

Workshop in Data Management Project's User Manual

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1 Application's Screens and Flow

1.1 Splash Screen

The first screen of the application is a login\registration screen. If this is your first time using the application you need to register an account before using it. If you already have an account you can sign in with it.

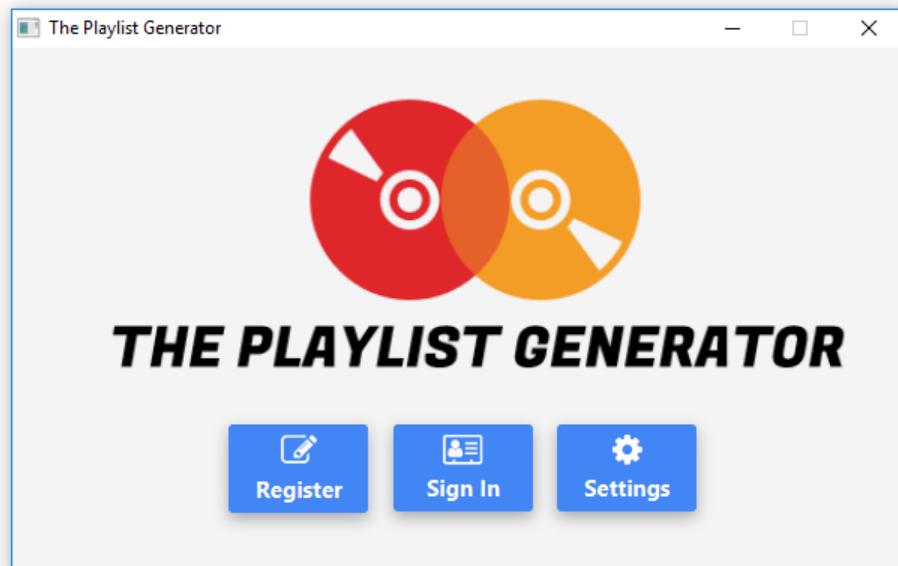


Fig. 1: Splash screen of the application

Settings Clicking on the settings button will open up the database settings screen pop up. Here you can configure several parameters regarding the database server. Specifically, you can change the database server IP address, the database server port, the database server username, the database server password and the database server schema name. Click the save button to save the new typed parameters or X to cancel. Once you saved the parameters, they are saved into a local configuration file and will be reloaded automatically the next time you will open up the application.

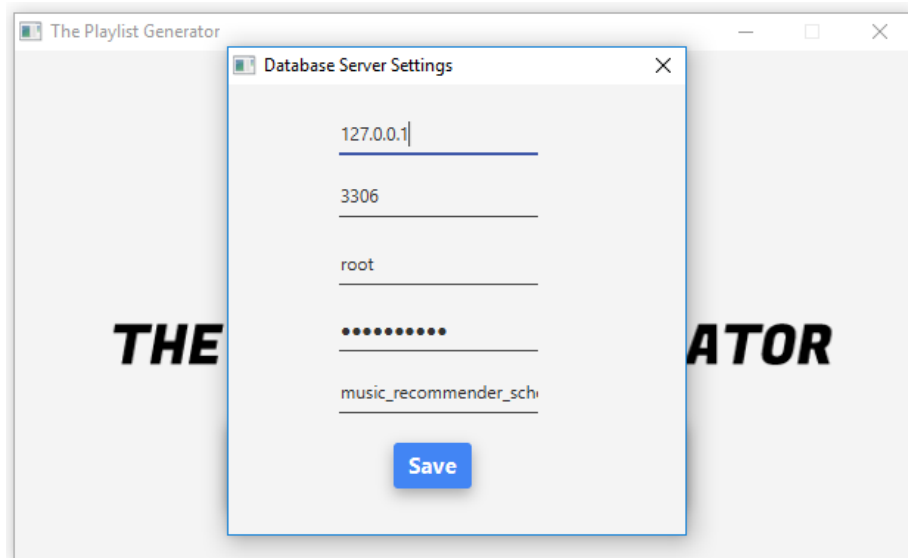


Fig. 2: Settings screen of the application

Sign In If you have already registered an account in the past you can login into it in this screen. Type in your username & password and click next. You will be logged straight into the application's main screen. Click back to return to the splash screen.

