**Requirements Specification**

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Author: Richard Thomas

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# Version History

|  |  |  |
| --- | --- | --- |
| **Issue** | **Date** | **Change** |
| 0.1 | 14/04/16 | Initial Version |
|  |  |  |

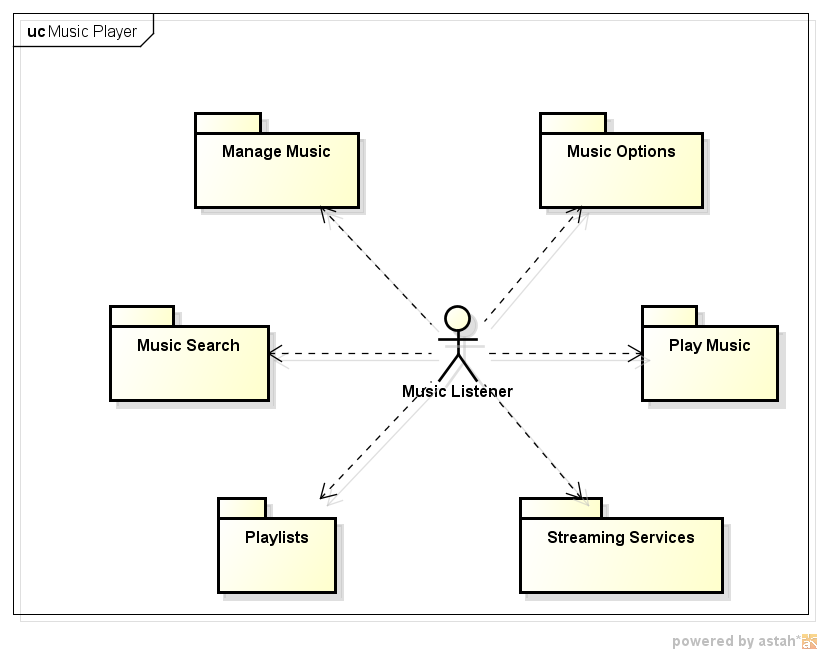
# Introduction

This document provides the requirements for the music player application on an Apple® device such as an iPhone® or iPad®.

# 2.0 Packages

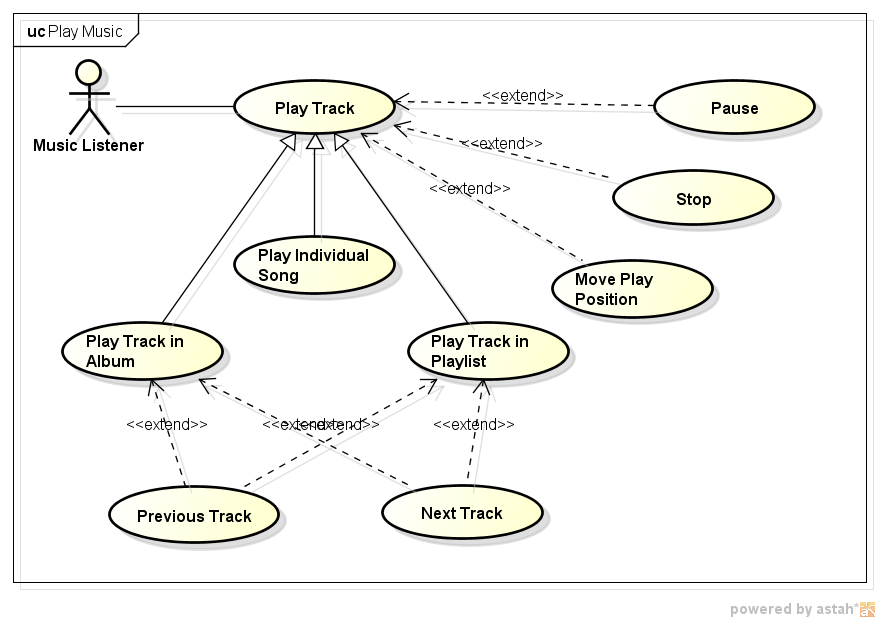
|  |  |
| --- | --- |
| **Package Name** | **Description** |
| Play Music | Allow the music listener to play music in the music player. |
| Streaming Services | Allow the music listener to play music from a streaming service. |
| Playlists | Allow the music listener to create and manage playlists. |
| Music Search | Allow the music listener to find the music they want to play. |
| Manage Music | Manage the music available on the phone for the music player. |
| Music Options | Allow the music listener to adjust player and playback options. |

