**SPECIFICATION TABLE OF THE SOFTWARE ENGINEERING PROBLEM, showing the following elements**

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| CLIENT | Neo Tunes Company |
| USER | Developers (User) |
| FUNCTIONAL REQUIREMENTS | 1. Register producer users. 2. Register consumer users. 3. Register songs 4. Register podcasts. 5. Create a playlist. 6. Edit a playlist. 7. Share a playlist. 8. Simulate playback of a song or podcast. 9. Buy a song. 10. Report the total accumulated reproductions on the entire platform. 11. Inform the most listened to song genre for a specific user and for the entire platform and its number of reproductions. 12. Inform the most listened to podcast category for a specific user and for the entire platform. 13. Inform the name and number of total reproductions of each one of the members of the Top 5 artists and the Top 5 content creators. 14. Inform the name, genre or category and total number of reproductions of each of the members of the Top 10 songs and the Top 10 podcast 15. Report the number of songs sold and the total sales value ($) of each genre. 16. Report the total number of sales and the total sales value ($) of the best-selling song on the platform. |
| CONTEXT OF THE PROBLEM | Neo Tunes, a Danish-based company, wants a software prototype that will allow them to enter the market for streaming music and audio content. The company's business model has two focuses: user subscriptions and the sale of songs through the platform. In the app, users can truly own their music catalog. |
| NON-FUNCTIONAL REQUIREMENTS | Maintainability:  - The company anticipates the evolution and dynamic growth of its platform, which is why it requests that the design of the prototype contemplate the future creation of other types of users, both consumers and producers.  - Future inclusion of other types of audios should be considered. |

**Functional Requirements Analysis Table**

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| Name or identifier | **R-F1:** Register a Producer User (Artist; Content Creator) | | |
| Resume | It allows registering users through their nickname (player's unique name), id, registered date, and image URL. Depending on its type (Artist; Content Creator) | | |
| Inputs | Input Name | Data Type | Choice or Repeat Condition |
| nickName | String | If the nickname is available |
| id | String |  |
| date | String | YYYY-MM-DD |
| imageURL | String |  |
| acumulatedPlaybacks | Double | Default: 0 |
| acumPlaysByConsumer | Double | Default: 0 |
| General activities necessary to obtain the results | The nickname is not repeated. | | |
| Result or postcondition | User registered successfully | | |
| Outputs | Input Name | Data Type | Choice or Repeat Condition |
| Message | String | User registered successfully |

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| Name or identifier | **R-F2:** Register a Consumer User (Standard; Premium) | | |
| Resume | It allows registering users through their nickname (player's unique name), id, registered date, and image URL. Depending on its type (Standard; Premium) | | |
| Inputs | Input Name | Data Type | Choice or Repeat Condition |
| nickName | String | If the nickname is available |
| id | String |  |
| date | String | YYYY-MM-DD |
| General activities necessary to obtain the results | The nickname is not repeated. | | |
| Result or postcondition | User registered successfully | | |
| Outputs | Input Name | Data Type | Choice or Repeat Condition |
| Message | String | User registered successfully |

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| **Name or identifier** | **R3. Register songs.** | | |
| Resume | The system must allow to register a song. For this, the nickname of the producer artist, the song name, album, genre, URL with the album cover to which it belongs, duration and sale value (in dollars) are considerate. The system displays a confirmation or error message in the register. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| name | String | the song must be not registered in the system |
| album | String |  |
| genre | int |  |
| urlAlbumCover | int |  |
| duration | double |  |
|  | saleValue | double |  |
| **General activities necessary to obtain the results** | 1. Read the nickname of the content creator 2. Verify the nickname 3. Read the name 4. Verify that the song is not registered in the system 5. Read the album 6. Read the genre 7. Read the url album cover 8. Read the duration 9. Read the sale value 10. Add song to the list of registered songs 11. Show confirmation message | | |
| **Result or postcondition** | The song is registered. The system displays a message on the screen confirming this or showing the error that occurred in the process. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |
| **Name or identifier** | **R4. Register podcasts.** | | |
| **Summary** | The system must allow to register a podcast. For this, the nickname of the content creator, name of the podcast, description, category, URL with its distinctive image and duration are considerate. The system displays a confirmation or error message in the register. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| nickname | String | The nickname must be registered on the platform |
| name | String | the podcast must be not registered in the system |
| description | String |  |
| category | int |  |
| urlImage | String |  |
| duration | double |  |
| **General activities necessary to obtain the results** | 1. Read the nickname of the content creator 2. Verify the nickname 3. Read the name 4. Read the description 5. Read the category 6. Read the url image 7. Read the duration 8. Add podcast to the list of registered podcasts 9. Show confirmation message | | |
| **Result or postcondition** | The podcast is registered. The system displays a message on the screen confirming this or showing the error that occurred in the process. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |

