

Music Player using Python

AIM:-

To create a music player using Python.

ABSTRACT:-

A music player is a software application that allows users to play audio files on their devices. In this article, we will explore how to create a music player using Python programming language and several modules like tkinter, datetime, pygame, mutagen, os, threading, and time.

The first module we will use is Tkinter, which is a standard Python library for creating graphical user interfaces (GUI). We will use it to create the basic interface for our music player, including buttons for playing, pausing, and stopping the music, as well as a list of songs.

Next, we will use the datetime module to display the current time and date on the music player interface. This will help users keep track of time while enjoying their music.

The pygame module is a set of Python modules designed for writing video games. We will use it to play the audio files in our music player, including MP3, WAV, and other audio file formats.

The mutagen module is a Python library for handling audio metadata. We will use it to extract information like the artist, title, and album from the audio files and display them on the music player interface.

The os module is a standard Python library for interacting with the operating system. We will use it to navigate the file system and load audio files into our music player.

The threading and time modules are used to ensure smooth playback of audio files. Threading allows us to run multiple tasks at the same time, while time is used to control the timing of the audio playback.

By combining these modules, we can create a powerful and customizable music player using Python. Users can load their favorite audio files, view metadata information, and enjoy smooth, uninterrupted playback.

REQUIREMENTS:-

Visual Studio Code with Python modules

Tkinter Module

Date time Module

Pygame Module

Mutagen Module

OS Module

Threading Module

Time Module

PROCEDURE:-

1. Import the necessary modules including tkinter, datetime, pygame.mixer, tkinter.messagebox, filedialog, ttkthemes, ttk, mutagen.mp3, and os.
2. Create an instance of the themed_tk class of the ttkthemes module and configure the theme.
3. Create a menu bar with 'File', 'View', and 'Help' cascading menus using the menu widget from tkinter.
4. Define functions for browsing and adding files to the playlist, deleting songs from the playlist, showing the song information, and displaying the 'About Me' and 'How to Use' messages.
5. Initialize the pygame mixer for playing the music.
6. Create a left frame to display the playlist and buttons to add and delete songs.
7. Create a right frame to display the song length, current time, and buttons to play, pause, stop, and rewind the song.
8. Define a function to show the details of the song and start the countdown timer.
9. Define a function to play the music selected from the playlist, stop the current music, and display the details of the song.
10. Define a function to stop the current music and display the 'Music Stopped' message.
11. Define a function to pause the current music and display the 'Music Paused' message.
12. Create global variables for paused and filename_path.
13. Create labels to display the length of the song and the current time.
14. Create buttons to play, pause, stop, and rewind the song.
15. Pack all the widgets and frames.
16. Run the mainloop of the themed_tk instance.

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TUNE.py - music player - Visual Studio Code

