REPORT ON MUSIC PLAYER

as a project work for course

PYTHON PROGRAMMING (INT 213)

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SEMESTER : Third

SCHOOL : School of Computer & Engineering

UNIVERSITY : Lovely Professional University

Lovely Professional University Jalandhar,
Punjab, India

LOVELY PROFESSIONAL UNIVERSITY

MUSIC PLAYER

ABSTRACT:

Audio is an important source of communication and is as important as text in today's time. We know that the audio files are digital files. Therefore, there is a need of a tool to run the digital files or in other words, play the files. Without this tool or player, we'll never be able to listen to music, movies or the contents of any audio file.

Thus, we need MP3 players. It is a device using to play MP3s and other digital audio files. We can build this by ourselves without have to download and install premium music players. The Mp3 player GUI project idea attempts to emulate the physical MP3 Player.

This program will allow you to play songs, music, and all MP3 files on your desktop or laptops. MP3 player using Python is a basic programming application built using the programming language Python. It is a GUI program built by the means of Python libraries Tkinter, Pygame.

The MP3 player application should have the capabilities of playing a song, pause and resume a long and change the song, that is, play the previous or next song.

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ACKNOWLEDGEMENT

We have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.
We are highly indebted to Lovely Professional University for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project.

We would like to thank my mentor – **Prof. P. Raja**, for his advice and inputs on this project. We would like to thank my mentor for his guidance, support, motivation and encouragement throughout the period this work was carried out.

Many thanks to my friends and seniors as well, who spent countless hours to listen and provide feedback.

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Table of Contents

TEAM MEMBERS:-

Abhinav Arun:

- Contibution:-
  - Coding
  - GUI
  - Report

Bhuvik Gugnani:

- Contibution:-
  - Coding
  - GUI
  - Report

INTRODUCTION

We need an application that will allow us to play or listen to digital audio files. MP3 player is the device to play MP3s and other digital audio files. The MP3 GUI program application attempts to emulate the physical MP3 Player. This program will allow you to play songs, music, and all MP3 files on your desktop or laptops.

The main objective of this project is to allow users to play MP3 and digital audio files. To be engaging for users, the application has to have a simple but beautiful user interface.

This GUI project is developed using Python programming language. The GUI aspect of the application is built using the Tkinter library of Python. The interactive part of the application that handles the MP3 files uses the Pygame and Mutagen libraries.

You can have an interface for listing the available MP3 files. You can also give users the option to list other digital audio files that are not MP3. The users will also expect the MP3 Player to have an interface that shows information on the file that is playing. Some of the information you can include are the name of the file, its length, the amount played, and the amount not played, in minutes and seconds.

Python has libraries that can play audio files, such as Pygame, which allows you to work with multimedia files in few lines of code. Similar libraries are Pymedia and Simple audio. These libraries can handle a lot of digital audio files. They can handle other file types, not just the MP3 files. You can also implement a feature that allows users to create a playlist. To do this, you'll need a database to store information on the created playlists. Python's sqlite3 module allows you to use the SQLite database.

Context

This project has been done as part of my course for the CSE(H) at Lovely Professional University. Supervised by P. Raja, I have three months to fulfill the requirements in order to succeed the module.

Motivation

Python is a interesting language and the idea creating a music player for your own was a interesting idea. So, We ensured of adding all the features that are required in music player.

