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**1. User Stories:**

**Start an application:**

As a user I want to open the music player application by double clicking the Music Player.exe

Priority: HIGH

**Play a song:**

As a user I want to play a song when I click Play button.

Priority: HIGH

**Stop a song:**

As a user I want to stop a playing the song when I click Stop button.

Priority :HIGH

**Pause a song:**

As a user I want to pause a playing the song when I click Pause button.

Priority :HIGH

**Unpause a song:**

As a user I want to restart a playing the song when I click Play button when a song is paused.

Priority: HIGH



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**Add song to library:**

As a user I want to select a song from the computer and add that song to the library when I click Add Song button.

Priority: HIGH

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**Play song from Control Menu**

As a user I want to play the selected song from by clicking the play option from the control menu or by pressing the “Space” key. If no song is selected the application must play the first song from the library.

Priority: Medium

Priority :HIGH

**Play next song from Control Menu**

As a user I want to skip to the next song in the library by selecting the “Next” option from the Control Menu or by pressing the “Ctrl-RightArrow”

Priority: Low

Priority :HIGH

**Play previous song from the Control Menu**

As a user I want to skip to previous song in the library by selecting the “Previous” option from the Control Menu or by pressing the “Ctrl-LeftArrow”.

Priority: Low

Priority :HIGH

**Go to Current Song**

As a user I want to go to the selected song when I select “Go to current song” from the control menu or press “Ctrl-L”

Priority: Low

**Increase Volume from Control Menu**

As a user I want to increase the volume of the song playing by 5% when I click on the “Increase Volume” button on the Control menu or press the “Ctrl-I”

Priority: Low

Priority :HIGH

**Decrease Volume from Control Menu**

As a user I want to decrease the volume of the song playing by 5% when I click on the “Decrease Volume” button on the Control menu or press the “Ctrl-D”

Priority: Low

Priority :HIGH

**Shuffle**

As a user I want to play a random song from the library when I check the “Shuffle” checkbox from the Control menu.

Priority: Medium

**Repeat**

As a user I want keep repeating the song playing by selecting the “Repeat” button from the Control menu

Priority: Medium

**2. Use Cases**

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| USE CASE 1 | Create a playlist | |
| Goal in Context | User should be able to create a new playlist | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The Music Player application must be open. | |
| Success End Condition | The new playlist must be created. | |
| Failed End Condition | The application is unable to create new playlist | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | Upon selecting “Create playlist” button from menu displayed upon rightclick on the Playlist tree. | |
| DESCRIPTION | Step | Action |
|  | 1 | Select the “Create Playlist” button |
|  | 2 | Open a pop up menu to enter name |
|  | 3 | Select OK |
|  | 4 | Create entry in database |
|  | 5 | Display the playlist in playlist tree |
|  | 6 | Open the new playlist in application |
|  |  |  |
| EXTENSIONS | Step | Branching Action |
|  | 2a. | User enters null value: Show error pop up with respective message. |
|  | 2b. | User enter duplicate value: Show error pop up with respective message |

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| RELATED INFORMATION | Create playlist |
| Priority: | High |
| Frequency | Whenever user needs to create a new playlist (medium). |
| Channels to actors | Interactive (primary actor), Database (secondary actor) |
| Superordinates | Create a song library |
| Subordinates | Add song to playlist, Delete song from playlist, |

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| --- | --- | --- |
| USE CASE 2 | Add songs to playlist | |
| Goal in Context | User should be able to add songs to any existing playlist | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The playlist must exist. | |
| Success End Condition | The song must be added to the playlist | |
| Failed End Condition | User is unable to add song to the playlist | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | Upon selecting the “Add song” button by rightclick on song library or by drag and drop. | |
| DESCRIPTION | Step | Action |
|  | 1 | Select the “Add song to playlist” button |
|  | 2 | A submenu is displayed which contains all the existing playlist |
|  | 3 | Select the playlist to add song |
|  | 4 | Create entry in the database |
|  | 5 | Add song to the playlist |
|  | 6 | Display the song in playlist |
|  |  |  |
| EXTENSIONS | Step | Branching Action |
|  | 4a. | User selects the same song twice: Display pop up showing respective error. |
|  | 4b. | User drags a song not in the song library: Song is first added to the song library |