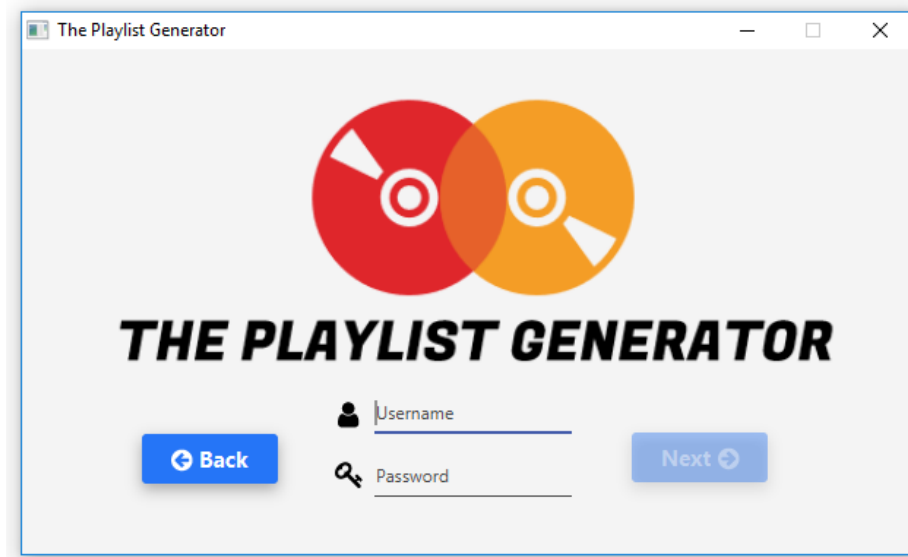


Fig. 3: Sign in screen of the application

Register If you don't have an account, you must first register in order to use the application. Type in your desired username, password and name in the text fields. Choose your favorite icon from the icons combo box and click on the next button. If your username has not been taken yet your account will be created and you will be transformed straight into the application's main screen



The Playlist Generator

THE PLAYLIST GENERATOR

Back Username Choose Icon Next

Password Name

Fig. 4: Register screen of the application

1.2 Main Screen

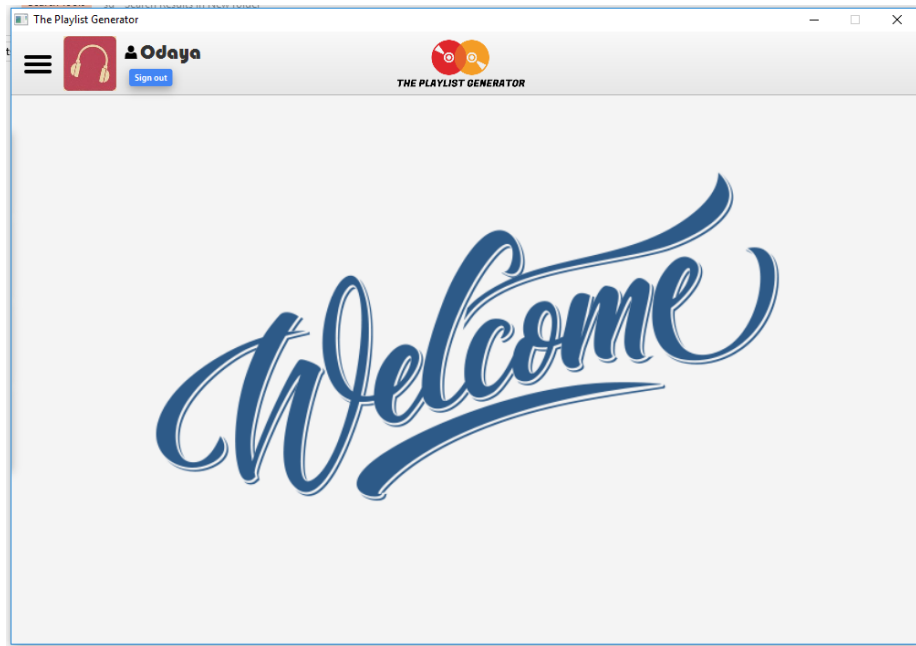


Fig. 5: Main screen of the application

This is the main screen of the application. In the upper section of the screen you can see your name, your icon and a sign out button which allows you to go back to the splash screen. Clicking on the button next to the icon in the upper left corner of the screen will open the application's menu.

