Derivation of use cases:

REQ1: The user will be able to log into their account.

REQ2: The user will have a playlist created for them based on different news topics.

REQ3: The user will be able to specify genres added to the song list.

REQ4: The user can choose the amount of songs in the list.

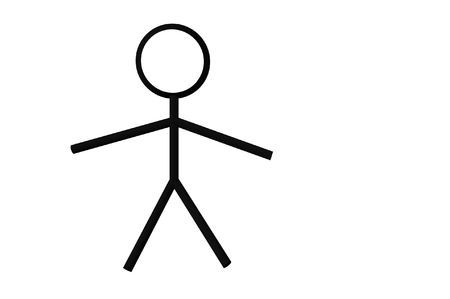
REQ5: The user can listen to the playlist with their account.

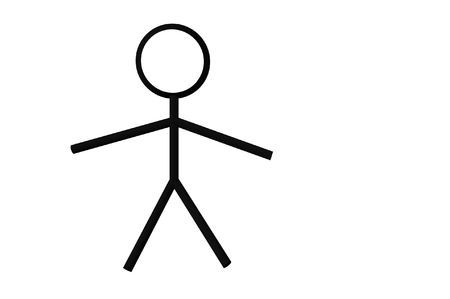
REQ6: Song lengths can be specified by the user.

REQ7: The user will be able to log out of their account.

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| --- | --- | --- |
| Actor | Actors goal | Use case name |
| Initiating actor/User | To log into their account | LogIn (UC-1) |
| Initiating actor/User | To pull keywords from relevant news topics | TopicSearch (UC-2) |
| Initiating actor/User | To use the key words from news topics to search for relevant song titles | SongSearch (UC-3) |
| Initiating actor/User | To use the songs found to create a playlist based upon that day’s news | CreatePlaylist (UC-4) |
| Initiating actor/User | To specify the amount of songs within the playlist | SongQuantity(UC-5) |
| Initiating actor/User | To specify the genre of music to be added to the playlist | SpecifyGenre(UC-6) |
| Initiating actor/User | To specify the length off songs to be added to the playlist | SpecifyLength(UC-7) |
| Initiating actor/User | To listen to the music added to the playlist | Listen(UC-8) |
| Initiating actor/User | To log out of their account | LogOut(UC-9) |
| NewsTopicPull | To pull relevant words from news articles on the internet | TopicSearch (UC-2) |
| SongNewsSearch | To use the keywords to search for songs which relate to that word | SongSearch (UC-3) |
| PlaylistCreation | To create a Spotify playlist using the songs found | CreatePlaylist (UC-4) |
| PlayPlaylist | To play the playlist which has been created on Spotify | Listen(UC-8) |

Use case Diagram:





Traceability Matrix:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| REQ | PW | UC-1 | UC-2 | UC-3 | UC-4 | UC-5 | UC-6 | UC-7 | UC-8 | UC-9 |
| REQ1 | 5 | X |  |  |  |  |  |  |  | X |
| REQ2 | 5 |  | X | X | X |  |  |  |  |  |
| REQ3 | 2 |  | X | X | X |  | X |  |  |  |
| REQ4 | 3 |  | X | X | X | X |  |  |  |  |
| REQ5 | 4 |  | X | X | X |  |  |  | X |  |
| REQ6 | 3 |  | X | X | X |  |  | X |  |  |
| REQ7 | 5 | X |  |  |  |  |  |  |  | X |
| Max PW | | 4 | 5 | 4 | 4 | 2 | 1 | 2 | 5 | 3 |
| Total PW | | 13 | 15 | 9 | 8 | 4 | 2 | 3 | 8 | 10 |

Use case schemas:

