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**REQUIREMENTS ANALYSIS**

**SOFTWARE ENGINEERING PROBLEM SPECIFICATION TABLE**

| CLIENT | Neotunes |
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| USER | - Producers (artists and content creators).  - Consumers (standard and premium). |
| FUNCTIONAL REQUIREMENTS | R1: Register producer users (artists and content creators).  R2: Register consumer users (standard and premium).  R3: Register songs.  R4: Register podcasts.  R5: Create a playlist.  R6: Edit a playlist.  R7: Share a playlist.  R8: Simulate the playback of a song or podcast (standard and premium).  R9: Buy a song.  R10: Report the total accumulated plays across the platform for each type of audio, song and podcast.  R11: Report the most listened song genre across the platform and its number of plays.  R12: Report the most listened podcast category across the platform and its number of plays.  R13: Report the name and number of total plays for each of the Top 5 artists and Top 5 content creators on the platform.  R14: Report the name, genre or category and total number of plays of each of the members of the Top 10 songs and Top 10 podcasts.  R15: Report the number of songs sold and the total sales value ($) of each genre.  R16: Report the total number of sales and total sales value ($) of the best-selling song on the platform. |
| CONTEXT OF THE PROBLEM | In order to develop software that satisfactorily meets the customer's requirements, the following aspects must be keep in mind:  - Standard type consumer users will only be able to create up to 20 playlists, and will only be able to purchase up to 100 songs.  - Standard users will have to listen to a commercial every 2 songs or before each podcast.  - Store the date of operation when consumer users purchase songs.  - Store the linking date of registered users.  - The design should keep in mind the easy creation of other types of users and audios in the future. |
| NON-FUNCTIONAL REQUIREMENTS | - The client requests that the prototype design keep in mind the future creation of other types of audio.  - The client requests that the prototype design keep in mind the future creation of other types of users. |