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| **Name or identifier** | **R5. Create a playlist** | | |
| **Summary** | The system must allow to create a playlist. For this, the nickname of the user, the playlist name, and the audios list (podcasts or songs) are considerate. The system automatically generates a matrix 6x6 and the playlist identifier code. Finally, the system displays a confirmation or error message in the creation. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| nickname | String | The nickname must be registered on the platform |
| Usernick | String | The user must be registered on the platform |
| audios | ArrayList<Audio> | The audios of the list (songs and podcasts) must be registered on the platform |
| **General activities necessary to obtain the results** | 1. Read the name 2. Read the name of the audios to add 3. Verify that the audios be registered on the platform 4. Read the list of audios 5. Generate Matrix 6. Generate playlist code 7. Create playlist 8. Show confirming message | | |
| **Result or postcondition** | The playlist is registered. The system displays a message on the screen confirming this (including the autogenerated code) or showing the error that occurred in the process. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |

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| **Name or identifier** | **R6. Edit a playlist.** | | |
| **Summary** | The system must allow the user to modify a previously created playlist. Once modified, it shows a message that contains the matrix of the playlist and the respective code or shows the reason why the playlist could not be edited. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| playlistCode | String |  |
| audiosToAdd | ArrayList<Audio> |  |
| audiosToRemove | ArrayList<Audio> |  |
| **General activities necessary to obtain the results** | 1. Read the playlist code 2. Verify that the playlist is registered on the platform 3. Read the names of the audios (to add and to remove) 4. Verify that the audios be registered on the platform (to add and to remove) 5. Modify the playlist with the new songs and podcasts 6. Update playlist code 7. Show message | | |
| **Result or postcondition** | The playlist is edited. The system displays a message on the screen confirming this or showing the error that occurred in the process. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |

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| **Name or identifier** | **R7. Share a playlist.** | | |
| **Summary** | The system must allow the user to share a previously created playlist to another person. For this, both the matrix and the resulting identifier code must be displayed through the user interface each time the user decides to share the list. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| UserNick | String | The user must be registered on the platform |
| nickname | String | The nickname must be registered to an user on the platform |
| playlistName | String |  |
| **General activities necessary to obtain the results** | 1. Read the playlist name 2. Verify that the playlist is registered on the platform 3. Show the matrix and the Playlist Code | | |
| **Result or postcondition** | The system shows the matrix and the code that leads to the playlist. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |

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| **Name or identifier** | R8. **Simulate playback of a song or podcast** | | |
| **Summary** | The system displays a timer on the screen with a message that the audio is playing to simulate playback. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| audioSelected | int |  |
| UserNick | String | The user must be registered on the platform |
| stopSimulation | int | Only if the audio is playing |
| **General activities necessary to obtain the results** | 1. Read the selected audio option. 2. Show the message with the simulation. | | |
| **Result or postcondition** | N/A | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| N/A | N/A | N/A |

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| **Name or identifier** | **R9. Buy a song.** | | |
| **Summary** | The system allows the consumer user to buy a song. For this, the nick name of the user, the name of the song. Finally, the system displays a confirmation or error message on the purchase. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| nickname | String | The user must be registered on the platform |
| songName | String | The song must be previously registered on the platform |
|  |
| **General activities necessary to obtain the results** | 1. Read the nickname 2. Verify the nickname 3. Read the song name 4. Verify that the name of the typed song is registered on the platform 5. Show a message asking the user if they want to confirm the purchase 6. Read confirming 7. Add song to user 8. Show confirmation message | | |
| **Result or postcondition** | The song is linked to the user who bought it. The system displays a message on the screen confirming this or showing the error that occurred in the process. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |

