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| Client | NeoTunes |
| User | * The programmers and designers that will keep working on the project |
| Functional requirements | 1. Register user producer: artists and content creators. 2. Register consumer, standard and premium users. 3. Record songs and podcasts. 4. Create a playlist. 5. Edit a playlist. |
| Problem context | A Danish company wants to create a prototype of software that will allow them to enter the music streaming and audio content industry, where users can truly become owners of the music they listen to. |
| Non-functional requirements | * The program must use the language Java * The program must be fast, cannot longer more than 2 seconds to start * The program must work in android and web platforms * The program must be scalable |

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| Name or identifier | **R1: Register artists and creators of content.** | | |
| Abstract | The program must let the user create a producer user. This user can be an artist or a creator of content. From this user the system receives: Name (unique identifier), linking date, and an URL with the artist’s image or distinctive logo. The system must now the reproductions of this artist and the total time the users spent in this artist. | | |
| Inputs | **Input name** | **Data type** | **Condition of select or repetition** |
| name | String | * If the name already exists |
| linkingDate | String |  |
| URL | String |  |
| isCreatorOfContent | boolean |  |
| General activities needed to obtain the results | 1. The system will receive a nickname and search if it already exists. 2. The system classify the producer according to the isCreatorOfContent parameter 3. The system will add a producer user to the system 4. The system returns a String confirming if the operation was successful or if it failed. | | |
| Result or post condition | The program registers a producer and returns a String validating the operation | | |
| Outputs | **Output name** | **Data type** | **Condition of select or repetition** |
| result | String |  |

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| Name or identifier | **R2: Register consumer users, standard and premium.** | | |
| Abstract | The system must let the user create a consumer user. This kind of user will be the ones that are going to buy and listen to the audio / music of the producer user. This user will be divided in two types:   * Standard: Will be able to create only 20 playlists, buy 100 songs and play an ad every 2 songs or before a podcast. * Premium: This user will be able to create infinite playlists and songs, also this user will be able to access to both standard and premium content without ads.   From this user the system receives: nickname, id, linking date | | |
| Inputs | **Input name** | **Data type** | **Condition of select or repetition** |
| nickname | String | * This parameter cannot be repeated |
| id | String |
| isPremium | boolean |  |
| General activities needed to obtain the results | 1. The program receives the nickname and id and checks if it already exists 2. The program will take the date on which the registration is made. 3. The program classifies the user whether is premium or standard and assigns his limits. 4. The system returns a String confirming if the operation was successful or if it failed. | | |
| Result or post condition | A new level is created and returns a String confirming the success of the operation | | |
| Outputs | **Output name** | **Data type** | **Condition of select or repetition** |
| result | String |  |

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| Name or identifier | **R3: Record songs and podcast.** | | |
| Abstract | The artists can create songs, and the creators of content can create podcasts. Either audios, music or podcasts will have a name, an URL related to the audio file album cover or related to topic in the case of the podcast and a duration. The type of audio file depends on what the user wants to add  The song will also have these features:   * Price (dollars), the number of times it was sold and the genres available to it will be Rock, Pop, Trap and House.   On the other hand, podcast:   * Cannot be bought and the possible categories will be: Política, Entretenimiento, Videojuegos y Moda.   The system must have a good scalability, so adding a new audio type must be easy. | | |
| Inputs | **Input name** | **Data type** | **Condition of select or repetition** |
| name | String |  |
| URL | String |
| duration | double |
| price | double | The type selected is a song |
| timesSold | int |
| genre | TypeGenreSong |
| category | TypeCategoryPodcast | The type selected is a podcast |
| General activities needed to obtain the results | 1. The program will check if it is a song or a podcast. 2. The program will receive a name, URL, duration, price, timesSold and genre in case of the song 3. The program will receive a name, URL, duration, and category in case of the podcast 4. The program returns a String validating the operation | | |
| Result or post condition | The program creates a new audio and returns a String validating the operation | | |
| Outputs | **Output name** | **Data type** | **Condition of select or repetition** |
| Result | String |  |

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| Name or identifier | R4: Create playlists. | | |
| Abstract | These are list of audio files. Each list has its name, audios (Could be a song or a podcast), and a self-generated numeric code, so the users can use it and easily share their playlists. This numeric code is generated by a matrix (6x6) filled with random numbers between 0 and 9 as follows:   1. A playlist with only Songs: Tour in letter N 2. A playlist with only Podcasts: T-letter tour 3. A playlist with Songs and Podcasts: the number of the boxes i,j, going through the matrix from bottom to top and from right to left, when the sum i+j is an odd number greater than 1.   Both the matrix and the resulting identifier code must be displayed through the user interface each time the user decides to share the list.   |  | | --- | | **Only songs** | | **Code:** 6774462302980066 |  |  | | --- | | **Only Podcast** | | **Code:** 6819237088730412 |  |  | | --- | | **Songs and podcasts** | | **Code:** 4084337206394686 | | | |
| Inputs | **Input name** | **Data type** | **Condition of select or repetition** |
| name | String |  |
| General activities needed to obtain the results | 1. The program receives the name and creates an empty playlist with that name 2. The program will generate a random code that is going to change according to the content of the playlist. 3. A new playlist is created and returns a String confirming the operation | | |
| Result or post condition | The program creates a new enemy and returns a message confirming the operation. | | |
| Outputs | **Output name** | **Data type** | **Condition of select or repetition** |
| Confirmation message | String | The enemy was successfully created. |

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| Name or identifier | R5: Edit a playlist. | | |
| Abstract | The program must let the user edit the playlist so the user can change its name or add more songs. | | |
| Inputs | **Input name** | **Data type** | **Condition of select or repetition** |
| playlistName | String |  |
| Name | String | The user wants to change the name.  The name cannot be repeated in the user playlist |
| songName | String | The new song that is going to be added |
| General activities needed to obtain the results | 1. The program receives the playlist’s name and checks what do the user wants to change. 2. Change or adds according to the operation selected. 3. The program returns a String validating the operation. | | |
| Result or post condition | The program changes the playlist selected by the user and returns a String with result of the operation | | |
| Outputs | **Output name** | **Data type** | **Condition of select or repetition** |
| result | String |  |

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| **Functional requirements** | **Class name** | **Method name** |
| R1: Register Player | Player class | Player(…) |
| Level class | addPlayer(…) |
| Game class | addPLayerToLevel(Level) |
| Main | registerPlayer(Level) |
| R2: Register Level | Level class | Level(…) |
| Game class | addLevel(…) |
| Main | registerLevel(…) |
| R3: Register Loot | Loot class | Loot(…) |
| Level class | addLoot(…) |
| Game class | addLootToLevel(…) |
| Main | registerLootInLevel(…) |
| R4: Register Enemies | Enemy class | Enemy(…) |
| Level class | addEnemy(…) |
| Game class | addEnemyToLevel(…) |
| Main | registerEnemy(…) |
| R5: Increase level for a player, in case you cannot increase the level, you must inform the user what score you require to climb. | Player class | setPlayerScore(…) |
| Level class | getPlayerByNickname(nickname : String) |
| Game class | increasePlayerLevel(levelID) |
| Main | increasePlayerLevel() |