**SOFTWARE ENGINEERING PROBLEM SPECIFICATION TABLE, IDENTIFYING THE FOLLOWING ITEMS**

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| CUSTOMER | NeoTunes |
| USER | Consumers and producer users |
| FUNCTIONAL REQUIREMENTS | 1. Register users, producers, artists and content creators. 2. Register consumer, standard and premium users. 3. Record songs and podcasts. 4. Create a playlist. 5. Edit a playlist. 6. Share a playlist. 7. Simulate the playback of a song or podcast (standard and premium). 8. Buy a song. 9. Generate reports with the recorded data:    1. For each type of audio, songs, and podcast, report the cumulative total of streams across the platform.    2. Report the most listened song genre (name and number of plays) for a specific user and for the entire platform.    3. Report the most-listened podcast category (name and number of views) for a specific user and for the entire platform.    4. For each of the members of the Top 5 artists and the Top 5 content creators on the platform, report the name and number of total views.    5. For each of the members of the Top 10 songs and the Top 10 podcasts, report the name, genre or category and total number of views.    6. For each genre, report the number of songs sold and the total sales value ($).    7. From the best-selling song on the platform, report the total number of sales and the total sales value ($). |
| CONTEXT OF THE PROBLEM | Due to your extensive experience as a programmer, you have been hired by NeoTunes, a Danish-based company, to develop a prototype software that will allow them to compete in the music streaming and audio content market. The company's business model has two focuses, user subscriptions and the sale of songs through the platform. Unlike other competitors in the market, in NeoTunes users can really own their music catalog. |
| NON-FUNCTIONAL REQUIREMENTS | The prototype must consider the future creation of new user types.  -The prototype must consider the future creation of new audio types. |