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| Use case UC-1 | Login |
| Related Requirements | REQ1, REQ7 |
| Initiating Actor | User |
| Actors Goal | To log into their account |
| Participating Actors | NA |
| Preconditions | The user is not logged into their account |
| Post conditions | The user is logged into their account and can begin a song search |
| Flow of events for main success scenario | User enters email account  User enters password  Email and password matched against spotify database  If correct, user enters system  If wrong, user attempts to start again |

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| Use case UC-2 | TopicSearch |
| Related Requirements | REQ2, REQ3, REQ4, REQ5, REQ6 |
| Initiating Actor | User |
| Actors Goal | To pull key words from relevant news topics |
| Participating Actors | NewsTopicPull |
| Preconditions | The user is logged in but has not searched through news topics for key words |
| Post conditions | The user has a selection of key words from news articles which can be used to find song suggestions |
| Flow of events for main success scenario | User presses button  Button triggers algorithm  Algorithm searches through the news for keywords  Keywords stored |

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| Use case UC-3 | SongSearch |
| Related Requirements | REQ2, REQ3, REQ4, REQ5, REQ6 |
| Initiating Actor | User |
| Actors Goal | To use the key words from news topics to search for relevant song titles |
| Participating Actors | SongNewsSearch |
| Preconditions | The user is logged in and has a selection of key words pulled from prominent news topics but has no songs |
| Post conditions | The user can visualise a list of songs based on topics prominent in the news |
| Flow of events for main success scenario | Keywords from news used to search for songs  Songs found returned |

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| Use case UC-4 | CreatePlaylist |
| Related Requirements | REQ2, REQ3, REQ4, REQ5, REQ6 |
| Initiating Actor | User |
| Actors Goal | To use the songs found to create a playlist based upon that day’s news |
| Participating Actors | PlaylistCreation |
| Preconditions | The user has a selection of songs which have been derived using keywords relevant in the news |
| Post conditions | The songs have been added into a playlist for the user to listen to |
| Flow of events for main success scenario | Songs added to list  List displayed to user |

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| Use case UC-5 | SongQuantity |
| Related Requirements | REQ4 |
| Initiating Actor | User |
| Actors Goal | To specify the amount of songs within the playlist |
| Participating Actors | NA |
| Preconditions | The user has a playlist of songs |
| Post conditions | The user has a defined number of songs |
| Flow of events for main success scenario | User enters quantity of songs  Certain amount of songs added to playlist |

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| Use case UC-6 | SpecifyGenre |
| Related Requirements | REQ3 |
| Initiating Actor | User |
| Actors Goal | To specify the genre of music to be added to the playlist |
| Participating Actors | NA |
| Preconditions | The user has a playlist of songs |
| Post conditions | The user has a playlist of songs of a specific genre |
| Flow of events for main success scenario | User enters genre of songs  Certain genre of songs added to playlist |

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| Use case UC-7 | SpecifyLength |
| Related Requirements | REQ6 |
| Initiating Actor | NA |
| Actors Goal | To specify the length off songs to be added to the playlist |
| Participating Actors | User |
| Preconditions | The user has a playlist of songs which vary in length |
| Post conditions | The user has a playlist of songs which are all the same/similar length |
| Flow of events for main success scenario | User enters length of songs  Certain length of songs added to playlist |

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| Use case UC-8 | Listen |
| Related Requirements | REQ5 |
| Initiating Actor | User |
| Actors Goal | To listen to the music added to the playlist |
| Participating Actors | PlayPlaylist |
| Preconditions | The user can visualise the playlist created for them |
| Post conditions | The user can listen to the songs in the playlist created for them through Spotify |
| Flow of events for main success scenario | User clicks on song in playlist  Song is audibly returned to user |

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| Use case UC-9 | LogOut |
| Related Requirements | REQ1, REQ7 |
| Initiating Actor | User |
| Actors Goal | To log out of their account |
| Participating Actors | NA |
| Preconditions | The user is logged into their account |
| Post conditions | The user is logged out of their account |
| Flow of events for main success scenario | User presses log out button  User logged out of system  User returned to log in page |