**FUNCTIONAL REQUIREMENTS ANALYSIS TABLES**

| Name or identifier | R1: Register producer users (artists and content creators). | | |
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| Summary | Allows the user to register in the system either of the two types of producer type users (artist or content creator). The user is asked to enter the type of producer, the name, a url of a profile photo, the nickname and the document number, the date will be generated by an internal process of the system. | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| optionType | Int | Only if the option entered is out of range (1 to 2). |
| pName | String |  |
| pUrl | String |  |
| pNickname | String | Only if the nickname is already in use. |
| pId | String |  |
| General activities necessary to obtain the results | - Read optionType.  - Check if the optionType is on the range.  - Read pName.  - Read pUrl.  - Read pNickname.  - Read pId.  - Assign the current date in String type by calling a method of the controller class. | | |
| Result or postcondition | If the optionType is within the range, the other data will be requested and a message will be displayed that the user was successfully added, otherwise an error message will be displayed. | | |
| Outputs | Output name | Data type | Selection or repetition condition |
| msgOutRange | String | Only if the optionType is out of range. |
| msgUserRegister | String | Only if the user has successfully registered. |
| msgErrorUserRegister | String | Only if the user did not register successfully. |
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| Name or identifier | R2: Register consumer users (standard and premium). | | |
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| Summary | Allows the user to register in the system either of the two types of consumer users (standard or premium). The user is asked to enter only the type of consumer, the nickname and the document number, the date will be generated by an internal system process. | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| optionType | int | Only if the option entered is out of range (1 to 2). |
| cNickname | String | Only if the nickname is already in use. |
| cId | String |  |
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| General activities necessary to obtain the results | - Read optionType.  - Check if the optionType is on the range.  - Read cNickname.  - Read cId.  - Assign the current date in String type by calling a method of the controller class. | | |
| Result or postcondition | If the optionType is within the range, the other data will be requested and a message will be displayed that the user was successfully added, otherwise an error message will be displayed. | | |
| Outputs | Output name | Data type | Selection or repetition condition |
| msgOutRange | String | Only if the optionType is out of range. |
| msgUserRegister | String | Only if the user has successfully registered. |
| msgErrorUserRegister | String | Only if the user did not register successfully. |
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| Name or identifier | R3: Register songs. | | |
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| Summary | It allows the artist user to register a song, asking for the nickname, the name of the song, the url, the duration, the name of the album, the genre and the cost. | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| aNickname | String | Only if the nickname was not found. |
| aName | String |  |
| aUrl | String |  |
| aDuration | int |  |
| aAlbum | String |  |
| optionGenre | int | Only if the option entered is out of range (1 to 4). |
| aCost | Double |  |
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| General activities necessary to obtain the results | - Read aNickname  - Read aName.  - Read aUrl.  - Read aDuration.  - Read aAlbum.  - Read optionGenre.  - Verify if optionGenre is on range.  - Read aCost. | | |
| Result or postcondition | If all required information fields were filled correctly, it will display a message informing that the song was successfully registered. | | |
| Outputs | Output name | Data type | Selection or repetition condition |
| msgOutRange | String | Only if the optionGenre is out of range. |
| msgAudioRegister | String | Only if the song has successfully registered. |
| msgErrorAudioRegister | String | Only if the song did not register successfully. |
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| Name or identifier | R4: Register podcasts. | | |
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| Summary | Allows the user content creator to register a new podcast. For this operation, it asks the user for its nickname, the name of the podcast, the url, the duration, a description and a category. | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| aNickname | String | Only if the nickname was not found. |
| aName | String |  |
| aUrl | String |  |
| aDuration | int |  |
| aDescription | String |  |
| optionCategory | int |  |
| General activities necessary to obtain the results | - Read aNickname.  - Read aName.  - Read aUrl.  - Read aDuration.  - Read aDescription  - Read optionCategory | | |
| Result or postcondition | If all required information fields were filled correctly, it will display a message informing that the podcast was successfully registered. | | |
| Outputs | Output name | Data type | Selection or repetition condition |
| msgOutRange | String | Only if the optionCategory is out of range. |
| msgAudioRegister | String | Only if the podcast has successfully registered. |
| msgErrorAudioRegister | String | Only if the podcast did not register successfully. |
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| Name or identifier | R5: Create a playlist. | | |
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| Summary | Allows the consumer user to create a new playlist. For this operation it asks the user for his nickname, the name of the playlist, and the type of playlist (only songs, only podcast or both), based on the type of playlist, it will automatically generate a 16-digit code that will serve as an identifier. | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| pOwner | String | Only if the nickname of the owner was not found. |
| pName | String |  |
| optionPlaylist | int | Only if the option entered is out of range (1 to 3). |
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| General activities necessary to obtain the results | - Read pOwner.  - Verify if the nickname (pOwner) exists.  - Get the user's position with the nickname (pOwner).  - Get with the position the type of user.  - Validate if the user can create a new playlist.  - Read pName.  - Read optionPlaylist.  - Verify is optionPlaylist is on range. | | |
| Result or postcondition | If all the required information fields were completed correctly and are valid, a message that the playlist was successfully registered will be displayed on the screen. | | |
| Outputs | Output name | Data type | Selection or repetition condition |
| msgOutRange | String | Only if the optionPlaylist is out of range. |
| msgPlaylistRegister | String | Only if the podcast has successfully registered. |
| msgErrorFullPlaylist | String | Only if the user cannot create new playlists. |
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| Name or identifier | R6: Edit a playlist. | | |
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| Summary | Allows the consumer user to edit a playlist. The editing can be of the name of the playlist, adding a song, adding a podcast, or deleting some audio. The main entries are the user's nickname (pOwner), the name of the playlist and the edit option. The rest of the entries will depend on the option chosen. | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| pOwner | String | Only if the nickname of the owner was not found. |
| pName | String | Only if the name of the playlist was not found. |
| optionEdition | int | Only if the option entered is out of range (1 to 5). |
| pNewName | String |  |
| optionAudio | int | Only if the option entered is out of range. |
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| General activities necessary to obtain the results | - Read pOwner.  - Verify if the nickname (pOwner) exists.  - Read pName.  - Verify if the playlist name (pName) exists.  - Read optionEdition  - Check if optionEdition is on range.  - If the option edition was to edit the playlist name, read pNewName and set the new playlist’s name.  - If the option edition was to add or delete a song or podcast, read optionAudio and execute the process. | | |
| Result or postcondition | If all the required information fields were completed correctly and are valid, a message that the playlist was successfully edited will be displayed. | | |
| Outputs | Output name | Data type | Selection or repetition condition |
| msgOutRange | String | Only if the optionPlaylist is out of range. |
| msgPlaylistEdition | String | Only if the playlist was successfully edited. |
| msgErrorNameNotFound | String | Only if the name of the playlist was not found. |
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| Name or identifier | R7: Share a playlist. | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R8: Simulate the playback of a song or podcast (standard and premium). | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| uNickname |  |  |
| optionSong |  |  |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R9: Buy a song. | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
| cNickname |  |  |
| optionSong |  |  |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R10: Report the total accumulated plays across the platform for each type of audio, song and podcast. | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R11: Report the most listened song genre across the platform and its number of plays. | | |
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| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R12: Report the most listened podcast category across the platform and its number of plays. | | |
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| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R13: Report the name and number of total plays for each of the Top 5 artists and Top 5 content creators on the platform. | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R14: Report the name, genre or category and total number of plays of each of the members of the Top 10 songs and Top 10 podcasts. | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R15: Report the number of songs sold and the total sales value ($) of each genre. | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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| Name or identifier | R16: Report the total number of sales and total sales value ($) of the best-selling song on the platform. | | |
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| Summary |  | | |
| Inputs | Input name | Data type | Selection or repetition condition |
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| General activities necessary to obtain the results |  | | |
| Result or postcondition |  | | |
| Outputs | Output name | Data type | Selection or repetition condition |
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