**SOFTWARE ENGINEERING PROBLEM SPECIFICATION TABLE, identifying the following elements**

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| CLIENT | A company call Neotunes of streaming music and audio content |
| USER | Admins, consumers, and producers |
| FUNCTIONAL REQUIREMENTS | 1. Register producers (artist and content creators) 2. Register consumers (standard and premium) 3. Register audio content (music and podcast) 4. Create playlist 5. Edit playlist 6. Share playlist 7. Simulate audio content playback 8. Buy song 9. Generate report    1. Total song and podcast plays    2. The most listened song genre or podcast category    3. Top 5 artists and content creators    4. Top 10 songs and podcast    5. The number of songs sold    6. The best-selling song |
| CONTEXT OF THE PROBLEM | A Danish company wants to create an app od streaming called NeoTunes, where the users can upload content and play it. They also want to integrate purchases and advertising in the application |
| NON-FUNCTIONAL REQUIREMENTS | RNF1: the prototype design must contemplate the future creation of other types of audios.    RNF2: the prototype design must contemplate the future creation of other types of users, both consumers and producers. |

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

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| Name or identifier | Register producer (artist and content creator) | | |
| Abstract | The program takes the necessary data from the producer and saves it in the database | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| nickname | string | Nickname does not exit |
| Join Date | Date |  |
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| General activities necessary to obtain the results | First the option to register an artist or content creator and then save the data in the system | | |
| Result or postcondition | The producer user has successfully registered | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Producer registered |
| error | string | Failed to register Producer |

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| --- | --- | --- | --- |
| Name or identifier | Register customers (standard and premium) | | |
| Abstract | The program takes the data entered from the customer and saves it in the system | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| nickname | string |  |
| identification | string | The identification does not exist |
| Join Date | Date |  |
| General activities necessary to obtain the results | The system will ask to choose the option to register a standard or premium and the data will be taken to save them in the system | | |
| Result or postcondition | The consumer user has successfully registered | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Consumer registered correctly |
| error | string | Failed to register consumer |

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| --- | --- | --- | --- |
| Name or identifier | Register audio content (song and podcast) | | |
| Abstract | The program takes the necessary data from the audio content and saves it in the database | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| title | String |  |
| duration | chronological Format |  |
| album | String | If the audio is a song |
| genre | Enum: Genre (int) | If the audio is a song |
| Album Picture URL | String | If the audio is a song |
| price | double | If the audio is a song |
| description | String | If the audio is a song |
| category | Enum: Category (int) | If the audio is a song |
| podcast Picture URL | String |  |
| General activities necessary to obtain the results | Ask if you want to register a song or podcast and then the data will be taken to save them in the system | | |
| Result or postcondition | The audio content user has successfully registered | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Audio content has been registered |
| error | string | Failed to register audio |

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| --- | --- | --- | --- |
| Name or identifier | Create playlist | | |
| Abstract | The program allow a consumer user to create a playlist | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| Playlist Title | string | The title doesn't exist yet |
| Audio Content Title | string | The audio content exists |
| General activities necessary to obtain the results | To make a validation about the consumer user the program will ask for his name, and the audio content will be registered with the name that the user enters | | |
| Result or postcondition | The playlist has been created successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Playlist registered correctly |
| error | string | Failed to register playlist |

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| --- | --- | --- | --- |
| Name or identifier | Edit playlist | | |
| Abstract | The program allow a consumer user to edit a playlist | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| Playlist Title | string | The title exists |
| Audio Content Title | string | The audio content exists in the playlist |
| General activities necessary to obtain the results | To make a validation about the consumer user the program will ask for his name. Then he is going to enter the playlist that want to edit and the title of the audio content that will be add to the playlist or delete | | |
| Result or postcondition | The playlist has been edited successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Playlist edited successfully |
| error | string | Failed to edit playlist |

