

Project title	Music Box
Author(s)	Moisa Oana Miruna, Pop Ileana
Group	30422

1. Task Description

Short Description: This is a Java application for listening to music, intended to be used not only by listeners but also by the artists. If you are a music lover, be ready to stream your favorite tracks shared on this platform by extremely talented creators.

Listeners features:

- create an account
- search any song
- add a song to your library
- remove a song from your library
- listen to your songs after you download them
- explore new music using filters (by artists, albums or genres)
- get updates from artists on the platform
- see your listener statistics

Artists features:

- create an account
- see your songs uploaded on the platform
- upload new music
- remove a song from your list of songs
- see your personal account statistics: number of songs and albums
- make announcements about new albums and tours on your personal page

Start Page: The users can create a new account or login into their existing account, by clicking one of the two buttons displayed on the screen: Login or Create account.

Create account Page: This is a page dedicated to creating new accounts. The new user must provide information for all the fields displayed on screen. Each user should have a unique username. Therefore, if the user chooses an already existing username, he will be provided with a warning and must insert a new username choice. Also, as far as the password is concerned, for safety features, the user must retype its chosen password in the confirmation password field. If there is a mismatch between these two fields, the user will be warned. The last step in creating a new account is the profile type choice: Regular User profile or Artist profile. After filling in all these fields, the new account is created, and the user is redirected to the Login Page. If one field is missing the user will be provided with a warning. If the user chooses to log in, he can go back to the start page, or if he wants to start all over with filling in the fields, he can use the Clear button.

Login Page: The user must enter his username and password in the two text fields available on the screen in order to login into his account. If the user leaves one or both text fields empty, he will be warned and he will not be able to enter his account, until he provides all information. The user must enter an existing username and a password that matches that username. If the username provided doesn't exist or the password is incorrect, the user will get a warning. If all these requirements are met, the user can press the Login button and his personal account page will be displayed. If the user wants to go from the Login Page back to the Start Page, he can press the Back button. Moreover, if he wants to start all over with writing the username and password, he can press the Clear button that clears both text fields.

Regular User Profile: This page will display the user's name, profile image, the number of songs and the number of artists in his library. Also, the user's library will be displayed as a list of songs with the following information: song name, artist name, album name, genre and duration (in minutes and seconds). By clicking the name of the song, the user will be able to listen to that track. After clicking, an audio player will be displayed. Next to each song from the list, there is a "-" button that can be pressed in order to remove that song from the library. The number of songs and artists in the library will be automatically updated. There are three more buttons that the user can click in his profile page: Explore, Logout and Posts. The Explore button takes the user to the Explore Page. The Logout button takes him to the Start Page and at the same time, the user's text

file will be rewritten with all the changes made while he was logged into the account. The Posts Button takes the user to the Explore Posts Page.

Audio Player Page: This page displays the song that is currently playing and the corresponding artist. There is also a progress bar that is progressively filled as the song goes on and a time tracker for counting the minutes and seconds since the beginning of the song. The user can pause the song by clicking the Pause button, which immediately turns into a Resume button, which the user can press when he wants to resume the song. The user can stop the song and exit the audio player by clicking the Stop button.

Explore Page: The purpose of this page is to show all the songs currently available in the application. The user can search a song based on its name, artist, album or genre. Next to each track, a "+" button is available for the user to click if he wants to download that specific song to his library. The "+" buttons have effect only if the user doesn't already have that song in his library. After adding the songs and exiting the Explore Page, the number of songs and number of artists counters from the user's library will be updated.

Explore Posts Page: Here, the user can see all the announcements made by the artists on the platform. Both the name of the artist and the actual post are displayed.

Artist Profile: The top part of this page displays information about the artist such as its name, username and profile picture. Its profile statistics offers information about the number of songs the artist uploaded and the number of albums as well. The rest of the page displays the list of songs uploaded together with the album names and the duration times provided for each song. The actions enabled for this type of account are the uploading of a new song, removing a song from the list of the songs or making a new entry in the personal feed. If the artist wants to remove a song, he can simply press the "-" button placed in the same row with the song wanted to be removed and the list of songs will refresh automatically. When uploading a new song, a new page opens, and the artists must fill in the required information about the new song. Also, if the artist wants to listen to one of its already uploaded songs, he can press its title and an audio player will open. (this audio player has the same features as the audio player provided for a regular user).