Generator Here you will be able to automatically generate music playlists. There are 2 types of playlists generators: song based and preferences based. You can choose which one to use with the tabs in the upper section of the screen.

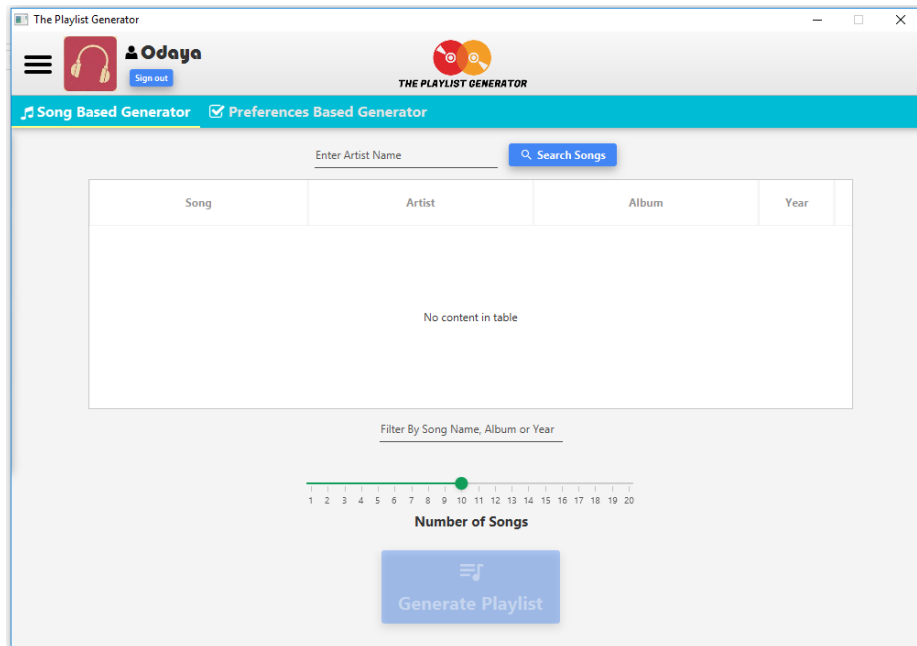


Fig. 6: Song based generator screen

This is the song based generator screen. Here you are able to choose your favorite song and the application will create a music application with songs which best match the chosen song properties. First, you need to search for your desired song. Type in the artist name and click on the search songs button. You will see in the table below the songs associated with the typed artist which have been found in the dataset. You can filter the results by typing in the song name, album or year in the text field below the table. Once you found your desired song click on it in the table to highlight it. Next, choose the amount of songs to be in the generated playlist using the slider click on the generate playlist button.