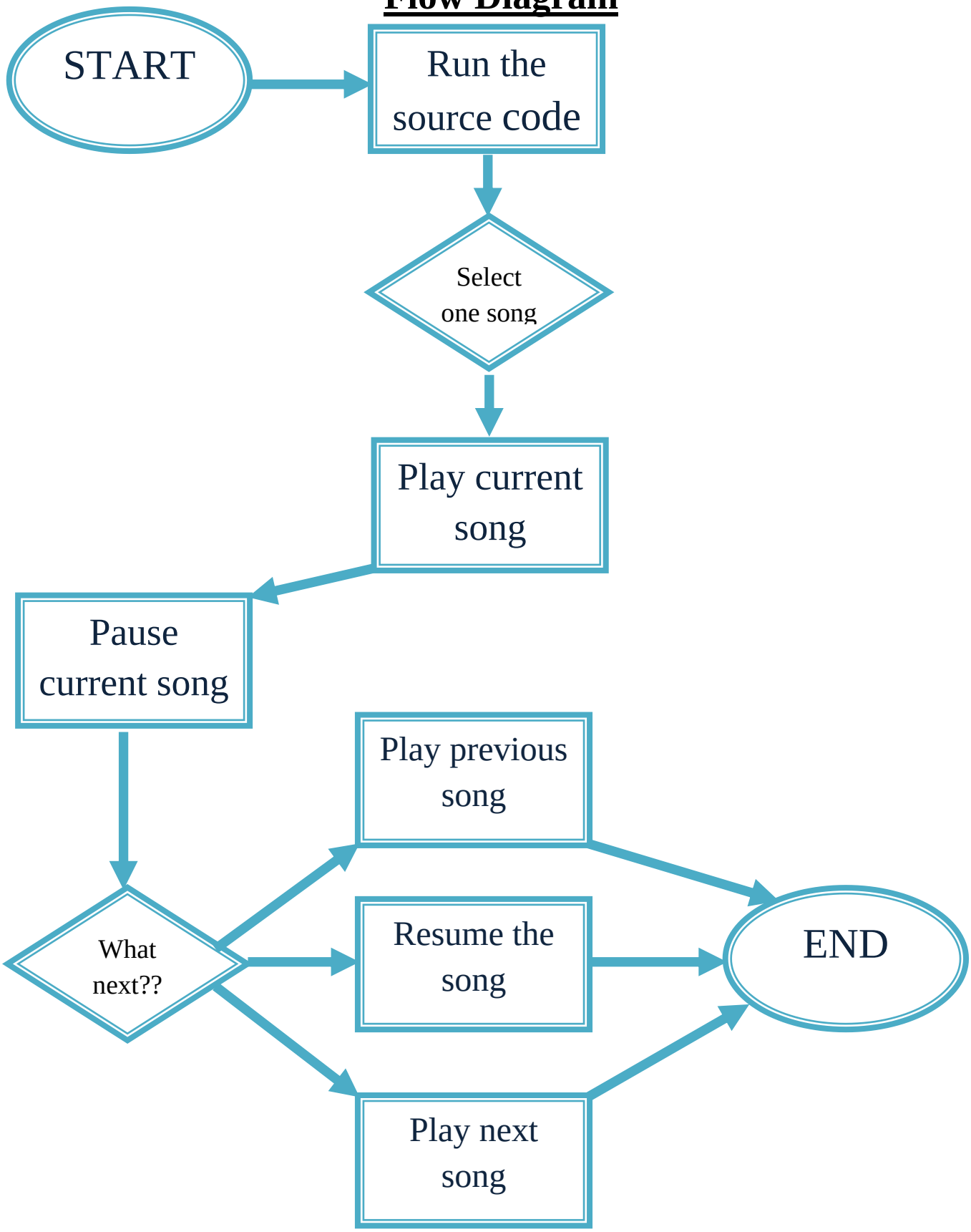
Idea

We thought about how to play music more conveniently without breaks or hindrance. So, we went towards the digital help using Python as it is efficient in both fast and accessing a database.

ALGORITHM

1. Folder where songs are to be mentioned.
2. Create an object of the tkinter and Pygame libraries.
3. Create a window using Tkinter object.
4. Add buttons that provide different functionalities.
   Select a song
   Play the song
   Pause the song
   Play previous song
   Play next song
6. Add label to display the song's information.
   Name
   Singer
   Format (mp3)
7. Display screen will display the details of the entire playlist.
8. Close button will automatically clear the song list and will stop playing the song.