Upload Song Page: This page is very similar to a form where the user must provide the necessary information about the new song which is going to be uploaded on the platform. The fields that must be filled in are about the title of the song, the album name, its duration, its genre and a file path for the .mp3 file. All these fields are required in order to upload a new song and, if the user does not provide all of them or some of the data is not in its required form, he will be warned. After pressing the upload button, the artist can verify that his newest song is displayed in his list of songs. Also, for preserving the information even after the artist logs out, all the information about his songs is retained into a file containing the details of all the songs on the platform.

Personal Feed Page: An artist can access its announcements by checking its personal feed page. Here, he can see all its older posts, as well as making a new entry in his personal feed being redirected to the New Entry page.

New Entry Page: In this page, the artist can create a new announcement about releasing a new song or the start dates of one of its tours.

2. Class Discovery

Artist	
Knows the username, name and password	User
Knows nrOfSongs, nrOfAlbums	
Add/remove a song	Music Manager interface
Has an artist feed	ArtistFeed
Has a library	UserLibrary
Has an artist profile	ArtistProfile

ArtistFeed	
Has list of announcements	
Display the announcements	PersonalFeed

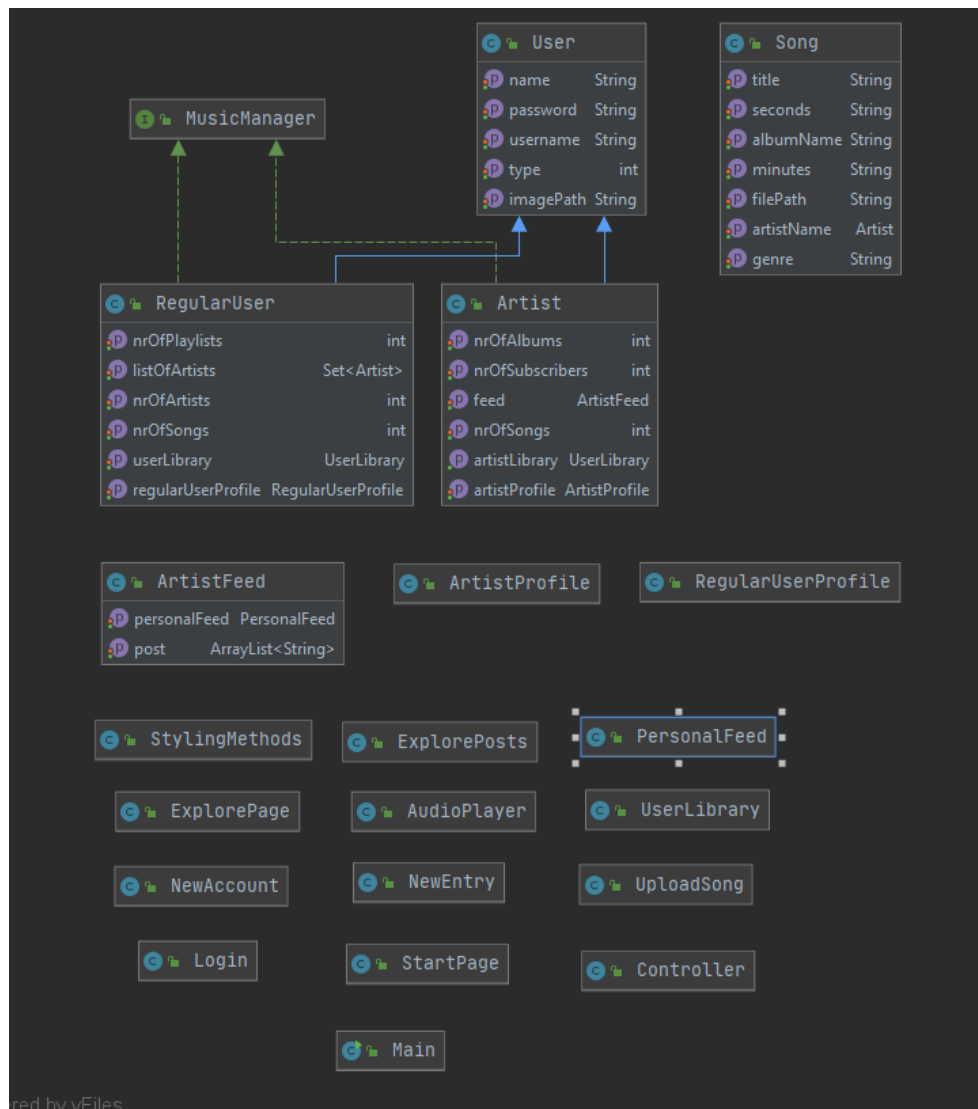
Regular User	
Knows the username, name and password	User
Knows nrOfSongs, nrOfArtists	
Add/remove a song	Music Manager interface
Has a list of artists	Artist
Has a library	UserLibrary
Has a regular user profile	RegularUser Profile