**Functional Requirements Analysis Table (Note: One table for each functional requirement)**

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| Name or identifier | Res\_users\_producers | | |
| Summary | Register producer users on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| name | String |  |
| URL\_foto | String |  |
| Fecha\_de\_vinculación | Date |  |
| Guy | Int |  |
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| General activities required to achieve results | The system creates the new producer and save it at the system | | |
| Result or postcondition | Registered user | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Name | String |  |
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| Name or identifier | Reg\_users\_consumers | | |
| Summary | Register consumer users on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| nickname | String |  |
| document | Int |  |
| Fecha\_de\_vinculación | Date |  |
| Guy | Int |  |
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| General activities required to achieve results | The system asociates the new user data with an user object | | |
| Result or postcondition | Registered user | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Name | String |  |
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| Name or identifier | Reg\_audio | | |
| Summary | Register for songsand podcasts on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| Guy | Int |  |
| name | String |  |
| album | String | Type = 0 |
| gender | Int | Type = 0 |
| URL\_caratula | String | Type = 0 |
| duration | Double |  |
| price | double | Type = 0 |
| Número\_de\_reproducciones | Int |  |
| Numero\_de\_ventas | Int | Type = 0 |
|  | description | String | Type = 1 |
|  | category | Int | Type = 1 |
|  | URL\_img | String | Type = 1 |
| General activities required to achieve results | The system saves the data in a new song object and intializes the numer of reproduction and the number of sells. | | |
| Result or postcondition | Recorded audio | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Song | Song | Type = 0 |
| Podcast | Podcast | Type = 1 |
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| Name or identifier | Créate\_playlist | | |
| Summary | Create a consumer user's playlist on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| name | String |  |
| Guy | Int |  |
| Podcast | Int | Type = 0 |
| Song | Int | Type = 1 |
| General activities required to achieve results | The playlist will be registered and it could be shared | | |
| Result or postcondition | Playlist created | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| playlist | Playlist |  |
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| Name or identifier | Edit\_playlist | | |
| Summary | Edit a consumer user's playlist on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| name | String |  |
| Guy | Int |  |
| Podcast | Int | Type = 0 |
| Song | Int | Type = 1 |
| General activities required to achieve results | The system searches, the character that will be edited and makes the changes. | | |
| Result or postcondition | Playlist edited successfully | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| playlist | Playlist |  |
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| Name or identifier | Share\_playlist | | |
| Summary | Share a consumer user's playlist on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| Lista\_de\_reproduccion | Int |  |
| General activities required to achieve results | The system will create a code to the new playlist based on the types of audio files that there are in the playlist (Podcasts or songs). The system do it using a matrix. | | |
| Result or postcondition | Identifier code and generated matrix | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Womb | Int[][] |  |
| Code | Int |  |
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| Name or identifier | Simulate\_reproduction\_audio | | |
| Summary | Simulate the playback of a song or podcast for a consumer user on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| Guy | Int |  |
| Song | Int | Type = 0 |
| Podcast | Int | Type = 1 |
| General activities required to achieve results | The system searches the audio and creates a string for the file selected. | | |
| Result or postcondition | Increase audio playbacks | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Song | Song | Type = 0 |
| Podcast | Podcast | Type = 1 |
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| --- | --- | --- | --- |
| Name or identifier | Buy\_song | | |
| Summary | Buy a song for a consumer user on the platform | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| Song | Int |  |
| General activities required to achieve results | When the user chooses the song the system will save this song in the user account. | | |
| Result or postcondition | Increase the number of sales of the song  Increase the user's catalog | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Song | Song | Type = 0 |
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| Name or identifier | Inf\_acum\_tot\_repr | | |
| Summary | For each type of audio, songs, and podcast, report the cumulative total of streams across the platform. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| Guy | Int |  |
| Song | Int | Type = 0 |
| Podcast | Int | Type = 1 |
| General activities required to achieve results | The system searches the audio and will get the number of reproductions of the audio. | | |
| Result or postcondition | Print total views | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Total\_reprodutions | Int |  |
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| Name or identifier | Inf\_genero\_mas\_repro | | |
| Summary | Report the most listened song genre (name and number of plays) for a specific user and for the entire platform. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| Song | Int |  |
| General activities required to achieve results | The system searches the most repeated genre for a user, it saves the genre and its number of reproductions. | | |
| Result or postcondition | Print the most listened to genre | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Gender | String |  |
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| --- | --- | --- | --- |
| Name or identifier | Inf\_categoria\_mas\_repro | | |
| Summary | Report the most-listened podcast category (name and number of views) for a specific user and for the entire platform. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| User | Int |  |
| Podcats | Int |  |
| General activities required to achieve results | The system searches the most repeated category, save the category and its number of reproductions. | | |
| Result or postcondition | Print the most listened to category | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Category | String |  |
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| Name or identifier | Inf\_top\_productores | | |
| Summary | For each of the members of the Top 5 artists and the Top 5 content creators on the platform, report the name and number of total views. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| guy | Int |  |
| General activities required to achieve results |  | | |
| Result or postcondition | Print the name and number of total views | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Name | String |  |
| Num\_repr\_totales | Int |  |
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| --- | --- | --- | --- |
| Name or identifier | Inf\_top\_audio | | |
| Summary | For each of the members of the Top 5 artists and the Top 5 content creators on the platform, report the name and number of total views. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| guy | Int |  |
| General activities required to achieve results |  | | |
| Result or postcondition | Show on-screen statistics | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Name | String |  |
| Gender | String | Type = 0 |
| Category | String | Type = 1 |
|  | Num\_total\_repr | Int |  |

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| --- | --- | --- | --- |
| Name or identifier | Inf\_x\_genero\_ventas\_y\_valot\_total | | |
| Summary | For each genre, report the number of songs sold and the total sales value | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| Gender | Int |  |
| General activities required to achieve results |  | | |
| Result or postcondition | Show on-screen statistics | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Valor\_total\_ventas | Int |  |
|  | Num\_total\_repr | Int |  |

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| --- | --- | --- | --- |
| Name or identifier | Inf\_cancion\_mas\_vendida\_ventas\_y\_valot\_total | | |
| Summary | From the best-selling song on the platform, report the total number of sales and the total sales value. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
|  |  |  |
| General activities required to achieve results |  | | |
| Result or postcondition | Show on-screen statistics | | |
| Outputs | Entry name | Data type | Selection or repetition condition |
| Valor\_total\_ventas | Int |  |
|  | Num\_total\_repr | Int |  |