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| RELATED INFORMATION | Add song to playlist |
| Priority: | High |
| Frequency | Whenever user needs to add a song to playlist(high) |
| Channels to actors | Interactive (primary actor), Database (secondary actor) |
| Superordinates | Create playlist |
| Subordinates | Delete song from playlist |

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| --- | --- | --- |
| USE CASE 3 | Open playlist in new window | |
| Goal in Context | User should be able to open playlist in new window. | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The playlist must exist | |
| Success End Condition | The playlist must open in a new window. | |
| Failed End Condition | The playlist will not open in a new window. | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | Upon selecting “Open in new window” button by rightclick on the playlist. | |
| DESCRIPTION | Step | Action |
|  | 1 | Right click on the playlist name in playlist tree |
|  | 2 | Select the “Open in new window” button. |
|  | 3 | Display playlist in new window with all the songs and all the controls except the tree panel. |
| EXTENSIONS | Step | Branching Action |
|  | 3a. | User selects the same playlist twice: Display the selected playlist without creating new window. |

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| RELATED INFORMATION | Open playlist in new window |
| Priority: | Low |
| Frequency | Whenever user needs to open playlist in new window(rare) |
| Channels to actors | Interactive (primary actor), Database (secondary actor) |

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| USE CASE 4 | Delete playlist | |
| Goal in Context | User should be able to delete the selected playlist | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The playlist must exist | |
| Success End Condition | The playlist must be deleted | |
| Failed End Condition | The playlist will not be deleted. | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | Upon selecting “Delete playlist” button by rightclick on the playlist. | |
| DESCRIPTION | Step | Action |
|  | 1 | Right click on the playlist name in playlist tree |
|  | 2 | Select the “Delete playlist” button. |
|  | 3 | Pop up menu is displayed |
|  | 4 | Select the option |
|  | 5 | Delete the playlist entry in database |
|  | 6 | Delete the playlist along with all the songs from the music player |
| EXTENSIONS | Step | Branching Action |
|  | 4a. | User selects Yes: The application proceeds with deletion. |
|  | 4b | User selects No: No further action takes place. |

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| RELATED INFORMATION | Delete playlist |
| Priority: | High |
| Frequency | Whenever user needs to delete playlist (rare) |
| Channels to actors | Interactive (primary actor), Database (secondary actor) |
| OPEN ISSUES | What happens if user deletes playlist while song in that playlist is playing |
| Superordinates | Create playlist |
| Subordinates |  |

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| USE CASE 5 | Add song to database | |
| Goal in Context | User should be able to add song to database | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The database must exist. | |
| Success End Condition | Song will be added to database | |
| Failed End Condition | Song will not be added to database | |
| Primary,  Secondary Actors | Database  Developer | |
| Trigger | Upon selecting “Add song button” | |
| DESCRIPTION | Step | Action |
|  | 1 | User will select the “Add song button” |
|  | 2 | The application will get path of the file. |
|  | 3 | Query to add that path to the database will be executed. |
| EXTENSIONS | Step | Branching Action |

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| RELATED INFORMATION | Add song to database |
| Priority: | High |
| Frequency | Whenever user needs to add song (high) |
| OPEN ISSUES | What happens if the database does not connect |
| Superordinates | Connect to database. |
| Subordinate | Delete song from database |

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| USE CASE 6 | Delete song from database | |
| Goal in Context | User should be able to delete song from database | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The song must exist in the database | |
| Success End Condition | Song will be deleted to database | |
| Failed End Condition | Song will not be deleted from database | |
| Primary,  Secondary Actors | Database  Developer | |
| Trigger | Upon selecting “Delete song” button | |
| DESCRIPTION | Step | Action |
|  | 1 | User will select the “Delete song button” |
|  | 2 | The application will get the path of the song in database. |
|  | 3 | Query to delete that song from the database will be executed |