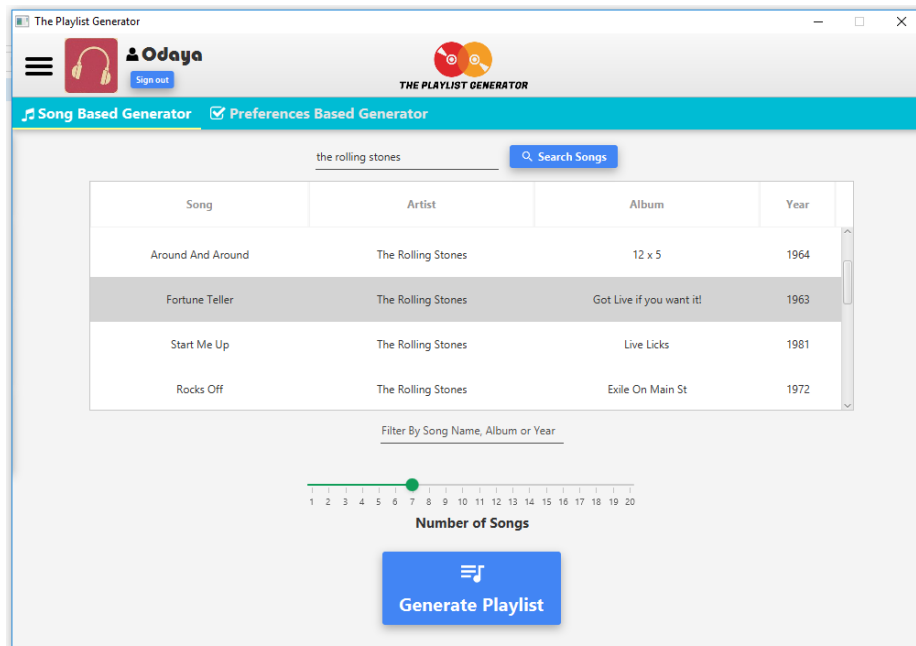


Fig. 7: Song based generator screen

The application will automatically generate a music playlist based on the song you have chose. In the next screen you will see the playlist the application has generated. Use the scroll bar on the right to scroll the generated playlist. Each song in the playlist has tempo and loudness similarity score based on their similarity to the given song regarding these metrics. You can choose to save the generated playlist to your playlists collection by clicking on the save playlist button, typing a name for this playlist and clicking on the save button. Clicking on the restart button will allow you to generate a new playlist with another parameters.

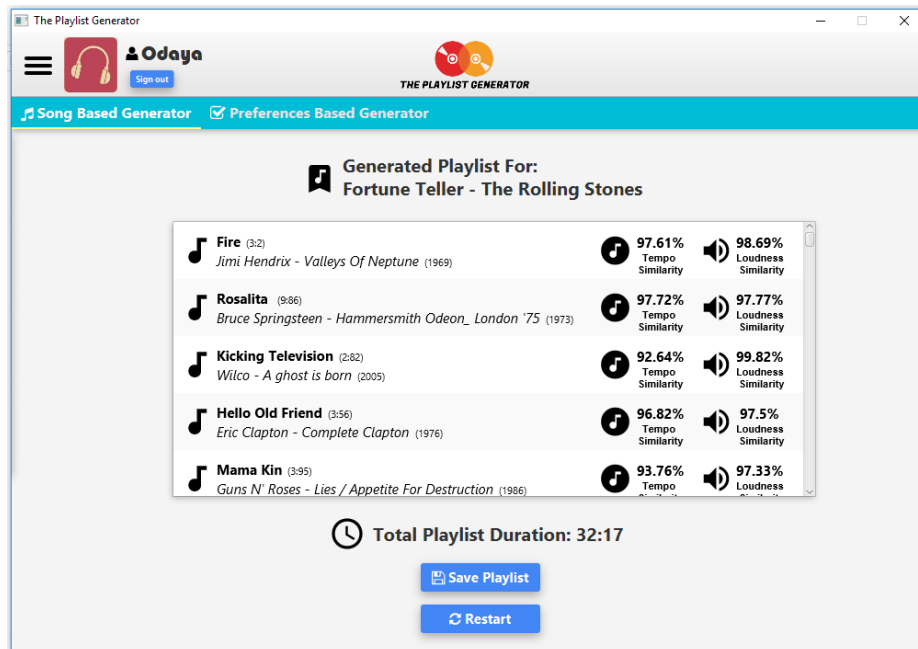


Fig. 8: Song based generator screen

Clicking on the Preferences Based Generator tab will open up the preferences based generator dialog. The process is similar to the previous described flow except that here you will be asked to choose your favorite music genre from the drop down menu and how much "happy" you want the songs in the generated playlist to be (-100 is the saddest and 100 is the happiest). Clicking on the generate playlist button will generate a music playlist in the chosen genre with estimated happiness values as close as possible to the user request. As described before, you can choose to save the generated playlist to your collection or restart the process from the beginning.

