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

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| CLIENT | A Danish company of streaming music and audio content (NeoTunes) |
| 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 develop an application called NeoTunes, which is about an audio content platform that allows users to 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 | If the nickname does not yet exist in the database |
| joinDate | Date |  |
| pictureURL | string |  |
|  | representativeUrl | String |  |
| General activities necessary to obtain the results | First you will be asked if you want to register an artist or content creator and then the data will be taken to save them in the system | | |
| Result or postcondition | The producer user has successfully registered | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Producer registered correctly |
| errMessage | string | Could not register Producer |

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| --- | --- | --- | --- |
| Name or identifier | Register customers (standard and premium) | | |
| Abstract | The program takes the necessary data from the customer and saves it in the database | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| nickname | string |  |
| identification | string | If the identification does not exist yet in the database |
| joinDate | Date |  |
| General activities necessary to obtain the results | First you will be asked if you want to register a standard or premium and then 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 |
| errMessage | string | Could not 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 | chronologicalFormat |  |
| album | String | If audio content is song |
| genre | Enum: Genre (int) | If audio content is song |
| albumPictureURL | String | If audio content is song |
| price | double | If audio content is song |
| description | String | If audio content is podcast |
| category | Enum: Category (int) | If audio content is podcast |
| podcastPictureURL | String | If audio content is podcast |
| General activities necessary to obtain the results | First you will be asked 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 registered correctly |
| errMessage | string | Could not register audio content |

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| --- | --- | --- | --- |
| Name or identifier | Create playlist | | |
| Abstract | The program must allow a consumer user to create a playlist | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| playlistTitle | string | The title doesn't exist yet |
| audioContentTitle | string | The audio content exists |
| General activities necessary to obtain the results | The user will be asked for his name to validate that he is a consumer user, 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 |
| errMessage | string | Could not register playlist |

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| --- | --- | --- | --- |
| Name or identifier | Edit playlist | | |
| Abstract | The program must allow a consumer user to edit a playlist | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| playlistTitle | string | The title exists |
| audioContentTitle | 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 that they are a consumer. Then they´ll enter the playlist that they wish to edit and the title of the audio content that will be deleted from the playlist or added | | |
| Result or postcondition | The playlist has been edited successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Playlist edited successfully |
| errMessage | string | Could not edit playlist |

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| --- | --- | --- | --- |
| Name or identifier | Share playlist | | |
| Abstract | The program must allow sharing a playlist through a code | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| playlistTitle | string | The title exists |
| General activities necessary to obtain the results | The user will be asked for the name to validate that they are a consumer and they´ll be asked 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 |
| errMessage | string | Could not 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 |
| playlistTitle | string | if the audio content is in a playlist |
| audioContentTitle | 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 | | |
| 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 |
| errMessage | string | Failed to simulate playback of audio content |

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| --- | --- | --- | --- |
| Name or identifier | Buy song | | |
| Abstract | The program must allow the consumer user to buy a song | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| username | string | The user is consumer |
| audioContentTitle | string | The audio content exists in the playlist and the user has not yet purchased it |
| General activities necessary to obtain the results | The name of the user will be asked to validate that they are a consumer and they´ll be asked for the title of the song to be able to make the payment | | |
| Result or postcondition | The song has been bought successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | the song has been bought |
| errMessage | string | could not 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 |
| titleAudioContent | string | The audio content exists |
| General activities necessary to obtain the results | the title of the audio content will be searched and the number of times the playback has been simulated will be counted | | |
| Result or postcondition | The report has been successfully displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Report has been displayed |
| errMessage | 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 must allow reporting on 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 | You will first be asked what audio content you want to consult to get the report. Then the playback will be counted in each genre if it is song or in category if it is a podcast and the highest number 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 |
| errMessage | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of top 5 artist and content creators | | |
| Abstract | The system must allow reporting on the top 5 artists and content creators along with the total number of playbacks | | |
| 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. The total song playbacks each artist has, and the total podcast views each content creator has. 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 |
| errMessage | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of top 10 song and podcast | | |
| Abstract | The system must allow to show 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 |
| errMessage | 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 |
| errMessage | string | Failed to display report |

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| --- | --- | --- | --- |
| Name or identifier | Generate report of the best-selling song | | |
| Abstract | The system must allow reporting the best-selling song along with the total number of sales and the total value 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 |
| errMessage | string | Failed to display report |