Visvesvaraya Technological University

Jnana Sangama, Belagavi – 590018, Karnataka

Project Report

on

"MP3 Player using Python"

Submitted By

Likith R - 1GA19CS079

Nayan V Bhandari – 1GA19CS095

Prajna N – 1GA19CS109

Completed as an Internship Project at

LiveWire Pvt. Ltd., Bengaluru

GLOBAL ACADEMY OF TECHNOLOGY

Department of Computer Science and Engineering

(Accredited by NBA 2019-2022)

Raja Rajeshwari Nagar, Bengaluru – 560 098

ACKNOWLEDGMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of the people who made it possible and whose constant encouragement and guidance crowned our efforts with success.

We consider ourselves proud, to be part of **Global Academy of Technology** family, the institution which stood by our way in endeavors.

We express our deep and sincere thanks to our Principal **Dr. N. Ranapratap Reddy** for his support.

We are grateful to **Dr. Bhagyashri R Hanji,** Professor and Head, Dept. of Computer Science & Engineering who is source of inspiration and of invaluable help in channelizing my efforts in right direction.

We also thank **LiveWire** for giving us an opportunity to intern and for their constant support throughout the journey.

Finally, we are grateful to our parents and friends for their unconditional support and help during our Project work.

Likith R – 1GA19CS079

Nayan V Bhandari – 1GA19CS095

Prajna N – 1GA19CS109

TABLE OF CONTENTS

SL. No	Description	Page no
1	Abstract	1
2	Our Role	2
3	Packages Used	3
4	Code	5
5	Output	9
6	References	10
7	Conclusion	11
8	Certificates	12

ABSTRACT

The objective of the project was to design a MP3 player that can play MP3 files chosen by the user. The MP3 player also displays details about the MP3 file such as name, length and a completion bar that depicts the length of completion of the file. Further, the application also allows the user to choose mutliple files and create a playlist. Then, the user can also move through the playlist using the “Next” and “Previous” button provided.

OUR ROLE

My role in this project was that of a student developer. My task in the project was to learn Python and acquire the necessary skills to develop applications using Python.Once done, apply this logic to develop the said application with a simple UI.

PACKAGES USED

Pygame: Pygame is a set of Python modules designed for writing video games. Pygame adds functionality on top of the excellent SDL library. This allows you to create fully featured games and multimedia programs in the python language. I have used this package for the sole purpose of playing the audio file.

OS: The OS module in Python provides functions for interacting with the operating system. OS comes under Python's standard utility modules. This module provides a portable way of using operating system-dependent functionality.

Config: This module allows a hierarchical configuration scheme with support for mappings and sequences, cross-references between one part of the configuration and another, the ability to flexibly access real Python objects without full-blown eval(), an include facility, simple expression evaluation and the ability to change, save, cascade and merge configurations. Interfaces easily with environment variables and command-line options. I have used this module to build a data structre that can store the music playlist.

Tkinter: The tkinter package ("Tk interface") is the standard Python interface to the Tcl/Tk GUI toolkit. Both Tk and tkinter are available on most Unix platforms, including macOS, as well as on Windows systems. This module has served as the base to build my GUI for this application.

Mutagen: Mutagen is a Python module to handle audio metadata. It supports ASF, FLAC, MP4, Monkey's Audio, MP3, Musepack, Ogg Opus, Ogg FLAC, Ogg Speex, Ogg Theora, Ogg Vorbis, True Audio, WavPack, OptimFROG, and AIFF audio files. All versions of ID3v2 are supported, and all standard ID3v2.4 frames are parsed. It can read Xing headers to accurately calculate the bitrate and length of MP3s. ID3 and APEv2 tags can be edited regardless of audio format. It can also manipulate Ogg streams on an individual packet/page level. Name of the song, length of the song and other metadata of the files has been accessed using this module.

PIL: Python Imaging Library (expansion of PIL) is the de facto image processing package for Python language. It incorporates lightweight image processing tools that aids in editing, creating and saving images. A picture is been displayed in the application to make the UI look better. This module was used for the purpose.

Time: This module provides various time-related functions. The progress and progress bar has been constructed with the help of this module.