Flow Diagram



Libraries used for Music Player Application:

1. Tkinter

We already told you in the title of this page that we will be using the Tkinter library, a standard library for GUI creation. The Tkinter library is the most popular and easiest to use and contains many widgets (these widgets help create attractive GUI applications). Also, Tkinter is a very lightweight module and useful for building cross-platform applications (so the same code can be easily used on Windows, macOS, and Linux.

Command to import:

```
from tkinter import *
```

2. Pygame Module

Pygame is a Python module that works with computer graphics and sound libraries and is designed with the power of playing with different multimedia formats like audio, video, etc. While creating our Music Player application, we will be using Pygame's mixer.music module for providing different functionality to our music player application that is usually related to the manipulation of the song tracks.

Command to install:

```
pip install pygame
```

Command to import:

```
Import pygame
```

3. OS Module

There is no need to install this module explicitly, as it comes with the standard library of Python. This module provides different functions for interaction with the Operating System. In this tutorial, we are going to use the OS module for **fetching the playlist of songs from the specified directory** and make it available to the music player application.

Command to import:

Import os

After importing Libraries and modules, now it's time to create a basic window where we will add our UI elements or Tkinter widgets. You can add this code either after importing libraries or also at the end just before the looping of the root window and the code is as follows:

Canvas= tk.Tk() # in order to create an empty window

Canvas.title("Play Beat")

Features:

1. **Play**

You can select the song which you want to hear and the there will be an option "play" you have to click on the button and the song will be played which you want to hear. You can randomly select the song and top on the play button to hear the song. In another code both play and pause will be at some option if you click ones the song will be played after some time if we tap the play option the song gets paused. So the play button is helpful for us to play the music.

2. **Pause**

While you are listening to a song suddenly you have got a work so you don't want your song to continue to play until your return and you can't memorize the duration of the song so you want to click on the pause button so the song gets stopped. If you have used a tape recorder or digital camera, you must have noticed the buttons of play, pause, and stop. These three buttons are used to start, stop for a while, and stop permanently respectively. If you are listening to music on a tape recorder and want to make a phone call, you have the feature of pause that enables you to stop the song momentarily to attend to the call and later listen to the song right from where you left listening. Thus, pause is a feature that allows one to have a break from an activity temporarily. If a bus is moving, but pauses to let a passenger get on board before moving again, it becomes clear that the pause was a brief stop intended to let the passenger get inside.

3. Stop

The button stop is too older to the new devices now days the stop button has been removed from the new devices. The stop button used to stop the music and make it to restart it again. It is helpful when you can't hear the music clearly. If you want to hear it again you can stop in the middle and it gets restarted. If you know about traffic lights, the red light is used to mean stop. This is why the backlights of all vehicles are red in color to alert vehicles coming from behind to apply breaks whenever they pause or become slow to avoid accidents. If it rained heavily in an area for a long period but then stopped, it means the end of the activity of raining. However, stop is also used to indicate the closure of an opening as in plugging of a hole.

4. Forwards

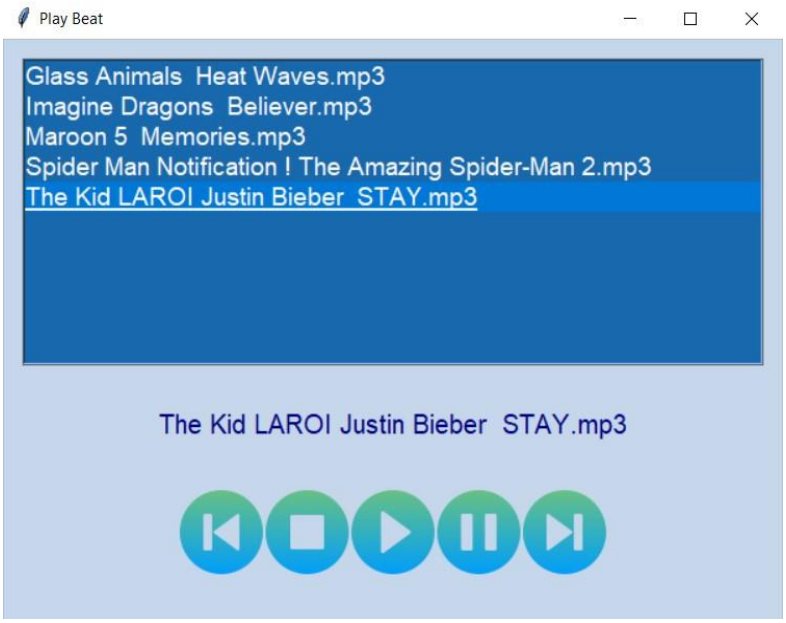
In a radio we have to hear only to one song there is no chance of skipping the song but in mp3 player if there are too many songs if there is a song which you don't like in the middle of the playlist then you can skip the song by just pressing the forward button. This helps us to skip the song. This also helps us to go to the song which you want to hear. There is a playlist 10 song you like the first song and you like the third song you played the first song and you want to skip the second and third by pressing the forward you can go to the third song.

