory C2, rather "sad" songs will be added first and thereafter increasingly "excited" and more "happy" songs will be added, while at the end of the playlist still increasingly "happy" songs will be added which are decreasingly "excited". In the case of the trajectory C3, only rather "relaxed" songs will be added, starting with rather "sad" songs and moving to increasingly "happy" songs. A skilled person will understand that many other trajectories are possible. Further, although the two objective characteristics "valence" and "arousal" are chosen for the example, a skilled person will understand that many other objective characteristics are also possible (which can be found in the art) for characterizing media objects.

Further, according to the embodiment second media objects to be presented simultaneously with the first media objects are also selected by inputting the trajectory. In the preferred embodiment, the second media objects are colors of lighting to be presented together with the audio files (songs). Referring again to Fig. 4, the first media object which will be placed on the first position in the playlist based on the trajectory C4 is represented by the circle 10°. According to the embodiment, the color of light which is assigned to the coordinates of the circle 10° will be presented together with this first media object. Thus, this color of light (as a second media object) will be placed in the first position of the playlist together with the first media object. On the next position in the playlist, the first media object indicated by the circle 10° will be placed together with the second media object (i.e. another color of light) having the corresponding coordinates. This procedure is repeated for the following first and second media objects in the playlist.

As a result, according to the embodiment, first and second media objects are added to the playlist in a comprehensible manner by a single user input on the visual user interface 3.

According to the preferred embodiment, at least one further feature of the
trajectory (C1, C2, C3, or C4) is determined and exploited for generating the playlist.
According to various realizations, the further feature can e.g. be formed by the smoothness of
the trajectory, the speed with which the trajectory is generated, or the pressure with which a
user input is performed. Of course, more than one further feature can be advantageously
determined and exploited for determining further properties of the playlist or the
simultaneous representation of first and second media objects. According to the preferred
embodiment, dynamic properties of the second media objects (to be presented together with
the corresponding first media objects) are determined by the at least one further feature. In
the specific example which is described, the dynamic properties are dynamic light effects
such as changes in brightness over time, blinking or flashing effects. These dynamic
properties can e.g. be formed by the dynamic aspect of colored light. How this is achieved
will now be described with reference to Fig. 2.

For example, with respect to the trajectory C1 in Fig. 2, a rather jagged
trajectory is given, while with respect to the trajectory C2, a smoother trajectory is given.
According to one example, if the user input is a smooth trajectory, no or only slight dynamics
in the appearance of the second media objects are selected, while, if the user input is a more
jagged trajectory, more dynamics in the appearance of the second media objects are selected.
For example, the smoother the line (e.g. trajectory C2) the less dynamics in the color of light
are selected, while the more jagged the line (e.g. trajectory C1) the more dynamics in the
color of the light are selected. Further, it is also possible that such a feature of the trajectory is
separately analyzed for several sections of the trajectory, e.g. a trajectory beginning with a
jagged section (such that more dynamic effects are selected for the first positions in the
playlist) and thereafter comprising a smoother section (such that less dynamic effects are
selected for the subsequent positions of the playlist). In this way, a large degree of
customization of the playlist by means of a single user input is made available.

As an alternative, e.g. the pressure with which the user input is performed can
be detected. For this alternative, the user input device has to be capable of the detecting the
pressure. For example, in the case of the visual user interface 3 being a combined user output
and input device such as a touch screen or digital pen interface, the thickness of the trajectory
will e.g. depend on the pressure with which the input is performed. This case is schematically
shown for the trajectory C3 in Fig. 2. In the example trajectory C3 the first and last sections
of the trajectory are performed with lower pressure, while the intermediate section is
performed with increased pressure (schematically indicated by the differing thickness of the
trajectory C3). For example, the dynamic effects can be chosen such that the more pressure
the user exerts during input the more dynamics are selected, while with less pressure exerted
less dynamics are selected.

Further, other features of the trajectory can be additionally or alternatively exploited. One further example is the speed with which the trajectory is drawn by the user. For example, a high speed can be used to select more dynamics and a lower speed to select less dynamics. The speed can e.g. be detected with suitable run-time algorithms.

Although it has only been described that the at least one further feature is determined and exploited for determining a further property of the second media object, the at least one further feature can e.g. also be used for selecting a further property of the first media object (such as e.g. the volume in the case of audio files being the first media objects).

Although only a two-dimensional representation based on two objective characteristics has been described, a higher-dimensional representation as for example described in US 2009/0063971 A1 is also possible. A trajectory in such a higher-dimensional representation can e.g. be input in a similar way by means of appropriate navigation means (such as joystick, scrollbars, mouse, etc.) as is known in the art.

