**SOFTWARE ENGINEERING PROBLEM SPECIFICATION TABLE**

**NeoTunes - Integrative Task 3**

|  |  |
| --- | --- |
| CLIENT | NeoTunes |
| USER | Audio consumers and productors, NeoTunes Administrators. |
| FUNCTIONAL REQUIREMENTS | **Registration**   1. Register producer 2. Register consumer 3. Register audio    1. Register Song    2. Register Podcast 4. Register playlist   **Interaction with playlists and audios**   1. Edit playlist    1. Rename playlist    2. Add or remove song 2. Share playlist 3. Play audio 4. Buy song   **Showing information**   1. Generate reports    1. Total of plays per type    2. Most played song genre per user and platform    3. Most played podcast category per user and platform    4. Producers’ top 5 information per type    5. Audio’s top 10 information per type    6. Song total sales per genre    7. Best seller song’s total sales |
| CONTEXT OF THE PROBLEM | NeoTunes is a company that wants to get into the audio market with an application that consists of user subscriptions and songs sells through the platform. In NeoTunes, users can be the owner of their songs. |
| NON-FUNCTIONAL REQUIREMENTS | * The playlist identifiers must be generated automatically by a matrix algorithm, formed by 16 digits. * The platform must be adaptable to new types of users of each type. * The platform must be adaptable to add multiple types of audios * The advertisement must include the brands given by the company: Nike, Coca-Cola, and M&Ms. |