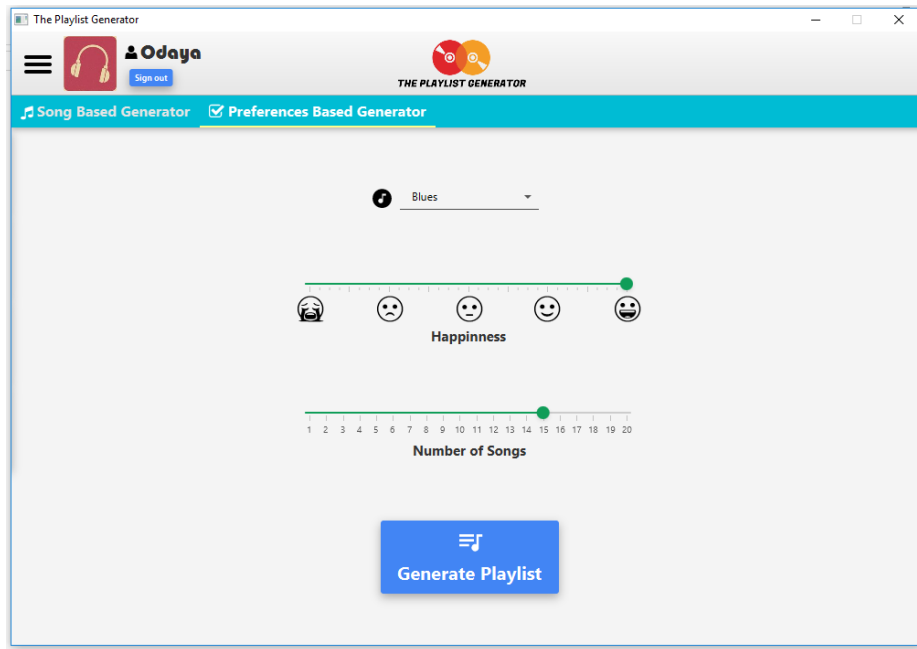


Fig. 9: Preferences based generator screen

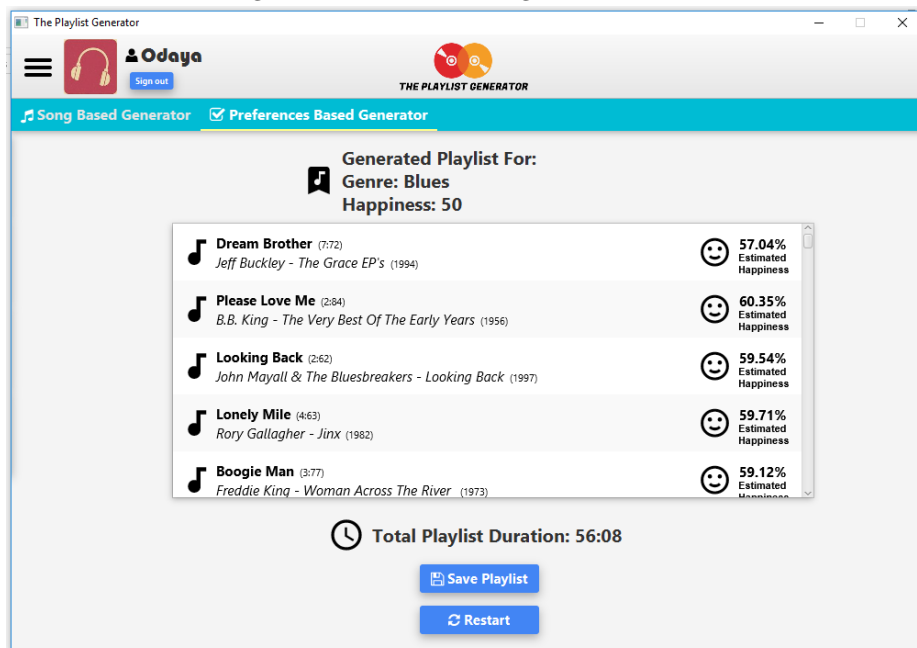


Fig. 10: Preferences based generator screen

My Playlists Here you can view all of the playlists which you saved in either the song based generator or the preferences based generator. The names you gave to each of the palylist can be seen in the upper tabs and clicking on them will open up the corresponding playlist. For each playlist, you can see its the total duration and delete it using the delete playlist tab.