Further, although audio files have been described as specific first media objects and light effects have been described as specific second media objects, the invention is not limited to this combination and other combinations of first and second media objects as defined in the introductory portion shall also be encompassed.

Further, although the combination of only first and second media objects to be presented simultaneously has been described with respect to the embodiments, a combination of more (different) media objects to be presented simultaneously is possible. As a non-limiting example, e.g. tactile effects can be added as third media objects to be presented together with the first and second media objects. Preferably, these further media objects are also added to the playlist by exploiting further features of the trajectory input by the user.
CLAIMS:

1. Method for generating a playlist comprising at least first media objects and second media objects to be presented simultaneously; the method comprising the steps:
   loading a plurality of first media objects from a database (S1);
   assigning coordinates to the first media objects (S2);
   assigning coordinates to second media objects (S3);
   generating an at least two-dimensional representation representing first media objects and corresponding second media objects (S4);
   receiving a user input in form of a trajectory (C1, C2, C3, C4) in the at least two-dimensional representation (S5); and
   generating a playlist comprising subsequent sets of combinations of first media objects and second media objects to be presented simultaneously based on the trajectory (S6).

2. Method for generating a playlist according to claim 1, wherein the combinations of first media objects and second media objects present in the playlist are selected depending on the positions of the coordinates of the first and second media objects relative to the trajectory (C1, C2, C3, C4).

3. Method for generating a playlist according to any one of claims 1 to 2, wherein the order of the combinations of the first media objects and second media objects in the playlist is determined by the direction (D1, D2, D3, D4) of the trajectory (C1, C2, C3, C4).

4. Method for generating a playlist according to any one of claims 1 to 3, wherein the position of the trajectory (C1, C2, C3, C4) in the at least two-dimensional representation, the direction (D1, D2, D3, D4) of the trajectory (C1, C2, C3, C4), and at least one further feature of the user input (C1, C2, C3, C4) are determined.

5. Method according to claim 4, wherein the at least one further feature is at least one of the smoothness of the trajectory (C1, C2, C3, C4), the speed with which the trajectory (C1, C2, C3, C4) is generated, and the pressure with which a user input is performed.
6. Method according to any one of claims 4 to 5, wherein dynamic properties of the second media objects are determined by the at least one further feature.

7. Method according to any one of claims 1 to 6, wherein the media objects in the database are classified according to at least two objective characteristics.

8. Method according to any one of claims 1 to 7, wherein the first media objects are audio files.

9. Method according to any one of claim 1 to 8, wherein the second media objects are light effects to be displayed together with corresponding first media objects.

10. Electronic device (1) adapted for simultaneously presenting at least first media objects and second media objects; the electronic device comprising:
   a memory (7) for storing a database comprising a plurality of first media objects;
   a visual user interface (3) adapted for displaying information to a user;
   a processor (8) adapted to perform the following steps:
       load a plurality of first media objects from the database (S1);
       assign coordinates to first media objects (S2);
       assign coordinates to second media objects (S3);
       generate an at least two-dimensional representation representing first media objects and corresponding second media objects on the visual user interface (3) (S4);
       receive a user input in form of a trajectory (C1, C2, C3, C4) in the at least two-dimensional representation (S5); and
       generate a playlist comprising subsequent sets of combinations of first media objects and second media objects to be presented simultaneously based on the trajectory (C1, C2, C3, C4) (S6).

11. Electronic device according to claim 10, wherein the visual user interface (3) is adapted to function as a user input device.

12. Electronic device according to any one of claims 10 or 11, comprising a speaker (4) for presenting audio signals as first media objects.
13. Electronic device according to any one of claims 10 to 12, comprising a light source (5) for presenting light signals as second media objects.

14. Computer program comprising program code for executing, when executed on a digital data processor, the method according to any one of claims 1 to 9.

15. Computer program according to claim 14, stored on a machine-readable carrier.
FIG. 3

FIG. 4
## A. CLASSIFICATION OF SUBJECT MATTER


According to International Patent Classification (IPC) or to both national classification and IPC.

## B. FIELDS SEARCHED

- **G1B**
- **G06F**

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

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>P. KNEES ET AL: &quot;An innovative three dimensional user interface for exploring music collections enriched with metadata information from the web&quot; MM '06 PROCEEDINGS OF THE 14TH ANNUAL ACM INTERNATIONAL CONFERENCE ON MULTIMEDIA, 23 October 2006 (2006-10-23), - 27 October 2006 (2006-10-27) page 8PP, XP002607831 Santa Barbara, California, USA page 18, column 1, paragraph 1 page 20, column 2 - page 21, column 1, paragraph 4.1 page 23, column 2, paragraph 6 figure 4</td>
<td>1-8, 10-12, 14,15</td>
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