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| RELATED INFORMATION | Delete song from database |
| Priority: | Medium |
| Frequency | Whenever user needs to delete a song (medium) |
| Channels to actors | Static (primary actor), database (secondary actor) |
| OPEN ISSUES | What happens if user deletes a song currently playing |
| Superordinates | Add song to database, Connect to database. |
| Subordinates |  |

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| USE CASE 7 | To drop a table | |
| Goal in Context | User should be able to drop a table in database. | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The table should exist in database | |
| Success End Condition | Table will be dropped | |
| Failed End Condition | Table will not be dropped | |
| Primary,  Secondary Actors | Music player application  Database | |
| Trigger | Upon selecting “ Delete playlist” | |
| DESCRIPTION | Step | Action |
|  | 1 | User will select the “Delete playlist” button |
|  | 2 | The application will get name of the table |
|  | 3 | Query will be executed to delete the table |
|  | 4 | Music player will be displayed without that playlist. |

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| RELATED INFORMATION | To drop a table |
| Priority: | Rare |
| Frequency | Whenever user needs to delete playlist (medium) |
| Channels to actors | Static (primary actor), database (secondary actor) |
| Superordinates | Connect to database, Create tables |
| Subordinates |  |

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| USE CASE 8 | Create tables | |
| Goal in Context | The application must create the table | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The database must exist, data specific to the table must be known. | |
| Success End Condition | Table will be created | |
| Failed End Condition | Table creation failed. | |
| Primary,  Secondary Actors | Music player application  Database | |
| Trigger | Upon selecting “Create playlist” | |
| DESCRIPTION | Step | Action |
|  | 1 | User will select the “Create playlist” button |
|  | 2 | Connection to database will be created. |
|  | 3 | The application will obtain the name of the table to be created |
|  | 4 | Query is executed to create the table with that name |

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| RELATED INFORMATION | Create table |
| Priority: | Medium |
| Frequency | Whenever user needs to create playlist (Medium) |
| Channels to actors | Static (primary actor), database (secondary actor) |
| Superordinates | Connect to database |
| Subordinates | Add song to database, Delete song to database |

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| USE CASE 9 | Select variable fields | |
| Goal in Context | User can select the number of fields to be displayed in the title bar | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The right click menu contains the fields user wants | |
| Success End Condition | The field selected by the user is displayed in the column | |
| Failed End Condition | The field selected by the user is not displayed in the column | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | When the user right clicks on the title bar and checks the checkbox that he wants to display | |
| DESCRIPTION | Step | Action |
|  | 1 | User right clicks on the title bar |
|  | 2 | A pop up menu containing all the fields is displayed |
|  | 3 | User selects the number of fields to be displayed |
|  | 4 | The music player displays the fields along with the information from metadata in the columns |
| EXTENSIONS | Step | Branching Action |
|  | 2a | User decides to uncheck (remove from display): The fields are removed from the player |

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| RELATED INFORMATION | Select variable fields |
| Priority: | Rare |
| Frequency | Whenever user needs to display a field or remove a field from display (rare) |
| Channels to actors | Interactive (primary actor) |
| OPEN ISSUES | What happens if user wants to display a field not in the options |

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| USE CASE 10 | Display variable fields | |
| Goal in Context | The music player application makes the column “Album”, “Artists” “Genre” “Year” “Comment” selectable | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The title menu should be displayed by default | |
| Success End Condition | The pop up menu containing the various fields must be displayed | |
| Failed End Condition | The pop up menu containing the various fields is not displayed | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | When the user right clicks on the title bar | |
| DESCRIPTION | Step | Action |
|  | 1 | User right clicks on the title bar |
|  | 2 | A pop up menu containing all the fields is displayed |
|  | 3 | Each item on the menu has a checkbox from which the user can select the number of fields to be displayed |

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| RELATED INFORMATION | Display variable fields |
| Priority: | Rare |
| Frequency | Whenever user needs to display a field or remove a field from display (rare) |
| Channels to actors | Static (primary actor) |
| OPEN ISSUES | What happens if the metadata does not have data for a field |