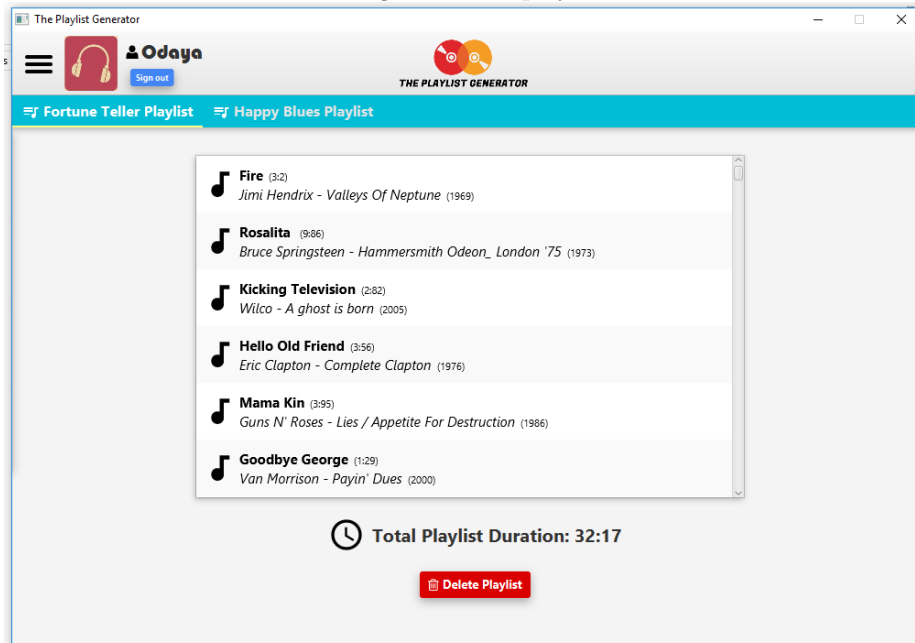


Fig. 11: My playlists screen

Statistics Here you can view some interesting statistics information about the playlists you have saved in your library. Clicking on each of the tabs in the upper section of the screen will display another chart. I will now describe each of the charts.

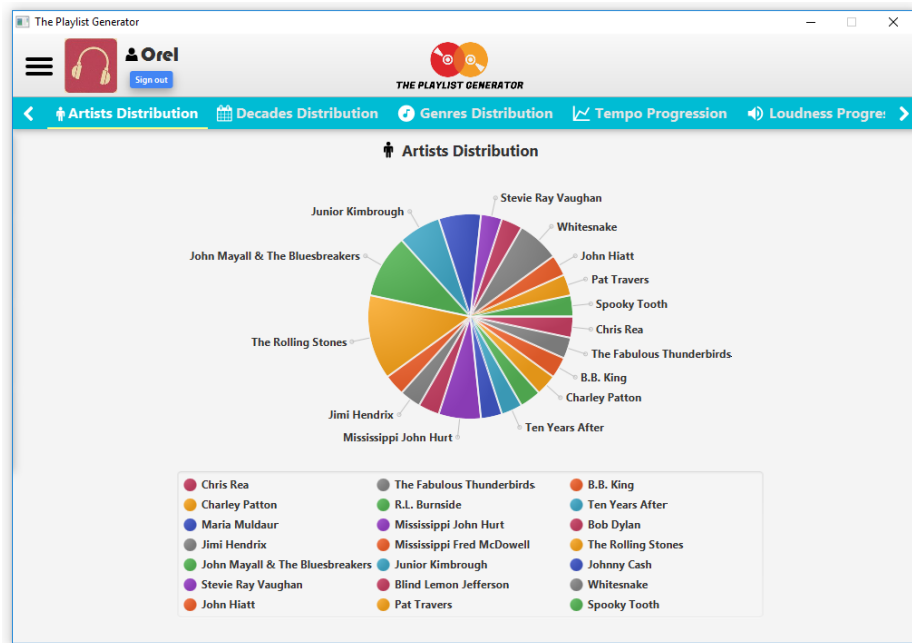


Fig. 12: Artists distribution screen

Here you can see a pie chart which describes the distribution of artists across all of the saved playlists.