TUNE.py > about_me
1 from tkinter import * # importing this for making a window
2 from datetime import datetime # importing this to see total
3 from pygame import mixer # importing this for playing music
4 import tkinter.messagebox
5 from tkinter import filedialog
6 from ttkthemes import themed_tk as tk
7 from tkinter import ttk
8 from mutagen.mp3 import MP3
9 import os
10 import threading
11 import time
12 start_time=datetime.now()
13
14 root=tk.ThemedTk()
15 root.get_themes()
16 root.set_theme("breeze")
17
18 menubar= Menu(root)
19 root.config(menu=menubar)
20
21 status_bar= ttk.Label(root,text='Welcome to Tune !!', relief
22 status_bar.pack(side=BOTTOM, fill=X)
23
24 playlist=[]
25
26 def browse_file():
27     global filename_path
28     filename_path=filedialog.askopenfilename()
29     add_to_playlist(filename_path)
30
31 def add_to_playlist(filename):
32     filename=os.path.basename(filename)
33     index=0;
34
35     def add_to_playlist(filename):
36         filename=os.path.basename(filename)
37         index=0;
38         playlistbox.insert(index,filename)
39         playlist.insert(index,filename_path)
40         index+=1
41
42     subMenu=Menu(menubar, tearoff=0)
43     menubar.add_cascade(label='File', menu=subMenu)
44     subMenu.add_command(label='Open', command=browse_file)
45     subMenu.add_command(label='Exit', command=root.destroy)
46
47     def song_info():
48         tkinter.messagebox.showinfo("About Song",os.path.basename
49
50     subMenu=Menu(menubar, tearoff=0)
51     menubar.add_cascade(label='View', menu=subMenu)
52     subMenu.add_command(label='About Song', command=song_info)
53
54     def about_me():
55         tkinter.messagebox.showinfo('About Me','This software wa
56
57     def how_to_use():
58         tkinter.messagebox.showinfo('How to use',' Click on "ADD
59         subMenu=Menu(menubar, tearoff=0)
60         menubar.add_cascade(label='Help', menu=subMenu)
61         subMenu.add_command(label='About Me',command= about_me)
62         subMenu.add_command(label='How To Use',command= how_to_use)
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64     mixer.init() # initializing the mixer
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File Edit Selection View Go Run Terminal Help TUNEpy - music player - Visual Studio Code
TUNEpy.py X TUNEpy M X
TUNEpy.py > about_me
105 mins=round(mins)
106 secs=round(secs)
107 timeformat='{02d}:{02d}'.format(mins,secs)
108 lengthlabel['text']='Total Length '+' - ' + timeformat
109 t1=threading.Thread(target=start_count,args=(total_lengt
110 t1.start()
111
112 def start_count(t):
113     global paused
114     current_time=0;
115     while current_time<=t and mixer.music.get_busy():
116         if paused:
117             continue
118         else:
119             mins,secs=divmod(current_time,60)
120             mins=round(mins)
121             secs=round(secs)
122             timeformat='{02d}:{02d}'.format(mins,secs)
123             currenttimeLabel['text']='Current Time: '+' - '
124             time.sleep(1)
125             current_time+=1
126
127 def play_music():
128     global paused
129     if paused:
130         mixer.music.unpause()
131         status_bar['text']='Music Resumed+' +os.path.basename
132         paused=False
133     else:
134         try:
135             stop_music()
136             time.sleep(1)
137             selected_song=playlistbox.curselection()
138
139 else:
140     try:
141         stop_music()
142         time.sleep(1)
143         selected_song=playlistbox.curselection()
144         selected_song=int(selected_song[0])
145         play_it=playlist[selected_song]
146         mixer.music.load(play_it)
147         mixer.music.play()
148         status_bar['text']='Playing Music+' +os.path.t
149         show_details(play_it)
150     except:
151         tkinter.messagebox.showerror('Error !!','Please
152
153 def stop_music():
154     mixer.music.stop()
155     status_bar['text']='Music Stopped'
156
157 paused=False
158
159 def pause_music():
160     global paused
161     paused=True
162     mixer.music.pause()
163     status_bar['text']='Music Paused'
164
165 def rewind_music():
166     play_music()
167     status_bar['text']='Music Restarted'
168
169 def set_vol(val):
170     global volume
171     volume = float(val)/100
172
173 You, 9 seconds ago Ln 52, Col 84 Spaces: 4 UTF-8 CRUF Python 3.10.2 64-bit Go Live
```



```
File Edit Selection View Go Run Terminal Help
TUNE.py - music player - Visual Studio Code

TUNE.py M X
TUNE.py > about_me
160 play_music()
161     status_bar['text']='Music Restarted'
162
163 def set_vol(val):
164     global volume
165     volume = float(val)/100
166     mixer.music.set_volume(volume)
167
168 muted=False
169
170 def mute_music():
171     global muted
172     if muted:
173         mixer.music.set_volume(0.07)
174         volumeBtn.configure(image=volume_photo)
175         scale.set(7)
176         muted=False
177     else:
178         mixer.music.set_volume(0)
179         volumeBtn.configure(image=mute_photo)
180         scale.set(0)
181         muted=True
182
183 middleframe= Frame(rightframe)
184 middleframe.pack(padx=15, pady=15)
185
186 play_photo= PhotoImage(file='images/play_btn.png')
187 playBtn=ttk.Button(middleframe, image=play_photo, command= p
188 playBtn.grid(row=0, column=0, padx=7)
189
190 stop_photo= PhotoImage(file='images/stop_btn.png')
191 stopBtn=ttk.Button(middleframe, image=stop_photo, command=st
192 stopBtn.grid(row=0, column=1, padx=7)
193
194 pause_photo= PhotoImage(file='images/pause_btn.png')
195 pauseBtn=ttk.Button(middleframe, image=pause_photo, command=
196 pauseBtn.grid(row=0, column=2, padx=7)
197
198 bottomframe= Frame(rightframe)
199 bottomframe.pack(padx=10, pady=15)
200
201 rewind_photo= PhotoImage(file='images/rewind_btn.png')
202 rewindBtn=ttk.Button(bottomframe, image=rewind_photo, commar
203 rewindBtn.grid(row=0, column=0, padx=13, pady=5)
204
205 mute_photo= PhotoImage(file='images/mute_btn.png')
206 volume_photo= PhotoImage(file='images/volume_btn.png')
207 volumeBtn=ttk.Button(bottomframe, image=volume_photo, commar
208 volumeBtn.grid(row=0, column=1, padx=13, pady=5)
209
210 scale=ttk.Scale(bottomframe, from_=0,to=100, orient=HORIZONT
211 scale.set(7)
212 mixer.music.set_volume(.07)
213 scale.grid(row=0, column=2, pady=15)
214
215 def on_closing():
216     stop_music()
217     root.destroy()
218
219 ol("WM_DELETE_WINDOW",on_closing)
```