## 2.1 Package Diagram

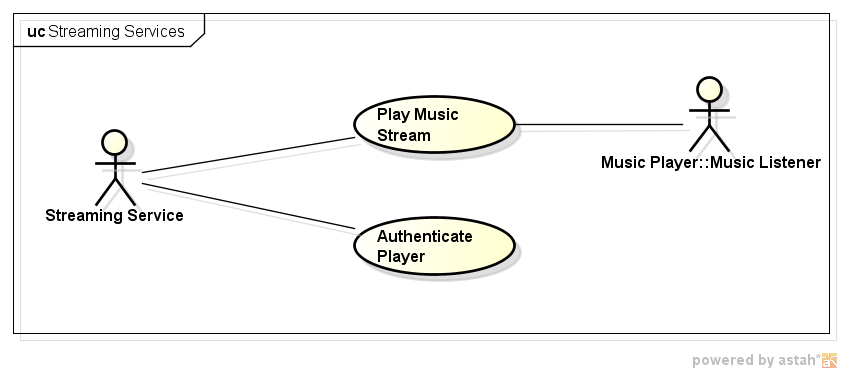


# 3.0 Use Case Diagrams

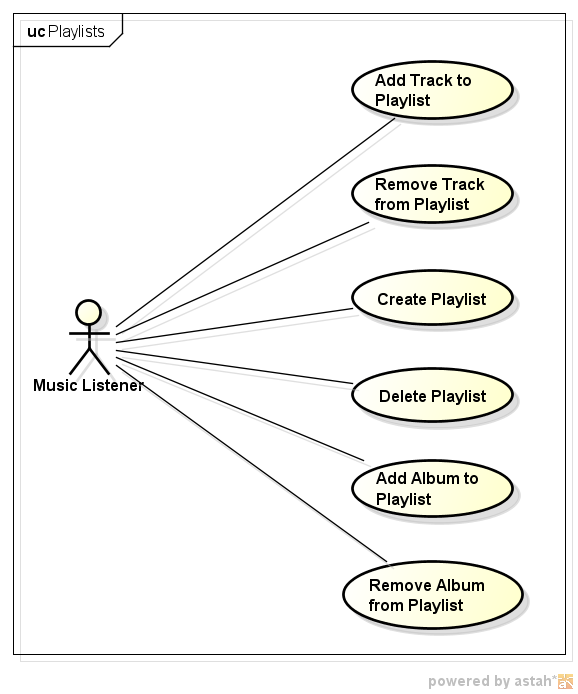
## 3.1 Play Music



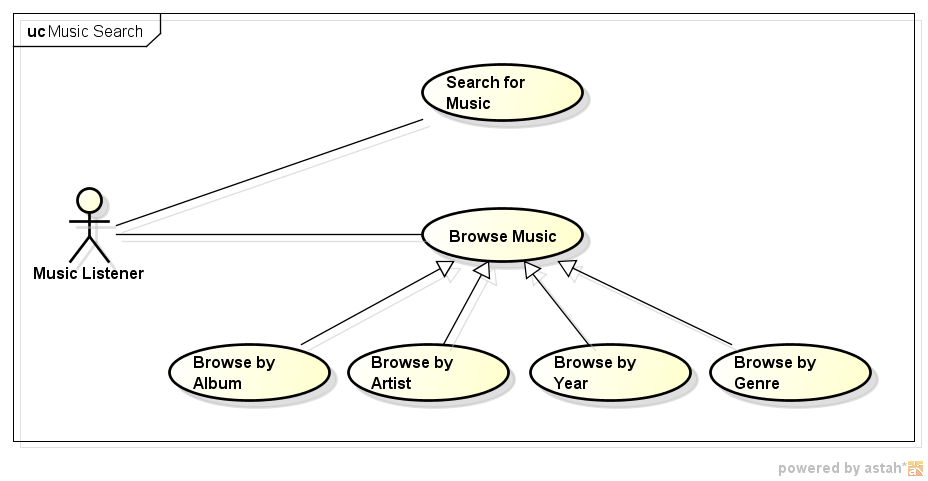
## 3.2 Streaming Services



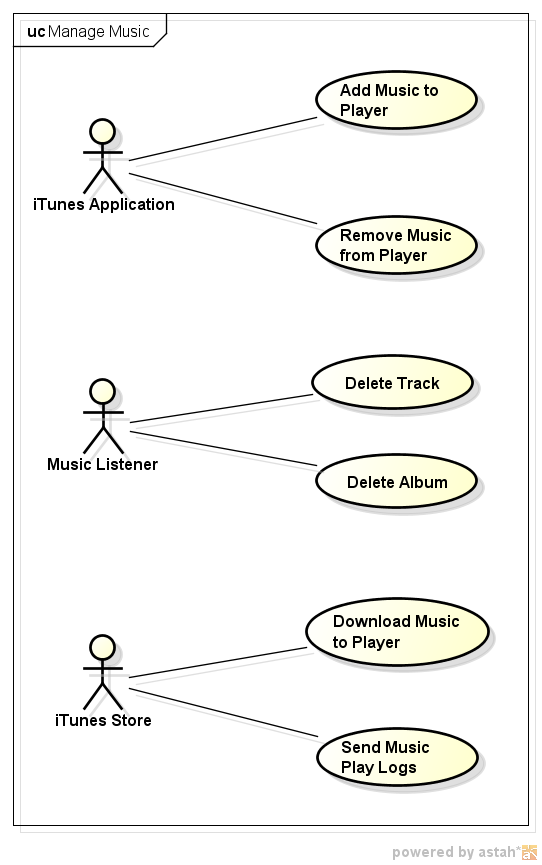
## 3.3 Playlists



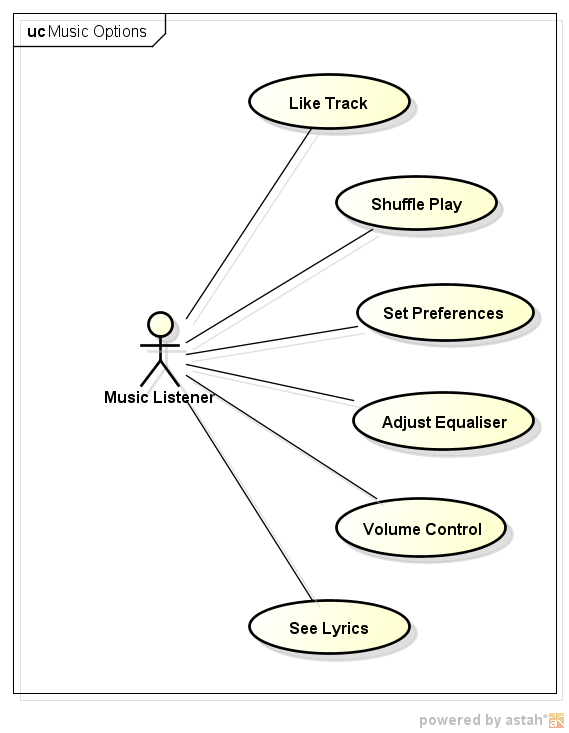
## 3.4 Music Search



## 3.5 Manage Music



## 3.6 Music Options



# 4.0 Actor Descriptions

|  |  |
| --- | --- |
| **Actor Name** | **Description** |
| Music Listener | The person who will use the music player to play music. |
| iTunes Application | The application that allows a user to manage their music library on a PC and sync it to their music player. |
| iTunes Store | The system that sells music and manages subscription services. |
| Streaming Service | A source of music, or other audio programmes, that can be streamed online. |

# 5.0 Use Case Descriptions

## 5.1 Play Track

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | 0.1 | **Date** | 14/04/16 |
| **Package** | Play Music | | |
| **Summary** | Play a music track that has been selected | | |
| **Primary Actor** | Music Listener | | |
| **Secondary Actors** |  | | |
| **Inherits** |  | | |
| **Includes** |  | | |
| **Extension Points** | Pause, Stop, Move Play Position | | |
| **Business Rules** |  | | |
| **Pre-Condition(s)** | A music track is selected. | | |

Typical Sequence of Events

|  |  |
| --- | --- |
| **Actor Stimulus** | **System Response** |
| 1. Select the play option for the current track. | 2.1 The music track is played through the device’s audio system. |
| 3. «extend» *Pause* «extend» *Stop* «extend» *Move Play Position* | 4. |

|  |  |
| --- | --- |
| **Post-Condition(s)** | The music track has been played. |

Alternative Sequences of Events

**Alternative 1: Corrupt File at step 2**

|  |  |
| --- | --- |
| **Actor Stimulus** | **System Response** |
|  | 2.1 Music file can’t be read when playing.  2.2 Provide error message to Music Listener.  2.3 Stop playing track. |

**Alternative 2: Headphones Removed at step 2**

|  |  |
| --- | --- |
| **Actor Stimulus** | **System Response** |
|  | 2.1 Headphones are removed from socket.  2.2 Stop playing track. |
|  |  |