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| USE CASE 11 | Display the previously selected field | |
| Goal in Context | The music player must display the fields selected by the user every time a new playlist is opened or the application is opened | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The user must have selected the playlists to display | |
| Success End Condition | The fields selected by the user is displayed when the application is re opened | |
| Failed End Condition | The field selected by the user is not displayed in the column when the application is reopened | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | When the user opens the application or creates a playlist | |
| DESCRIPTION | Step | Action |
|  | 1 | User opens the application |
|  | 2 | The music player checks for the saved fields |
|  | 3 | The music player displays the saved fields in column as a session to session |
|  | 4 | User creates a new playlist |
|  | 5 | The music player checks for the saved fields |
|  | 6 | The music player displays the saved fields as a playlist to playlist |
| EXTENSIONS | Step | Branching Action |
|  | 4a | User decides to uncheck a field in the new playlist: The field is not displayed in that playlist but still in the library |

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| --- | --- |
| RELATED INFORMATION | Display the previously selected field |
| Priority: | Medium |
| Frequency | Whenever the user opens an application or creates a new playlist (High) |
| Channels to actors | Static (primary actor) |
| OPEN ISSUES | What happens to fields in playlist if user deletes the field from library |

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| USE CASE 12 | Sorting on the title or artist or year or genre | |
| Goal in Context | The music player must sort the items in the title bar or artist or year or genre in ascending or descending | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The application must display a title bar or artist or year or genre by default | |
| Success End Condition | The items in the title bar or artist or year or genre must be sorted in ascending or descending | |
| Failed End Condition | The items in the title bar or artist or year or genre fail to sorted in ascending or descending | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | When the user selects the sort option on the title bar or artist or year or genre of library or playlist | |
| DESCRIPTION | Step | Action |
|  | 1 | User selects the sort button |
|  | 2 | The application sort the items in ascending if they are in descending |
|  | 3 | The application sorts the items in descending if they are in ascending |
| EXTENSIONS | Step | Branching Action |
|  | 4a | User decides to delete an item from the library or playlist: The rest of the items remain in sort |

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| --- | --- |
| RELATED INFORMATION | Sorting on the title or artist or year or genre |
| Priority: | Medium |
| Frequency | Whenever the user wants to sort in ascending or descending (High) |
| Channels to actors | Interactive (primary actor) |
| OPEN ISSUES | What happens if user delete the column on which sorting is applied |

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| --- | --- | --- |
| USE CASE 13 | Display the timer | |
| Goal in Context | The music player must display two timer bars | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The application must be playing a song | |
| Success End Condition | The timer bars are displayed accurately | |
| Failed End Condition | The timer bars are not displayed accurately | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | When the user starts to play a song | |
| DESCRIPTION | Step | Action |
|  | 1 | User plays a song |
|  | 2 | The application gets the total time of the song from the metadata |
|  | 3 | The application converts this song into H:MM:SS format |
|  | 4 | The application displays two timers on the left and the right side of the progress bar |
|  | 5 | The timer on the left displays the song completed and the timer on the right displays the song left |
| EXTENSIONS | Step | Branching Action |
|  | 4a | User deletes the playing song: The timer is reset to zero |

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| --- | --- |
| RELATED INFORMATION | Display the timer |
| Priority: | High |
| Frequency | Every time user plays a song (High) |
| Channels to actors | Interactive (primary actor) |
| OPEN ISSUES | What happens if time of the song in the metadata is not in proper format |