```
File Edit Selection View Go Run Terminal Help
TUNE.py - music player - Visual Studio Code

TUNE.py M X
TUNE.py > about_me
194 pause_photo= PhotoImage(file='images/pause_btn.png')
195 pauseBtn=ttk.Button(middleframe, image=pause_photo, command=pause_music)
196 pauseBtn.grid(row=0, column=2, padx=7)
197
198 bottomframe= Frame(rightframe)
199 bottomframe.pack(padx=10, pady=15)
200
201 rewind_photo= PhotoImage(file='images/rewind_btn.png')
202 rewindBtn=ttk.Button(bottomframe, image=rewind_photo, command=rewind_music)
203 rewindBtn.grid(row=0, column=0, padx=13, pady=5)
204
205 mute_photo= PhotoImage(file='images/mute_btn.png')
206 volume_photo= PhotoImage(file='images/volume_btn.png')
207 volumeBtn=ttk.Button(bottomframe, image=volume_photo, command=mute_music)
208 volumeBtn.grid(row=0, column=1, padx=13, pady=5)
209
210 scale=ttk.Scale(bottomframe, from_=0,to=100, orient=HORIZONTAL, command= set_vol)
211 scale.set(7)
212 mixer.music.set_volume(.07)
213 scale.grid(row=0, column=2, pady=15)
214
215 def on_closing():
216     stop_music()
217     root.destroy()
218
219 root.protocol("WM_DELETE_WINDOW",on_closing)
220 root.mainloop()
221
222 end_time=datetime.now()
223 print (end_time-start_time)
```

Main Code:-

```
from tkinter import * # importing this for making a window
from datetime import datetime # importing this to see total program running time
from pygame import mixer # importing this for playing music and controlling them
import tkinter.messagebox
from tkinter import filedialog
from ttkthemes import themed_tk as tk
from tkinter import ttk
from mutagen.mp3 import MP3
import os
import threading
import time
start_time=datetime.now()

root=tk.ThemedTk()
root.get_themes()
root.set_theme("breeze")

menubar=Menu(root)
root.config(menu=menubar)

status_bar=ttk.Label(root,text='Welcome to Tune !!',relief=SUNKEN, anchor=W, font='ComicSansMS 11')
status_bar.pack(side=BOTTOM, fill=X)

playlist=[]

def browse_file():
    global filename_path
    filename_path=filedialog.askopenfilename()
    add_to_playlist(filename_path)

def add_to_playlist(filename):
    filename=os.path.basename(filename)
    index=0;
    playlistbox.insert(index,filename)
    playlist.insert(index,filename_path)
    index+=1

subMenu=Menu(menubar, tearoff=0)
menubar.add_cascade(label='File', menu=subMenu)
subMenu.add_command(label='Open', command=browse_file)
subMenu.add_command(label='Exit', command=root.destroy)

def song_info():
    tkinter.messagebox.showinfo("About Song",os.path.basename(filename_path))

subMenu=Menu(menubar, tearoff=0)
menubar.add_cascade(label='View', menu=subMenu)
subMenu.add_command(label='About Song', command=song_info)
```

```

def about_me():
    tkinter.messagebox.showinfo('About Me','This software was created by Heli Asher.')

def how_to_use():
    tkinter.messagebox.showinfo('How to use',' Click on "ADD" -- to add the song\n Select the Song\n Click
on "Play Button" -- to play the song\n Click on "Pause Button" -- to pause the song\n Click on "Stop
Button" -- to stop the song\n Click on "Revind Button" -- to revind the song\n Click on "DEL" -- to delete
the song\n')
    subMenu=Menu(menubar, tearoff=0)
    menubar.add_cascade(label='Help', menu=subMenu)
    subMenu.add_command(label='About Me',command= about_me)
    subMenu.add_command(label='How To Use',command= how_to_use)

mixer.init() # initializing the mixer

root.title('Tune')
root.iconbitmap(r'images/tune.ico')