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| **Name or identifier** | **R10. Report the total accumulated reproductions on the entire platform.** | | |
| **Summary** | The system must allow to show the accumulated total of reproductions on the platform. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| N/A | N/A | N/A |
| **General activities necessary to obtain the results** | 1. Count how many times some audio content has been played on the platform 2. Show the number obtained in the previous procedure. | | |
| **Result or postcondition** | The system displays a message with the number of total reproductions on the entire platform. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| counter | int |  |
| message | String |  |

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| **Name or identifier** | **R11. Inform the most listened to song genre for a specific user and for the entire platform and its number of reproductions.** | | |
| **Summary** | The system must report the most repeated genre of music by a consumer user and its number of reproductions. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| nickname | String | The user must be registered on the platform |
| **General activities necessary to obtain the results** | 1. Read the nickname 2. Verify the nickname 3. Search the most played genre of the user 4. Search the number of reproductions of the genre most played for the user 5. Show a message with the founded information | | |
| **Result or postcondition** | The system displays a message with the genre most played by the user and its number of plays. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |

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| **Name or identifier** | **R12. Inform the most listened podcast category for a specific user and for the entire platform.** | | |
| **Summary** | The system must allow reporting the most listened to podcast category for a specific user and for the entire platform. For this, the nick name of the user is considered. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
|  | nickname | String | The user must be registered on the platform |
| **General activities necessary to obtain the results** | 1. Read the nickname 2. Search the user 3. Search the most listened podcast category of the user 4. Search the most listened podcast category of the platform 5. Show founded information | | |
| **Result or postcondition** | The system displays a message with the most listened to podcast category for a specific user and for the entire platform. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |
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| **Name or identifier** | **R13. Inform the name and number of total reproductions of each one of the members of the Top 5 artists and the Top 5 content creators.** | | |
| **Summary** | The system must allow inform the name and number of total reproductions of each one of the members of the Top 5 artists and the Top 5 content creators. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| N/A | N/A | N/A |
| **General activities necessary to obtain the results** | 1. Calculate top five of artist 2. Calculate top five of content creators 3. Show the names and the reproductions of artists top five 4. Show the names and the reproductions of content creators top five | | |
| **Result or postcondition** | The system displays a message with the name and number of total reproductions of each one of the members of the Top 5 artists and the Top 5 content creators. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |
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| **Name or identifier** | **R14. Inform the name, genre or category and total number of reproductions of each of the members of the Top 10 songs and the Top 10 podcast.** | | |
| **Summary** | The system must allow inform the name, genre or category and total number of reproductions of each of the members of the Top 10 songs and the Top 10 podcast. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| N/A | N/A | N/A |
| **General activities necessary to obtain the results** | 1. Calculate top ten of songs per total number of reproductions 2. Calculate top ten of podcasts per total number of reproductions 3. Display information | | |
| **Result or postcondition** | The system displays a message with the name, genre or category and total number of reproductions of each of the members of the Top 10 songs and the Top 10 podcast. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |
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| **Name or identifier** | **R15. Report the number of songs sold and the total sales value ($) of each genre.** | | |
| **Summary** | The system must allow inform the number of songs sold and the total sales value ($) of each genre. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| N/A | N/A | N/A |
| **General activities necessary to obtain the results** | 1. Count the number of songs sales per category 2. Calculate the total sales value per category 3. Display information | | |
| **Result or postcondition** | The system displays a message with the number of songs sold and the total sales value ($) of each genre. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |
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| **Name or identifier** | **R16. Report the total number of sales and the total sales value ($) of the best-selling song on the platform.** | | |
| **Summary** | The system must allow inform the total number of sales and the total sales value ($) of the best-selling song on the platform. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| N/A | N/A | N/A |
| **General activities necessary to obtain the results** | 1. Search the best-selling song on the platform 2. Display a message with the total sales of the song | | |
| **Result or postcondition** | The system displays a message with the total number of sales and the total sales value ($) of the best-selling song on the platform. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| message | String |  |
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