**Alternative 3: Incoming Phone Call at step 2**

|  |  |
| --- | --- |
| **Actor Stimulus** | **System Response** |
|  | 2.1 Phone call is received while track is playing.  2.2 Pause song – fading out music and fading in ring tone. |
| 3.1 Music Listener answers phone call.  3.2 Music Listener terminates phone call. | 4.1 Resume play music track – fading in music. |

**Alternative 4: Phone is Turned Off at step 2**

|  |  |
| --- | --- |
| **Actor Stimulus** | **System Response** |
| 3.1 Music Listener turns phone off (or phone runs out of power). | 4.1 Stop playing track, or pause track, depending on song’s metadata requirement. |
|  |  |

|  |  |
| --- | --- |
| **Priority** | Must Have |
| **Outstanding Issues** |  |
| **Author** | Richard Thomas |
| **Business Owner** | SRA&D Class |
| **Notes** |  |
| **Version History** | Initial version |

## 5.2 Play Track in Album

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | 0.1 | **Date** | 14/04/16 |
| **Package** | Play Music | | |
| **Summary** | Play a music track from an album | | |
| **Primary Actor** | Music Listener | | |
| **Secondary Actors** |  | | |
| **Inherits** | Play Track | | |
| **Includes** |  | | |
| **Extension Points** | Previous Track, Next Track | | |
| **Business Rules** |  | | |
| **Pre-Condition(s)** |  | | |

Typical Sequence of Events

|  |  |
| --- | --- |
| **Actor Stimulus** | **System Response** |
| 1. | **«refine»**  2.2 At the end of the track the next track in the album is played.  2.3 After playing the last track in the album stop playing. |
| 3. «extend» *Previous Track* «extend» *Next Track* | 4. |

|  |  |
| --- | --- |
| **Post-Condition(s)** |  |

Alternative Sequences of Events

**Alternative 1: at step**

|  |  |
| --- | --- |
| **Actor Stimulus** | **System Response** |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **Priority** | Must Have |
| **Outstanding Issues** |  |
| **Author** | Richard Thomas |
| **Business Owner** | SRA&D Class |
| **Notes** |  |
| **Version History** | Initial version |

# 6.0 Activity Diagrams

## 6.1

# 7.0 Non-Funcational Requirements

NFR1 Playing a track must occur in real time with no audio drop outs.

NFR2 Playing a track must not consume more than 65% of the device’s processing capability.

NFR3 The music player must be able to decode audio files in the following formats: AAC, HE-AAC, ALAC, MP3, AA, WAV and AIFF.

NFR4 The music player must be able to decode audio files up to 48KHz in frequency range.

# 8.0 Release Plan

## 8.1 Release One

The first release provides the core music play back functionality and consists of the following use cases:

|  |  |
| --- | --- |
| * Play Track * Play Track in Album * Add Music to Player * Remove Music from Player * Browse Music * Browse by Album | * Volume Control * Pause * Stop * Next Track * Previous Track |

## 8.2 Release Two

The second release provides a more complete music play back experience and provides the ability for the music player to interact directly with the iTunes store. The release consists of the following use cases:

|  |  |
| --- | --- |
| * Download Music to Player * Send Music Play Logs * Play Individual Song * Move Play Position | * Shuffle Play * Browse by Artist * Browse by Year * Browse by Genre |

## 8.3 Release Three

The third release provides playlist functionality and the ability to search for music on the device. The release consists of the following use cases:

|  |  |
| --- | --- |
| * Create Playlist * Delete Playlist * Add Track to Playlist * Remove Track from Playlist | * Add Album to Playlist * Remove Album from Playlist * Play Track in Playlist * Search for Music |

## 8.4 Release Four

The fourth release provides the ability to listen to music from a streaming service. The release consists of the following use cases:

|  |  |
| --- | --- |
| * Play Music Stream | * Authenticate Player |

## 8.5 Release Five

The fifth release allows the music listener to customise the music player to suit their usage. The release consists of the following use cases:

|  |  |
| --- | --- |
| * Like Track * Set Preferences * Adjust Equaliser | * See Lyrics * Delete Track * Delete Album |

# 9.0 Glossary

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Track | A single song file. |
| Album | A set of songs that have been packaged together by an artist. |
| Playlist | A set of songs that have been packaged together by the music listener. |
| Streaming Service | An online music source that provides access to a curated music channel. |

# 10.0 Summary

The requirements described in this document provide the details of what needs to be delivered for the music player on an Apple® device, such as an iPhone® or iPad®.

# 11.0 References

Apple iPod Touch Technical Specifications. http://www.apple.com/ipod-touch/specs/ [Accessed: 14/04/2016].