Meerut Institute of Engineering and Technology, Meerut

Session:2021-2022

MINI PROJECT REPORT

On

"PIANO USING PYTHON"

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

Submitted to –

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(Department of computer science & Engineering)

Submitted by-

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3rd SEMESTER

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY, MEERUT

DECLERATION

I hereby declare that the project entitled – “PY-PIANO” which is being submitted as Mini project in department of Computer Science and engineering to Meerut Institute of Engineering and Technology , Meerut (U.P.) is an authenticate record of my genuine work done under the guidance of MR.ABHAY JAIN of Computer Science and Engineering ,Meerut Institute of Engineering and Technology ,Meerut.

Date: 2 December 2021 AVANTIKA

Place: Meerut 2000681530014

CERTIFICATE

This is to certify that mini project report entitled- “PY-PIANO” submitted by “AVANTIKA” has been carried under the guidance of MR.ABHAY JAIN of Computer Science and Engineering, Meerut Institute of Engineering and Technology, Meerut. This project report is approved for Mini project (KCN 354) in 3rd semester in computer science and engineering from Meerut Institute of Engineering and Technology, Meerut.

Supervisor- MR. ABHAY JAIN

Date: 2 December 2021

ACKNOWLEDGEMENT

I express my sincere indebtedness towards our guide MR. ABHAY JAIN of Computer Science and Engineering, Meerut Institute of Engineering and Technology, Meerut for his valuable suggestion, guidance and supervision throughout the work. Without his king patronage and guidance the project would not have taken shape. I would also like to express my gratitude and sincere regards for his kind approval of the project. Time to time counseling and advises.

I would also like to thank our HOD DR. SWATI SHARMA, Department of Computer Science and engineering, Meerut Institute of Engineering and Technology, Meerut for his expert advice and counseling from time to time.

I owe sincere thanks to all the faculty members in the department of Computer Science and engineering for their kind guidance and encouragement time to time.

Date: 2 December 2021 AVANTIKA

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CHAPTER 1

Introduction

The purpose of this report is to be used as a guide to assist the user in getting familiar with how to design a “**piano**” using python programming language.

Piano is a musical instrument that you play by pressing black and white keys on a keyboard.

Piano comes from the original Italian name for the instrument: **piano e forte**, “**soft and loud**”

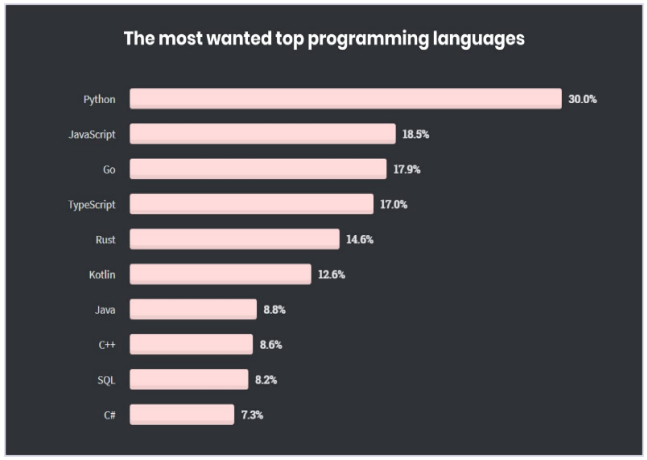
There are twelve possible keys any particular song can be played in. These are A, A#/Bb, B, C, C#/Db, D, D#/Eb, E, F, F#/Gb, G, and G#/Ab.