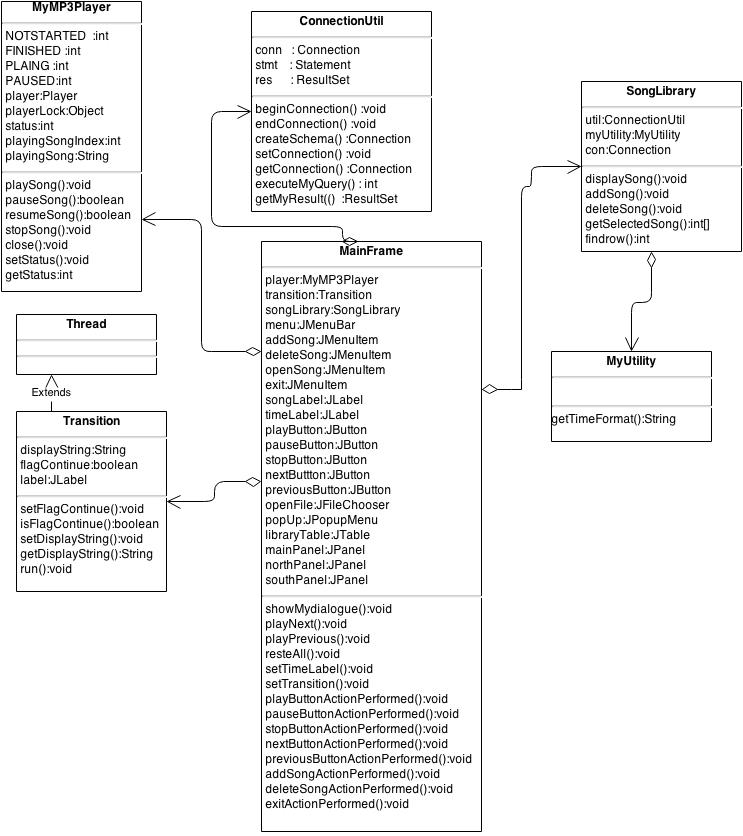
|  |  |  |
| --- | --- | --- |
| USE CASE 14 | Display the progress bar | |
| Goal in Context | The music player must display a progress bar which shows how much of the song is completed | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The application must be playing a song | |
| Success End Condition | The progress bar is displayed accurately | |
| Failed End Condition | The progress bar is not displayed accurately | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | When the user starts to play a song | |
| DESCRIPTION | Step | Action |
|  | 1 | The application shows a blank progress bar |
|  | 2 | User plays a song |
|  | 3 | The application gets the time of the song completed |
|  | 4 | The progress bar displays this time in blue color |
| EXTENSIONS | Step | Branching Action |
|  | 4a | User deletes the playing song: The progress bar is reset to zero |

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| --- | --- |
| RELATED INFORMATION | Display the progress bar |
| Priority: | High |
| Frequency | Every time user plays a song (High) |
| Channels to actors | Static (primary actor), database (secondary actor) |
| OPEN ISSUES | What happens if the song is interrupted in the middle |

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| USE CASE 15 | Display a submenu called Play recent | |
| Goal in Context | The music player must display a submenu which displays the recent 10 songs played. (Shuffle not included) | |
| Scope & Level | Music player  Subfunction | |
| Preconditions | The application must have a control menu | |
| Success End Condition | The Play recent menu displays the songs played recently | |
| Failed End Condition | The Play recent menu does not display the songs played recently | |
| Primary,  Secondary Actors | User  Database | |
| Trigger | When the user moves the mouse over to the Play Recent submenu | |
| DESCRIPTION | Step | Action |
|  | 1 | User plays a song |
|  | 2 | The application adds the song to the Play Recent Menu |
|  | 3 | The user moves the mouse over to the play recent submenu |
|  | 4 | The application displays the 10 recent songs played |
|  | 5 | User selects a song to play from the play recent menu |
|  | 6 | The application plays the selected song |
| EXTENSIONS | Step | Branching Action |
|  | 2a | User has played a song twice: It displays it twice |
|  | 4a | User has played more than 10 songs: It displays the last 10 songs played |

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| RELATED INFORMATION | Display a submenu called Play Recent |
| Priority: | High |
| Frequency | Every time user selects the submenu Play Recent (Medium) |
| Channels to actors | Static (primary actor), database (secondary actor) |
| OPEN ISSUES | What happens if the song in Play recent menu is deleted from the library |

**3. Class Diagram**

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