Playlistr

A Playlist-creation-tool for Mobile Devices and Touch-tables
Problem Statement

Storage-capacity rises and prices fall:
Bigger song-collection → less overview
Concept

• **Solution: incorporation of a multitouch-surface**
  - Bigger display with high physical resolution
  - Song-pool and current playlist on same screen

• **Complementary use of both devices**
  - **Multitouch-Surface**
    - Main display
    - Playlist organization tool
  - **Mobile device**
    - Hardware keyboard
    - Layout management tool
Related Work (extract)

A. Agarawala, R. Balakrishnan
Keepin’ It Real: Pushing the desktop metaphor with physics, piles and the pen
Related Work (extract)

A. D. Wilson, R. Sarin
BlueTable: Connecting Wireless Mobile Devices on Interactive Surfaces Using Vision-Based Handshaking
Related Work (extract)

O. Hilliges, D. Baur, A. Butz
Photohelix: Browsing, sorting and sharing digital photo collections
Related Work (extract)

T. Hesselmann, S. Flöring, M. Schmitt
Stacked Half-Pie Menus - Navigating Nested Menus on Interactive Tabletops
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Design - Overview
Design - Multitouch-Surface

- Rim
- Screen
- Playlist
- Mobile device
- Multitouch interface
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Design - Mobile Device

[Images of mobile device screens showing various playlist options]

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Mobile Device

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Mobile Device - Details

- **Core functions**
  - Gathering song-data from stored mp3-files (ID3-tags)
  - Song-pool browsing
  - Music player
  - Playlist creation and management (m3u)

- **In combination with multitouch-surface**
  - Song-pool sending
  - Playlist transmission
  - Text-based search-requests via hardware keyboard
  - Play song which is active on touch-table
Multitouch-Surface - Multiring-Interface
Multitouch-Surface

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Multitouch-Surface - Details

- Waits for connection request of mobile device
- Switches over to interactive state if connected
- Basic Functionality
  - Song-pool receiving from mobile device (XML)
  - Playlist transmission (m3u)
  - Playlist assembly and editing
  - Tracking of mobile device location
Multitouch-Surface - Last.fm Covers

- Last.fm cover-download via Last.fm-Lib
- Important for quick recognition!
- Graphical enhancement with mask and png-overlay
- Example: The Beatles - One
Multitouch-Surface - Help service

- Click on this button to switch through the sort-modes.
- Select one of the items on this ring by rotating it into the highlighted area.
- Drag one of the items on this ring a little away to add it to the playlist.
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Conclusion

- Convenient playlist assembly for a mobile device on a multitouch-surface
- Concurrent use of both devices
  - Multitouch-surface: playlist-creation
  - Mobile device: search requests
- Permanent overview of song-pool and playlist
- Interface-alignment by mobile device location
  - Semi-multiuser szenarios
  - Left- and right-handed usage
Future Work

- Search-request for playlist-section on touch-table
- Multitouch support
  - Gestures replace interface elements
  - Gestures as shortcuts
- Extension of Playlistr-concept to other domains than playlist-creation
  - File system browsing
  - File system organization
Without music life would be a mistake.

~Friedrich Wilhelm Nietzsche
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Arrangement Switching

<table>
<thead>
<tr>
<th>Arrangement</th>
<th>First level items</th>
<th>Second level items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artists</td>
<td>Artist name</td>
<td>Song title and album name</td>
</tr>
<tr>
<td>Albums</td>
<td>Album and artist name</td>
<td>Song title</td>
</tr>
<tr>
<td>Genre</td>
<td>Genre name</td>
<td>Song title, album and artist name</td>
</tr>
</tbody>
</table>
Drag-beam Calculation

$$\alpha = \arctan\left(\frac{x_{\text{finger}} - x_{\text{item}}}{y_{\text{finger}} - y_{\text{item}}}\right)$$
### ID3v1

<table>
<thead>
<tr>
<th>Byte(s)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-32</td>
<td>Song title</td>
</tr>
<tr>
<td>33-62</td>
<td>Artist name</td>
</tr>
<tr>
<td>63-93</td>
<td>Album name</td>
</tr>
<tr>
<td>94-96</td>
<td>Track-number</td>
</tr>
<tr>
<td>97-126</td>
<td>Length</td>
</tr>
<tr>
<td>127</td>
<td>Genre</td>
</tr>
</tbody>
</table>
XML-Songpool DTD

<!ELEMENT songs (song)*>  
<!ELEMENT song (number, title, album, artist, length, genre, url)>  
<!ELEMENT number (#PCDATA)>  
<!ELEMENT title (#PCDATA)>  
<!ELEMENT album (#PCDATA)>  
<!ELEMENT artist (#PCDATA)>  
<!ELEMENT length (#PCDATA)>  
<!ELEMENT genre (#PCDATA)>  
<!ELEMENT url (#PCDATA)>
Related Work


Related Work


Related Work


Related Work