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| --- | --- | --- | --- |
| Name or identifier | Share playlist | | |
| Abstract | The program allows sharing a playlist | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| Playlist Title | string | The title exists |
| General activities necessary to obtain the results | To make a validation about the consumer user the program will ask for his name and is going to be ask for the title of the playlist, to create a 6x6 matrix with random numbers from 0 to 9 and from that a numerical code will be generated to be able to share the playlist | | |
| Result or postcondition | The code to share the playlist has been generated successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | The code to share the playlist has been generated |
| error | string | Failed to generate playlist code |

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| --- | --- | --- | --- |
| Name or identifier | Simulate audio content playback | | |
| Abstract | The system must allow the simulated playback of audio content | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| Playlist Title | string | if the audio content is in a playlist |
| Audio Content Title | string | The audio content exists in the playlist |
| General activities necessary to obtain the results | The user will be asked for their name to validate if they are a consumer. They will be asked for the title of the playlist, in case it contains the audio content, and the name of the audio content it will simulate a reproduction of the audio | | |
| Result or postcondition | The audio content has been successfully simulated | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Playback of audio content has been simulated |
| error | string | Failed to simulate playback of audio content |

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| --- | --- | --- | --- |
| Name or identifier | Buy song | | |
| Abstract | The program allows the consumer user to buy a song | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| Audio Content Title | string | The audio content exists in the playlist and the user has not yet purchased it |
| General activities necessary to obtain the results | To make a validation about the consumer user the program will ask for his name and will be asked for the title of the song to make the payment | | |
| Result or postcondition | The song was bought successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | the song was bought successfully |
| error | string | Failed to buy the song |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of total music and podcast plays | | |
| Abstract | The system must allow reporting the number of playbacks that the audio content has | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| Title Audio Content | string | The audio content exists |
| General activities necessary to obtain the results | With the title of the audio content, the program will search the number of times the playback has been simulated | | |
| Result or postcondition | The report has been successfully displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Report has been displayed |
| error | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of the most listened song genre or podcast category | | |
| Abstract | The system will report the most listened song genre or podcast category along with the number of plays | | |
|  | Input name | Datatype | Selection or repetition condition |
| genre | Enum: Genre | If audio content is song |
| category | Enum: Category | If audio content is podcast |
| General activities necessary to obtain the results | Program will ask what audio content you want to consult to get the report. Then the playback will be counted in each genre if is song or in category if it is a podcast and the audio with the highest number of plays will be displayed. | | |
| Result or postcondition | The report has been successfully deployed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Report has been displayed |
| error | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of top 5 artist and content creators | | |
| Abstract | The system will report the top 5 artists and content creators along with the total number of plays | | |
| General activities necessary to obtain the results | The list of artists and content creators will be taken and reordered into two lists: one for artist and the other for content creators. Considering the total of plays in case of the artist and the total of podcast views in case of the content creator. They will be ordered from highest to lowest and only the top 5 artists and content creators will be displayed. | | |
| Result or postcondition | The report has been successfully deployed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Report has been displayed |
| error | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of top 10 song and podcast | | |
| Abstract | The system shows the top 10 songs and podcasts along with the genre or category and the total number of playbacks | | |
| General activities necessary to obtain the results | The list of songs and podcasts will be ordered from the most to the least listened to | | |
| Result or postcondition | The report has been successfully displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Report has been displayed |
| error | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of number of songs sold | | |
| Abstract | The system must allow reporting of each genre of number of songs sold and total sales | | |
| General activities necessary to obtain the results | The number of songs sold will be counted and the total value of each genre will be calculated | | |
| Result or postcondition | The report has been successfully displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Report has been displayed |
| error | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of the best-selling song | | |
| Abstract | The system will report the best-selling song considering quantity of sales | | |
| General activities necessary to obtain the results | After counting each sale of all the songs, the one with the highest number of sales will be searched and it will be displayed. | | |
| Result or postcondition | The report has been successfully displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Report has been displayed |
| error | string | Failed to display report |