5. Backwards

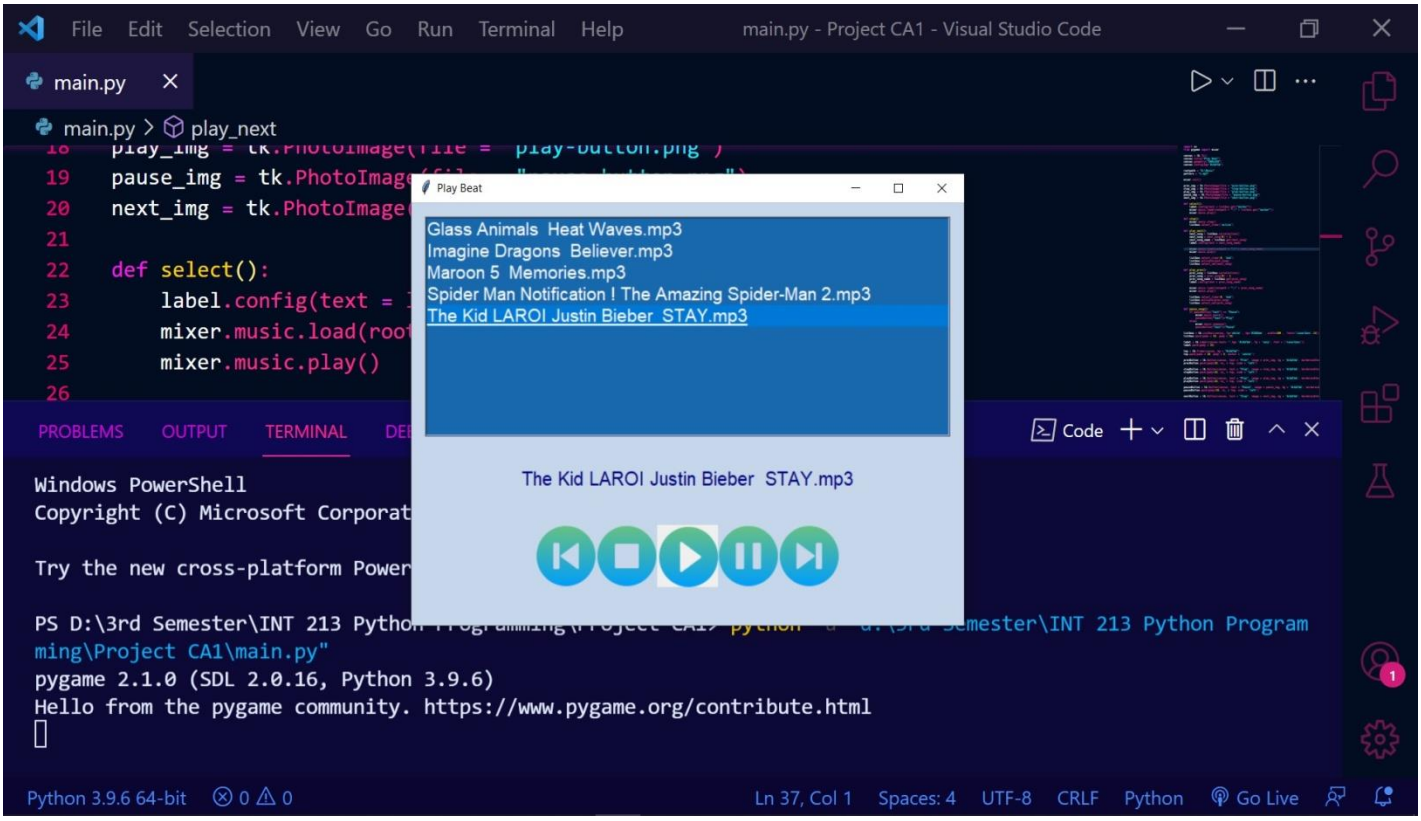
In a radio we have to hear only to one song there is no chance of hearing the song again but in mp3 player. While listening to one of the song and you liked the song which you hear and you want to go back to that song. In that case backward button is helpful for so we can go back to the song which we want hear.