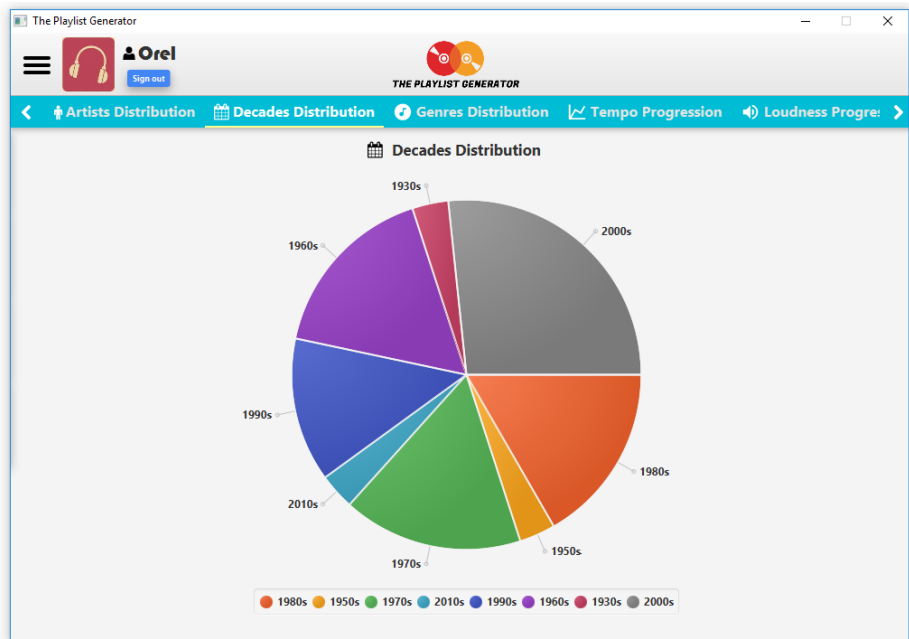


Fig. 13: Decades distribution screen

Here you can see a pie chart which describes the distribution of songs' decades across all of the saved playlists.

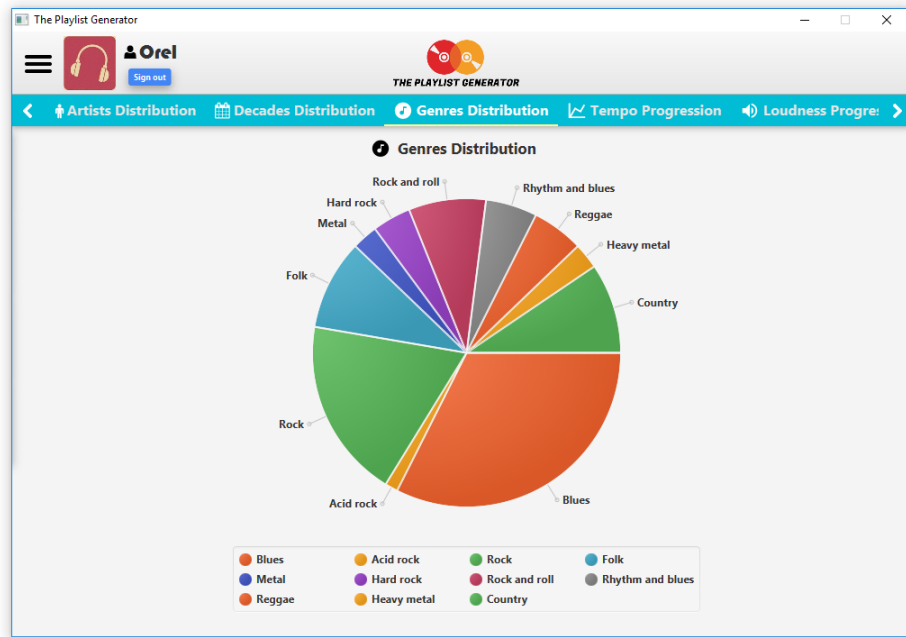


Fig. 14: Genres distribution screen

Here you can see a pie chart which describes the distribution of songs' genres across all of the saved playlists. Note that in the Million Song Dataset a music genre is associated with an artist, and not with a song. As such, the genres of a songs are the genres associated with the song's artist, which means a song may have many genres associated with it.