**Functional requirements analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF001 – Register Producer | | |
| Summary | It allows the user to create a new producer, either artist or content creator, and add it to the platform. | | |
| Input | Input name | Data type | Selection or repetition condition |
| producerType | int |  |
|  | name | String |  |
|  | pictureUrl | String |  |
| General activities necessary to obtain the results | * Get the information from user input * If producer type is 1 create a new producer of type Artist, else create a consumer of type Content Creator. * Add the new Producer to the platform producer list. | | |
| Result or post condition | * A new producer is registered in the producer list. | | |
| Output | String | status | It will be successful if user entered valid data. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF002 – Register Consumer | | |
| Summary | It allows the user to create a new consumer, either Standard or Premium, and add it to the platform. | | |
| Input | Input name | Data type | Selection or repetition condition |
| consumerType | int |  |
|  | nickname | String |  |
|  | documentId | String |  |
| General activities necessary to obtain the results | * Get the information from user input * If producer type is 1 create a new consumer of type Standard, else create a consumer of type Premium. * Add the new consumer to the platform consumer list. | | |
| Result or post condition | * A new consumer is registered in the producer list. | | |
| Output | String | status | It will be successful if user entered valid data. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF3.1 – Register Song | | |
| Summary | It allows the user to create a new song and add it to an existing artist’s song list. | | |
| Input | Input name | Data type | Selection or repetition condition |
| songName | String |  |
|  | pictureUrl | String |  |
|  | duration | String |  |
|  | genre | int |  |
|  | album | String |  |
|  | saleValue | double |  |
|  | artistName | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Create a new Song with the given input * Search the artist that the song is going to be added to * Add the new song to the searched artist | | |
| Result or post condition | * The song list of the specified producer will be modified with the new song added to it. | | |
| Output | String | status | It will be successful if user entered valid data and the content creator is found. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF3.2 – Register Podcast | | |
| Summary | It allows the user to create a new podcast and add it to an existing artist’s podcast list. | | |
| Input | Input name | Data type | Selection or repetition condition |
| podcastName | String |  |
|  | pictureUrl | String |  |
|  | duration | String |  |
|  | category | int |  |
|  | description | String |  |
|  | contentCreatorName | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Create a new Podcast with the given input * Search the artist that the podcast is going to be added to * Add the new podcast to the searched artist | | |
| Result or post condition | * The podcast list of the specified producer will be modified with the new podcast added to it. | | |
| Output | String | status | It will be successful if user entered valid data and the content creator is found. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF004 – Register Playlist | | |
| Summary | It allows the user to create a new playlist and add it to an existing consumer’s song list, also to the general platform. | | |
| Input | Input name | Data type | Selection or repetition condition |
| consumerName | String |  |
|  | playlstName | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Create a new playlist with the given information, generate a random id, based on a matrix 6x6. * Search the specified consumer * If the consumer is found, add the new playlist to the consumer, add the new playlist to the platform | | |
| Result or post condition | * The playlist list of the specified consumer will be modified with the new song added to it. * The platform playlist list will be modified with a new playlist added to it. | | |
| Output | String | status | It will be successful if user entered valid data and the consumer is found. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF5.1 –Rename Playlist | | |
| Summary | It allows the user to change the name of an existing playlist. | | |
| Input | Input name | Data type | Selection or repetition condition |
| consumerName | String |  |
|  | playlistId | String |  |
|  | newName | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Search the consumer and playlist, if they do not exist yet, return an error status. * Change the name of the selected playlist to the new given by the user. | | |
| Result or post condition | * The name of the selected playlist will be modified and set to the new one. | | |
| Output | String | status | It will be successful if user entered valid data and both consumer and playlist are found. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF5.2 –Add or remove song | | |
| Summary | It allows the user to add or remove an existing song from the selected playlist. | | |
| Input | Input name | Data type | Selection or repetition condition |
| consumerName | String |  |
|  | playlistId | String |  |
|  | songName | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Search the consumer and playlist, if they do not exist yet, return an error status. * Search in the song list the song that matches the name given by the user, if it is not found, return an error message. * Depending on the option given by the user, add or remove the song from the playlist. | | |
| Result or post condition | * The audio list of the playlist will be modified, with a new audio added or an existing audio removed from it. | | |
| Output | String | status | It will be successful if user entered valid data, the user, playlist, and song are found, and the song could be added or removed from the playlist. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF006 – Share playlist | | |
| Summary | It allows the user to get the playlist ID and the matrix that generated it, so that other users can access it. | | |
| Input | Input name | Data type | Selection or repetition condition |
| consumerName | String |  |
|  | playlistId | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Search the consumer and playlist, if they do not exist yet, return an error status. * Get the playlist information (name, id, and matrix) and display it to the user | | |
| Result or post condition | * None | | |
| Output | String | Playlist information | It contains the name, id, and generator matrix of the playlist |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF007 – Play audio | | |
| Summary | It allows the user to play any audio that exists in the catalogue. | | |
| Input | Input name | Data type | Selection or repetition condition |
| consumerName | String |  |
|  | playlistId | String |  |
|  | audioName | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Search the consumer and audio, if they are not found, return an error message. * Depending on the type of user and the history, play just the selected audio or the audio with advertisement. | | |
| Result or post condition | * None | | |
| Output | String | audio | The audios that are going to be played, advertisements, songs, or podcasts. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF008 – Buy songs | | |
| Summary | It allows the user to select a song from the catalogue and add it to his song list. | | |
| Input | Input name | Data type | Selection or repetition condition |
| consumerName | String |  |
|  | songName | String |  |
| General activities necessary to obtain the results | * Get the information from user input * Search the consumer, if it is not found, return an error message. * Show the available songs (catalogue) and get the name of the song from input. * Check if the song exists in the platform, otherwise, return an error message. * Add the new song to the selected user, if he has no place for it, return an error message. | | |
| Result or post condition | * None | | |
| Output | String | audio | It will be successful if user entered valid data, the user and song are found, and the user have enough places. |

|  |  |  |  |
| --- | --- | --- | --- |
| Name or identifier | RF009 – Show statistics | | |
| Summary | It allows the user to check the NeoTunes statistics, either the whole platform or for a selected user. | | |
| Input | Input name | Data type | Selection or repetition condition |
| operation | int | It must be between 1 and 7 |
|  | consumerName (optional) | String |  |
| General activities necessary to obtain the results | * Get the operation from user input * Depending on the selected operation, get the consumerName from input. * Calculate the statistics based on the current catalogue and users * Show the user the results of the calculation | | |
| Result or post condition | * None | | |
| Output | Statistics | String | It will be a different message depending on the selected option |