leftframe=Frame(root)
leftframe.pack(side=LEFT, padx=15, pady=30)

playlistbox=Listbox(leftframe)
playlistbox.pack()

addbtn=ttk.Button(leftframe, text='+ Add', command=browse_file)
addbtn.pack(side=LEFT,padx=3)

def del_song():
    selected_song=playlistbox.curselection()
    selected_song=int(selected_song[0])
    playlistbox.delete(selected_song)
    playlist.pop(selected_song)

delbtn=ttk.Button(leftframe,text='- Del', command=del_song)
delbtn.pack(side=LEFT,padx=3)

rightframe=Frame(root)
rightframe.pack(padx=15,pady=30)

topframe=Frame(rightframe)
topframe.pack()

lengthlabel= ttk.Label(topframe,text='Total Length -----', relief=GROOVE, font='ComicSansMS 11 bold')
lengthlabel.pack(pady=5)

currenttimelabel= ttk.Label(topframe,text='Current time ----- ', relief=GROOVE, font='ComicSansMS 11
bold')
currenttimelabel.pack(pady=3)

def show_details(play_song):

```

```

file_data= os.path.splitext(play_song)
if file_data[1]=='.mp3':
    audio=MP3(play_song)
    total_length=audio.info.length
else:
    a=mixer.Sound(play_song)
    total_length=a.get_length()
mins, secs=divmod(total_length,60)
mins=round(mins)
secs=round(secs)
timeformat='{:02d}:{:02d}'.format(mins,secs)
lengthlabel['text']='Total Length '+' - ' + timeformat
t1=threading.Thread(target=start_count,args=(total_length,))
t1.start()

def start_count(t):
    global paused
    current_time=0;
    while current_time<=t and mixer.music.get_busy():
        if paused:
            continue
        else:
            mins, secs=divmod(current_time,60)
            mins=round(mins)
            secs=round(secs)
            timeformat='{:02d}:{:02d}'.format(mins,secs)
            currenttimelabel['text']='Current Time: '+' - ' + timeformat
            time.sleep(1)
            current_time+=1

def play_music():
    global paused
    if paused:
        mixer.music.unpause()
        status_bar['text']='Music Resumed'+' '+os.path.basename(filename_path)
        paused=False
    else:
        try:
            stop_music()
            time.sleep(1)
            selected_song=playlistbox.curselection()
            selected_song=int(selected_song[0])
            play_it=playlist[selected_song]
            mixer.music.load(play_it)
            mixer.music.play()
            status_bar['text']='Playing Music'+' '+os.path.basename(play_it)
            show_details(play_it)
        except:
            tkinter.messagebox.showerror('Error !!','Please select a music file first !!')

def stop_music():

```



```

    mixer.music.stop()
    status_bar['text']='Music Stopped'

paused=False

def pause_music():
    global paused
    paused=True
    mixer.music.pause()
    status_bar['text']='Music Paused'

def rewind_music():
    play_music()
    status_bar['text']='Music Restarted'

def set_vol(val):
    global volume
    volume = float(val)/100
    mixer.music.set_volume(volume)

muted=False

def mute_music():
    global muted
    if muted:
        mixer.music.set_volume(0.07)
        volumeBtn.configure(image=volume_photo)
        scale.set(7)
        muted=False
    else:
        mixer.music.set_volume(0)
        volumeBtn.configure(image=mute_photo)
        scale.set(0)
        muted=True

middleframe= Frame(rightframe)
middleframe.pack(padx=15, pady=15)

play_photo= PhotoImage(file='images/play_btn.png')
playBtn=ttk.Button(middleframe, image=play_photo, command= play_music)
playBtn.grid(row=0, column=0, padx=7)

stop_photo= PhotoImage(file='images/stop_btn.png')
stopBtn=ttk.Button(middleframe, image=stop_photo, command=stop_music)
stopBtn.grid(row=0, column=1, padx=7)

pause_photo= PhotoImage(file='images/pause_btn.png')
pauseBtn=ttk.Button(middleframe, image=pause_photo, command=pause_music)
pauseBtn.grid(row=0, column=2, padx=7)

bottomframe= Frame(rightframe)

```

```
bottomframe.pack(padx=10,pady=15)
```

```
rewind_photo= PhotoImage(file='images/rewind_btn.png')
rewindBtn=ttk.Button(bottomframe, image=rewind_photo, command=rewind_music)
rewindBtn.grid(row=0, column=0, padx=13, pady=5)
```