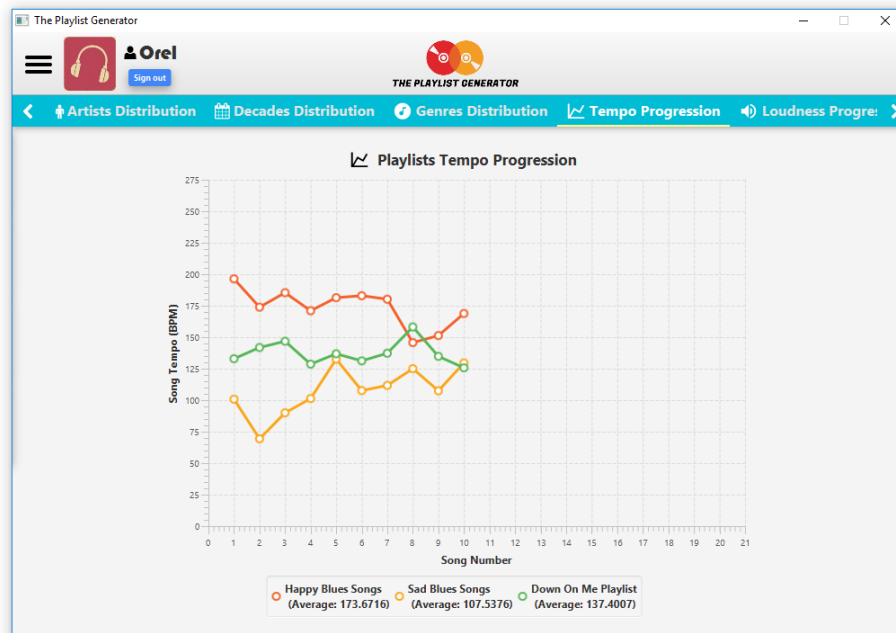


Fig. 15: Tempo progression screen

Here you can see a line chart which describes the playlists tempo progression. For each saved playlist the chart displays a curve which describes the songs' tempo as a function of the playlist progression. In the lower part of the chart you can see the average tempo value for each playlist.

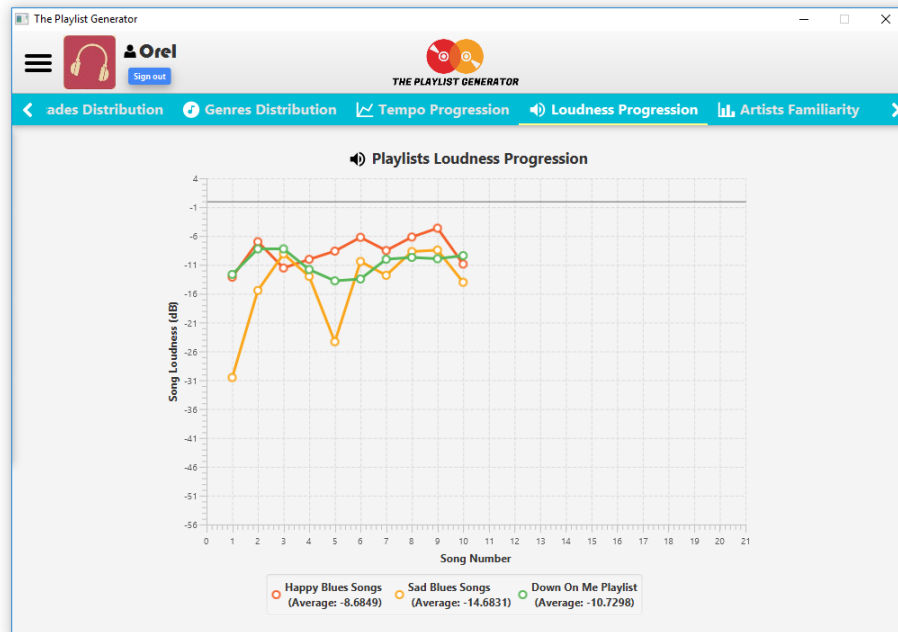


Fig. 16: Loudness progression screen

Here you can see a line chart which describes the playlists loudness progression. For each saved playlist the chart displays a curve which describes the songs' loudness as a function of the playlist progression. In the lower part of the chart you can see the average loudness value for each playlist.



Fig. 17: Artists' familiarity screen

Here you can see a bar chart which describes the average artists' familiarity value. For each playlist the chart displays a bar which shows the average artists' familiarity value for this playlist.

Settings Clicking on this button will open up the same database server settings pop up as described before.

2 Installing the Database

Installing the database is as easy as running a SQL script. I have exported my database (structure and data) into a dump file called "PlaylistGenerator-Dump.sql". In order to load the data from it: open up the MySQL Workbench program, connect into the database, click on "open a script file in this editor" and navigate to the supplied "PlaylistGeneratorDump.sql" file. Then, click on the "Execute the selected portion of the script or everything if there is no selection" button (the flashlight icon) and wait for the loading process to complete. Once the script finish to run, the database is all ready and set up.

3 Installing the Application

There is no need to install the application. After installing the database simply run the "runme.bat" file which will open up the application, click on settings to change the database server parameters and you are all set.

4 Configuration files

There is only one configuration file to the application called "DatabaseServer-Parameters.txt" which contains the parameters for connecting into the database server. This file should not be edited manually, but rather through the application's interface in the settings screen. The parameters you will type in this screen will be automatically saved in this file.