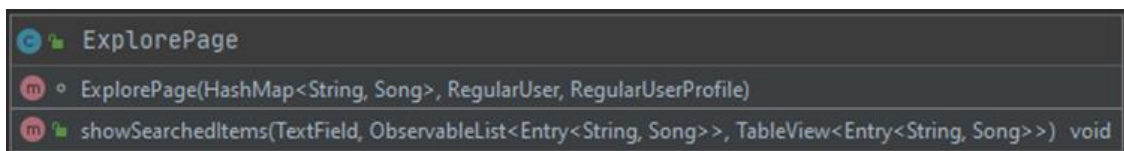
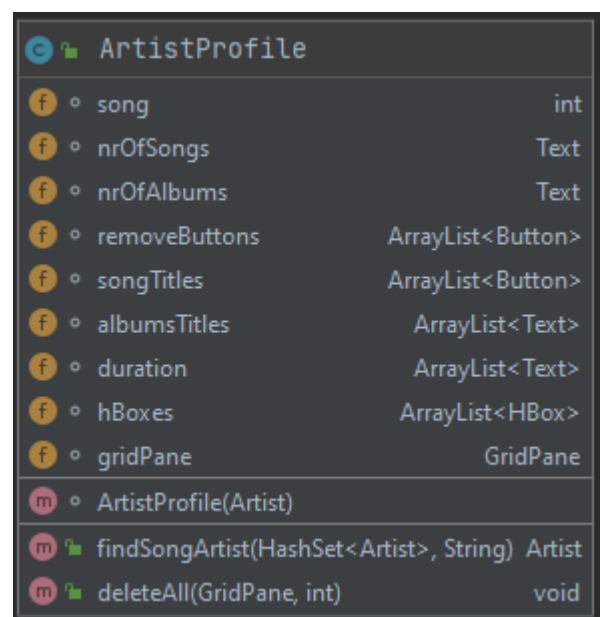
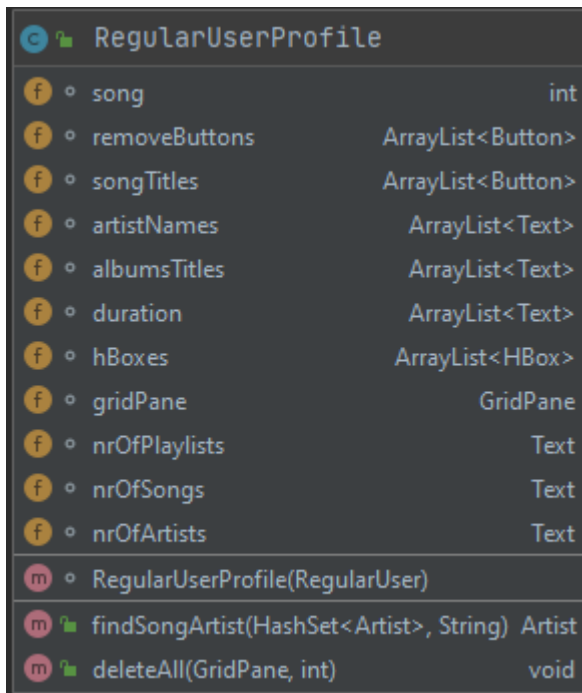
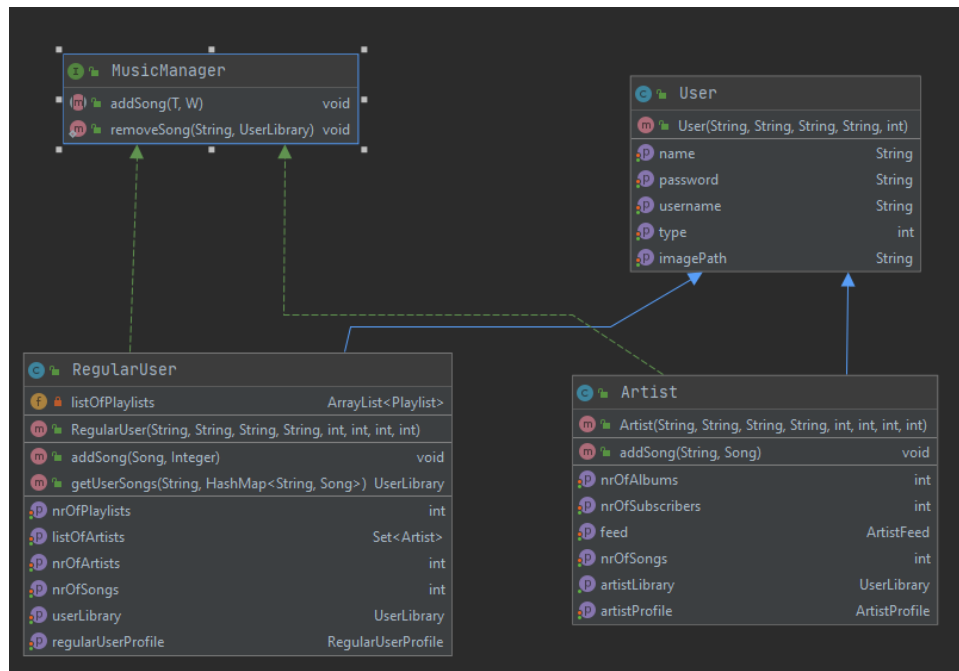
Regular User Profile	
Plays a song	Audio Player
Displays song	User Library