GUI Screenshots:

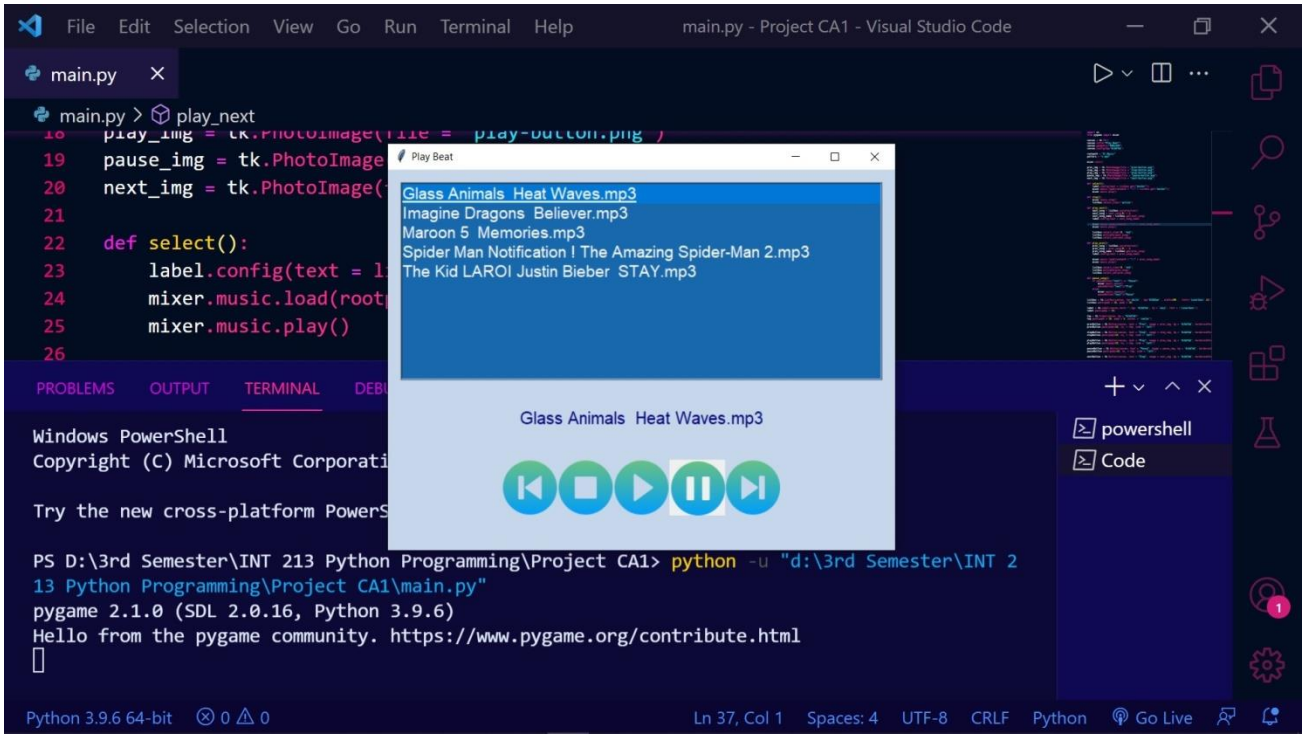
➢ Welcome Interface



➢ Play



➢ Pause


File Edit Selection View Go Run Terminal Help
main.py - Project CA1 - Visual Studio Code
main.py
main.py > play_next
pause_img = tk.PhotoImage
next_img = tk.PhotoImage(
def select():
label.config(text = l
mixer.music.load(root
mixer.music.play()
PROBLEMS OUTPUT TERMINAL
Windows PowerShell
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Try the new cross-platform PowerS
PS D:\3rd Semester\INT 213 Python Programming\Project CA1> python -u "d:\3rd Semester\INT 2
13 Python Programming\Project CA1\main.py"
pygame 2.1.0 (SDL 2.0.16, Python 3.9.6)