CODE

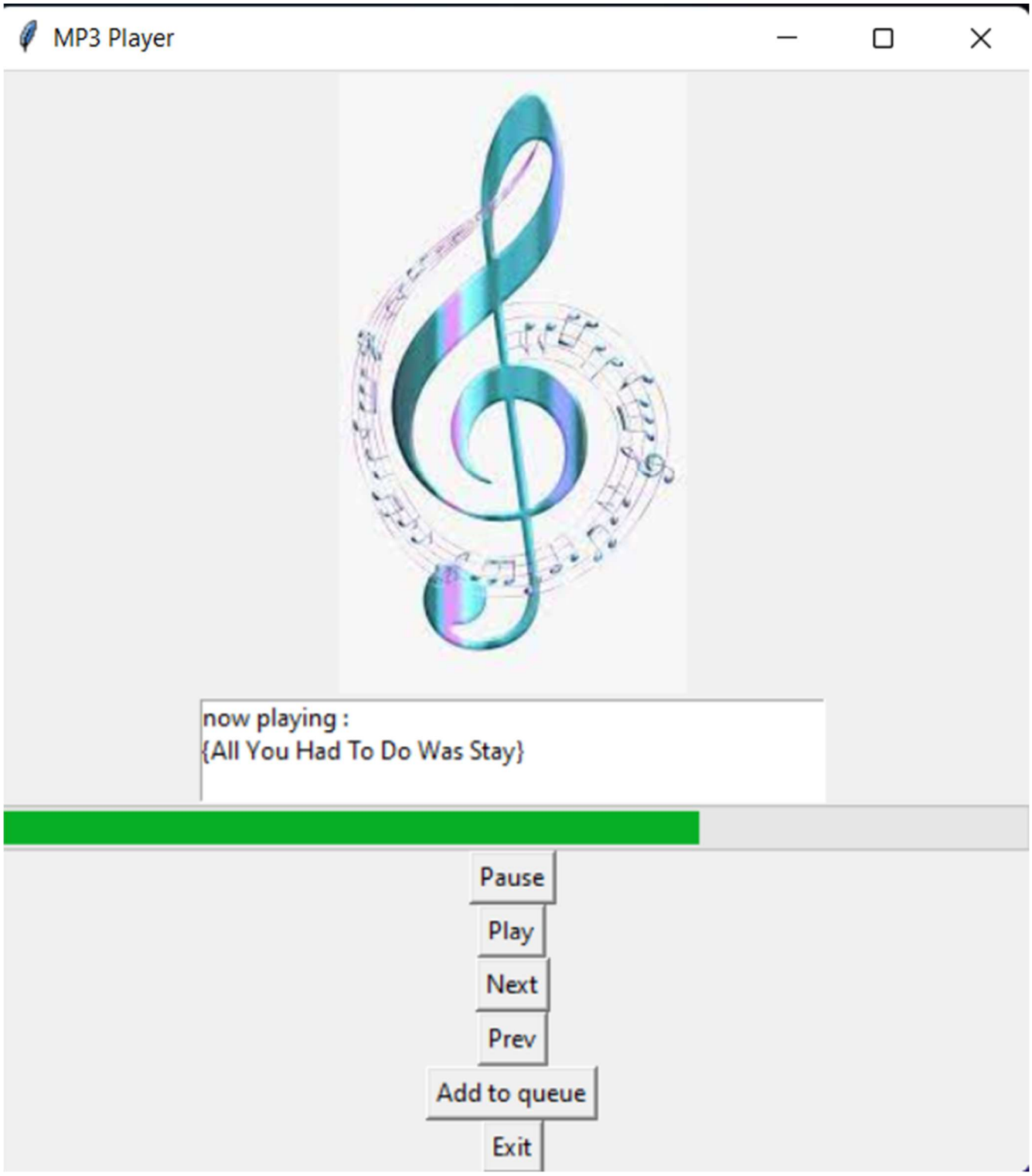
```
import pygame
import os
import config
import tkinter
from tkinter.filedialog import *
from tkinter import *
from tkinter import messagebox
from tkinter import ttk
from mutagen.easyid3 import EasyID3
from tkinter.messagebox import *
from PIL import Image, ImageTk
from time import time
from mutagen.mp3 import MP3

SONG_END = pygame.USEREVENT + 1
pygame.init()
config.i=[]
config.d=0
config.a=''



def play_list():
    directory = askopenfilenames()
    for song in directory:
        config.i.append(song)
    return config.i



def check_music():
    for event in pygame.event.get():
         if event.type == SONG_END:
              next_song()
```

```
    root.after(10, check_music)


def play_music():
    pygame.mixer.init()
    pygame.mixer.music.set_endevent(SONG_END)
    config.a=config.i[config.d]
    pygame.mixer.music.load(config.a)
    pygame.mixer.music.play()
    config.paused = False
    listbox.delete(1)
    try:
        song = EasyID3(config.a)
        listbox.insert(1,song['title'])
    except:
        listbox.insert(1,"No file name found")
    root.after(10, check_music)
    update_pbar()



def pause():
    if (config.paused == True):
        pygame.mixer.music.unpause()
        config.paused= False
    elif (config.paused == False):
        pygame.mixer.music.pause()
        config.paused=True
def next_song():