```
mute_photo= PhotoImage(file='images/mute_btn.png')
volume_photo= PhotoImage(file='images/volume_btn.png')
volumeBtn=ttk.Button(bottomframe, image=volume_photo, command=mute_music)
volumeBtn.grid(row=0, column=1, padx=13, pady=5)
```

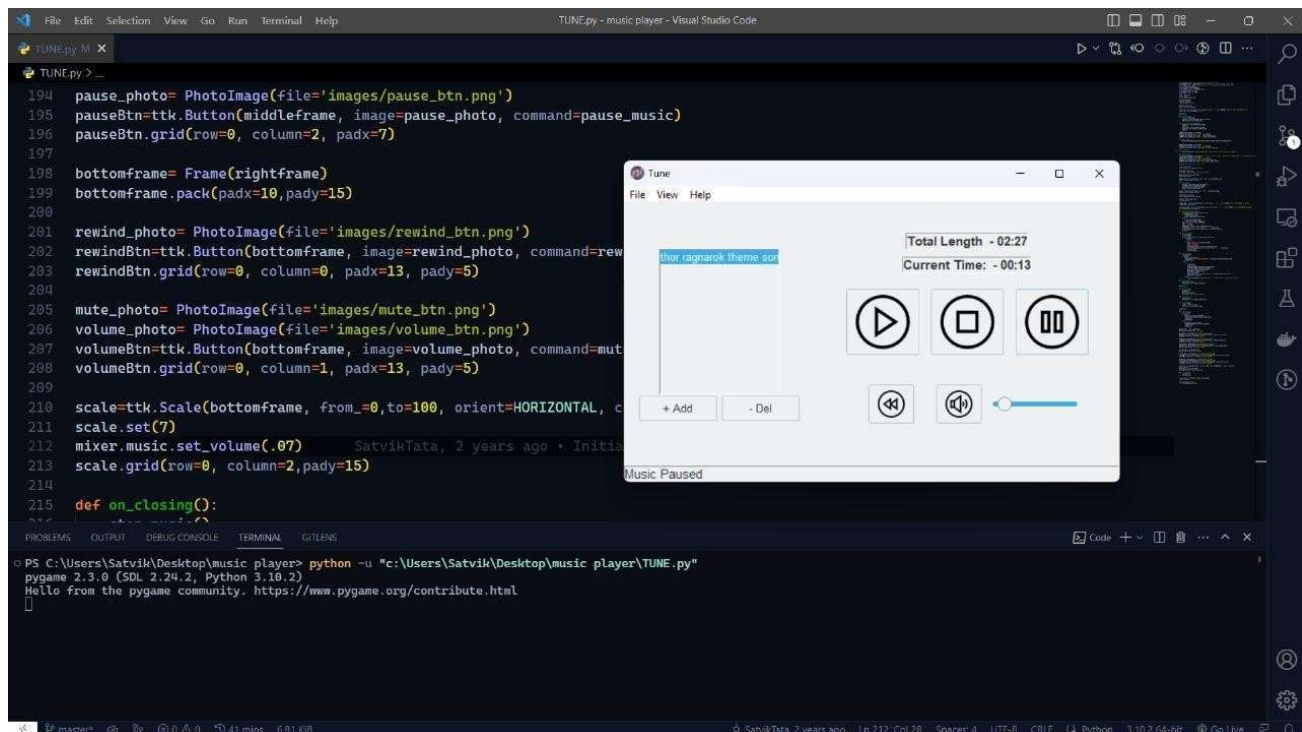
```
scale=ttk.Scale(bottomframe, from_=0,to=100, orient=HORIZONTAL, command= set_vol)
scale.set(7)
mixer.music.set_volume(.07)
scale.grid(row=0, column=2,pady=15)
```

```
def on_closing():
    stop_music()
    root.destroy()
```

```
root.protocol("WM_DELETE_WINDOW",on_closing)
root.mainloop()
```

```
end_time=datetime.now()
print (end_time-start_time)
```

OUTPUT:



RESULT:-

Therefore we successfully created a music player from python.

CONCLUSION:-

In conclusion, the "Tune" music player program is a simple but functional program that allows users to create a playlist of their favorite music files and play, pause, stop, rewind, and delete songs from the playlist. The program uses the Tkinter library to create a graphical user interface (GUI) that is easy to navigate, and the Pygame library for playing and controlling music.

The program also provides additional features like showing song details, such as the total length and current time, and the ability to open a file dialog box to browse and add new music files to the playlist. The program is designed with an intuitive interface that makes it easy to use for users of all levels of experience.

Overall, the "Tune" music player is a great example of a Python program that uses various libraries to create a fully functional music player application that provides users with a high-quality user experience.