Hello from the pygame community. https://www.pygame.org/contribute.html
Play Beat
Glass Animals Heat Waves.mp3
Imagine Dragons Believer.mp3
Maroon 5 Memories.mp3
Spider Man Notification ! The Amazing Spider-Man 2.mp3
The Kid LAROI Justin Bieber STAY.mp3
Glass Animals Heat Waves.mp3
powershell
Code
Python 3.9.6 64-bit
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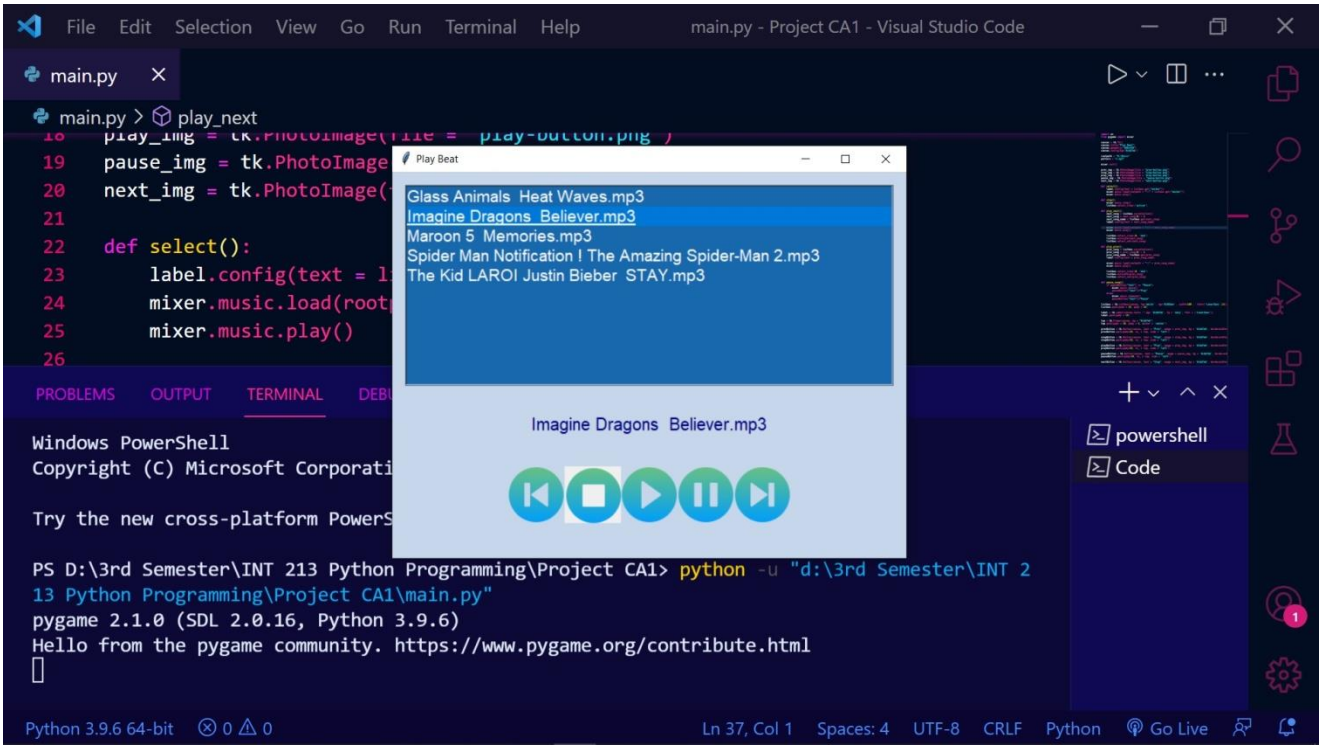
➢ Stop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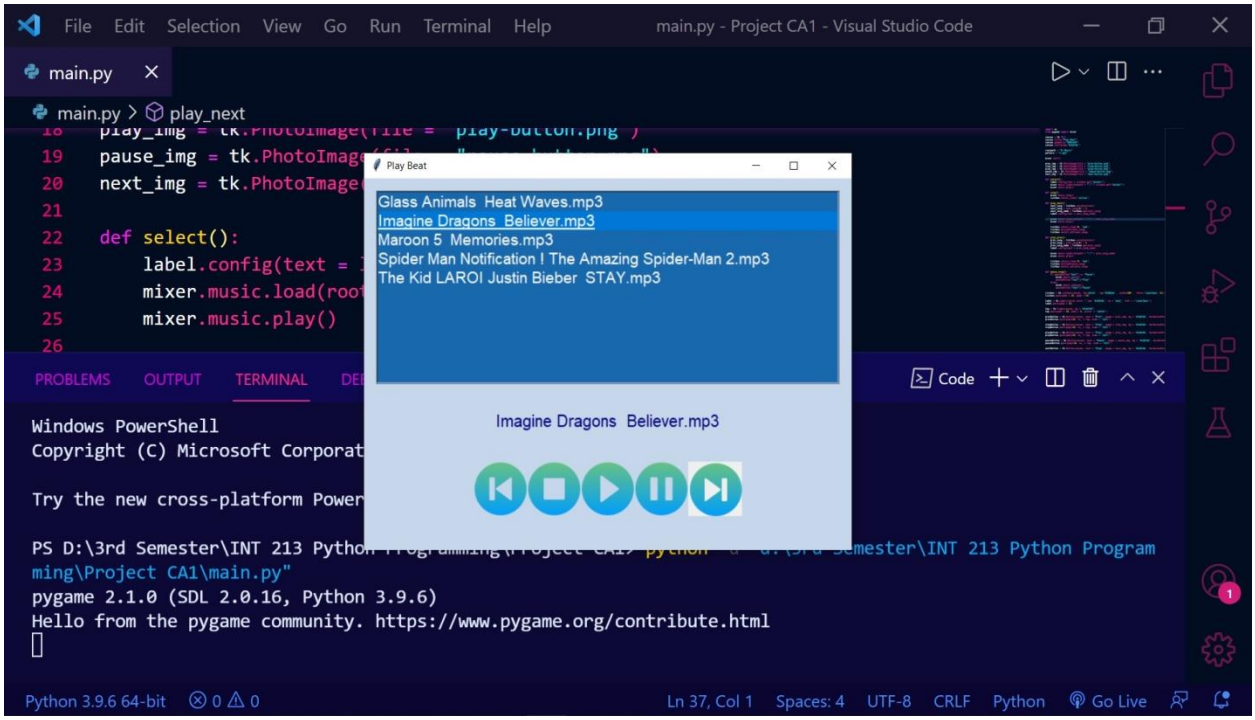
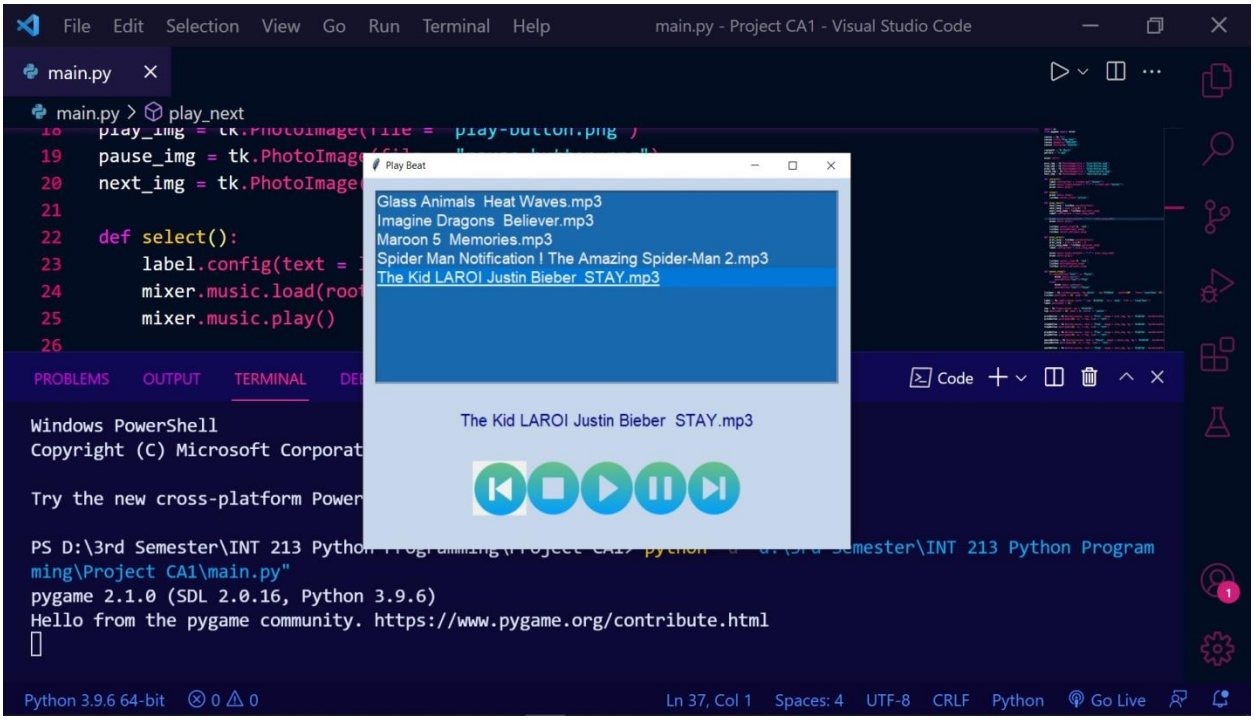
powershell
Code
Python 3.9.6 64-bit
Ln 37, Col 1 Spaces: 4 UTF-8 CRLF Python Go Live

➢ Forwards



➢ Backwards



CONCLUSION

The MP3 player is a device for playing and listening to digital audio files, which can be MP3 files or other audio files. The player was created in Python language. A GUI implementation of the application has been developed that is simple and easy to use. The application gives the user options: play the song, pause or resume the song, play the previous song, and play the next song. The player can also change the location of folder from source code. It has a large display area in which the playlist is visible. Once a track has been selected and played we can listen to it and view details, the song is at the top of the multimedia controls on the screen. This information includes details about the song, such as: the name of the song, the name of the singer and file format (mp3).

REFERENCES

To conduct this project the following tools have been used :

- Tkinter: https://docs.python.org/3/library/tkinter.html
- Pygame: https://pypi.org/project/pygame/

1.1 For grasping the basic pre-requisites and modules
https://www.studytonight.com/tkinter/music-player-application-using-tkinter

1.2 Understanding the flow of the program:
https://blog.devgenius.io/mp3-player-using-tkinter-and-mutagen-in-python-6fec027aeced