    if (config.d<(len(config.i)-1)):
        config.d+=1
        play_music()
def prev_song():
    if (config.d>0):
```

```
        config.d-=1
        play_music()

def update_pbar():
    song = MP3(config.a)
    song_length = song.info.length
    pos= pygame.mixer.music.get_pos()/1000
    perc = (pos/song_length)*100
    progress_bar['value'] = perc
    root.after(100,update_pbar)



def exit():
    pygame.mixer.music.stop()
    os._exit(0)
    root.destroy()

root = Tk()
root.title('MP3 Player')
root.minsize(300,300)



image = Image.open(r"cleff.png")
photo = ImageTk.PhotoImage(image)

label1 = Label(image=photo)
label1.image = photo
label1.pack()

listbox = Listbox(root, height = 3, width = 50)
listbox.pack()
listbox.insert(0, "now playing :")
```

```
progress_bar = ttk.Progressbar(root, orient='horizontal', mode='determinate', length=500)
progress_bar.pack()

pausebutton = tkinter.Button(root,command = pause, text='Pause')
pausebutton.pack()

playbutton=Button(root,command = play_music,text='Play')
playbutton.pack()


nextbutton = Button(root,command = next_song, text = 'Next')
nextbutton.pack()

previousbutton = Button(root,command = prev_song,text = 'Prev')
previousbutton.pack()

queuebutton=Button(root,command = play_list, text='Add to queue')
queuebutton.pack()

exitbutton=Button(root,command = exit, text='Exit')
exitbutton.pack()


root.mainloop()
```