User Library	
Has a list of songs	Song

Audio Player	
Plays audio of a song	Song

3. Class Diagram





```
class Song {
    Song(Artist, String, String, String, String, String, String)
    title: String
    seconds: String
    albumName: String
    minutes: String
    filePath: String
    artistName: Artist
    genre: String
}
```

```
class UserLibrary {
    userLibrarySongs: Map<String, Song>
}
```

```
class AudioPlayer {
    AudioPlayer(MediaPlayer, MediaView, Song)
}
```

```
class StartPage {
    loginButton: Button
    createButton: Button
    hbox: HBox
    StartPage()
}
```

```
class Login {
    Login()
    validation(TextField, PasswordField, Text, Text): boolean
}
```

```
class NewAccount {
    NewAccount()
    validation(TextField, TextField, PasswordField, PasswordField, Text, Text, Text, Text): boolean
}
```

```
class ArtistFeed {
    personalFeed: PersonalFeed
    post: ArrayList<String>
}
```

```
class NewEntry {
    NewEntry(Artist)
}
```

```
class PersonalFeed {
    gridPane: GridPane
    PersonalFeed(Artist)
}
```

```
class ExplorePosts {
    ExplorePosts()
}
```

```
class UploadSong {
    UploadSong(Map<String, Song>, Artist)
    validation(TextField, TextField, TextField, TextField, TextField, TextField, Text, Text, Text, Text, Text, Text): boolean
}
```

```
class StylingMethods {
    textStyle(Text, int): void
    generateRandomColor(): Paint
}
```