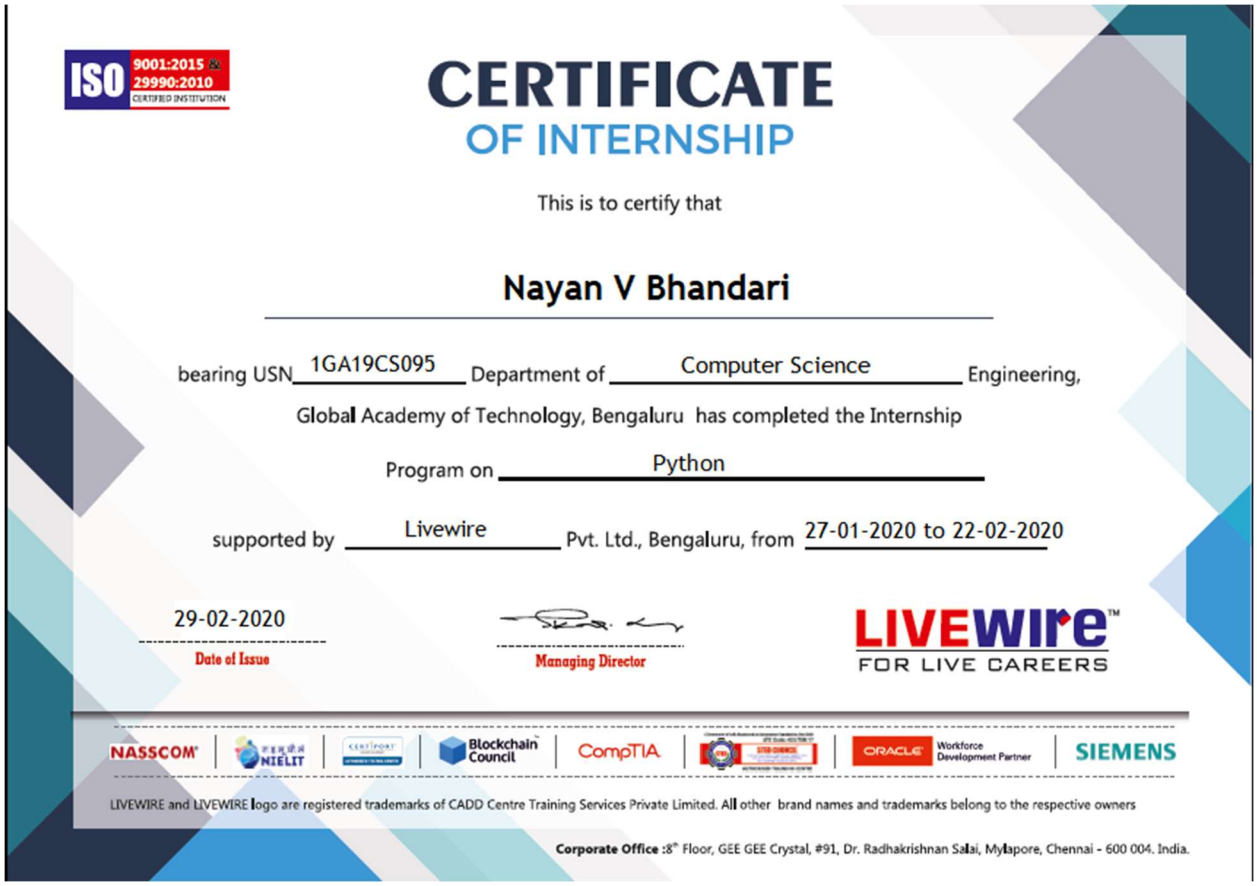
OUTPUT


MP3 Player
now playing :
{All You Had To Do Was Stay}
Pause
Play
Next
Prev
Add to queue
Exit

REFRENCES

CONCLUSION

CERTIFICATE



ISO 9001:2015 & 29990:2010 CERTIFIED INSTITUTION

CERTIFICATE
OF INTERNSHIP

This is to certify that

Nayan V Bhandari

bearing USN 1GA19CS095 Department of Computer Science Engineering,

Global Academy of Technology, Bengaluru has completed the Internship

Program on Python

supported by Livewire Pvt. Ltd., Bengaluru, from 27-01-2020 to 22-02-2020

29-02-2020
Date of Issue

Managing Director

LIVEWIRE™
FOR LIVE CAREERS

NASSCOM | NIELIT | Blockchain Council | CompTIA | ORACLE Workforce Development Partner | SIEMENS

Corporate Office :8th Floor, GEE GEE Crystal, #91, Dr. Radhakrishnan Salai, Mylapore, Chennai - 600 004. India.

CERTIFICATE

ISO 9001:2015 & 29990:2010 CERTIFIED INSTITUTION

CERTIFICATE
OF INTERNSHIP

This is to certify that

Prajna N

bearing USN 1GA19CS109 Department of Computer Science Engineering,

Global Academy of Technology, Bengaluru has completed the Internship

Program on Python

supported by Livewire Pvt. Ltd., Bengaluru, from 27-01-2020 to 22-02-2020

29-02-2020
Date of Issue

Managing Director

LIVEWIRE™
FOR LIVE CAREERS

NASSCOM | NIELIT | Blockchain Council | CompTIA | ORACLE Workforce Development Partner | SIEMENS

LIVEWIRE and LIVEWIRE logo are registered trademarks of CADD Centre Training Services Private Limited. All other brand names and trademarks belong to the respective owners

Corporate Office :8th Floor, GEE GEE Crystal, #91, Dr. Radhakrishnan Salai, Mylapore, Chennai - 600 004. India.

CERTIFICATE

ISO 9001:2015 29990:2010 CERTIFIED INSTITUTION

CERTIFICATE
OF INTERNSHIP

This is to certify that

Likith.R

bearing USN 1GA19CS079 Department of Computer Science Engineering,

Global Academy of Technology, Bengaluru has completed the Internship

Program on Python

supported by Livewire Pvt. Ltd., Bengaluru, from 27-01-2020 to 22-02-2020

29-02-2020
Date of Issue

Managing Director

LIVEWIRE™
FOR LIVE CAREERS

NASSCOM | NIELIT | Blockchain Council | CompTIA | ORACLE Workforce Development Partner | SIEMENS

Corporate Office :8th Floor, GEE GEE Crystal, #91, Dr. Radhakrishnan Salai, Mylapore, Chennai - 600 004. India.