CHAPTER 2

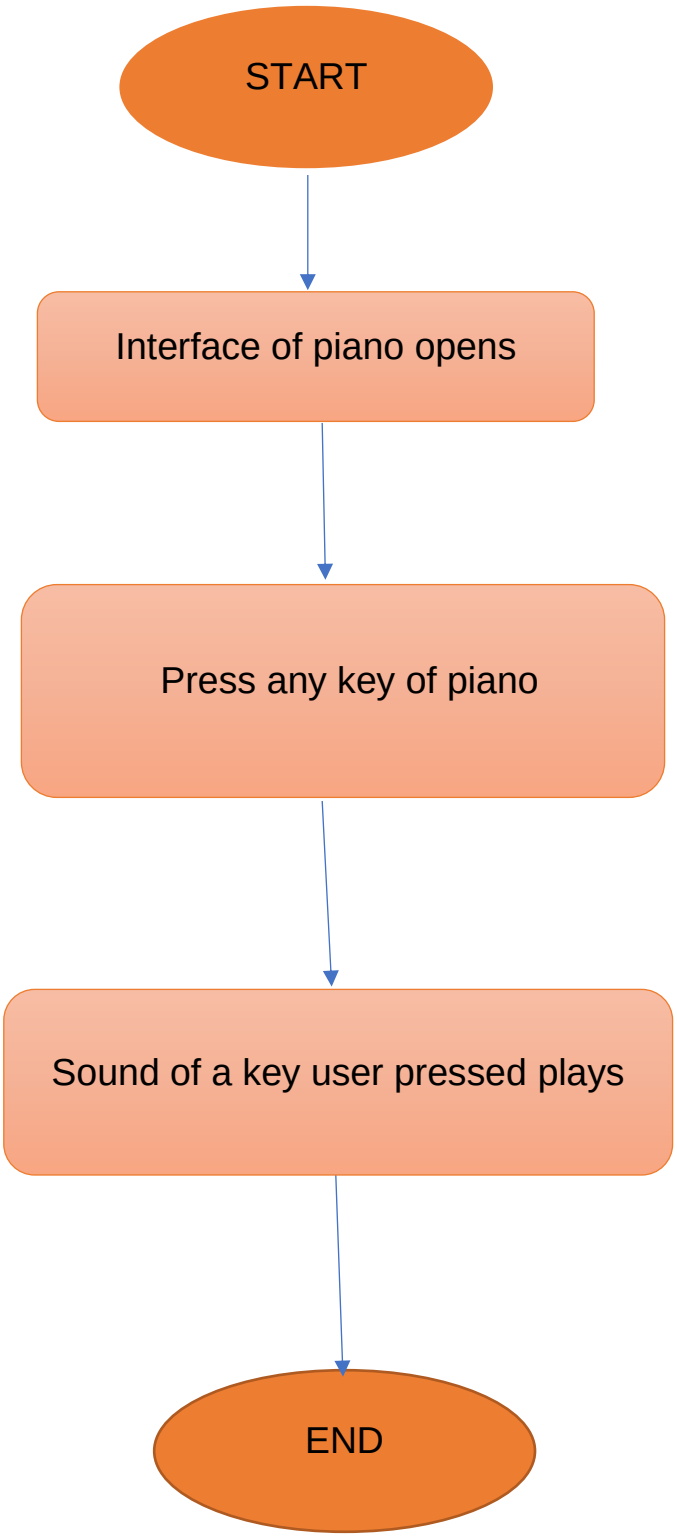
Technology Bucket

2.2 DESCRIPTION OF PYTHON

1. The python language is world's most popular programing language.
2. Python is a general - purpose programming language.
3. Python is high-level programming language.
4. It is easy to use and simple to implement because the **syntax of the python programming language is very easy**.
5. Python programming language is considered as scripting language.
6. Python programming language often used to build websites and software, automatic tasks and conduct data analysis.
7. Python is one of the fastest growing language.



2.2 FLOWCHART



2.3 Programming Tool Used

Visual Studio Code

It is a free, open - source text editor offered by Microsoft. It is lightweight, modern text editor with a lot of extensions for effectively organizing a project.

Pygame

Pygame is a cross-platform set of python modules designed for writing video games. It includes computer graphics and **sound libraries** designed to be used with the python programming language.

It is written in **Python, C, Cython**, and **Assembly.**

CHAPTER 3

Output Screens

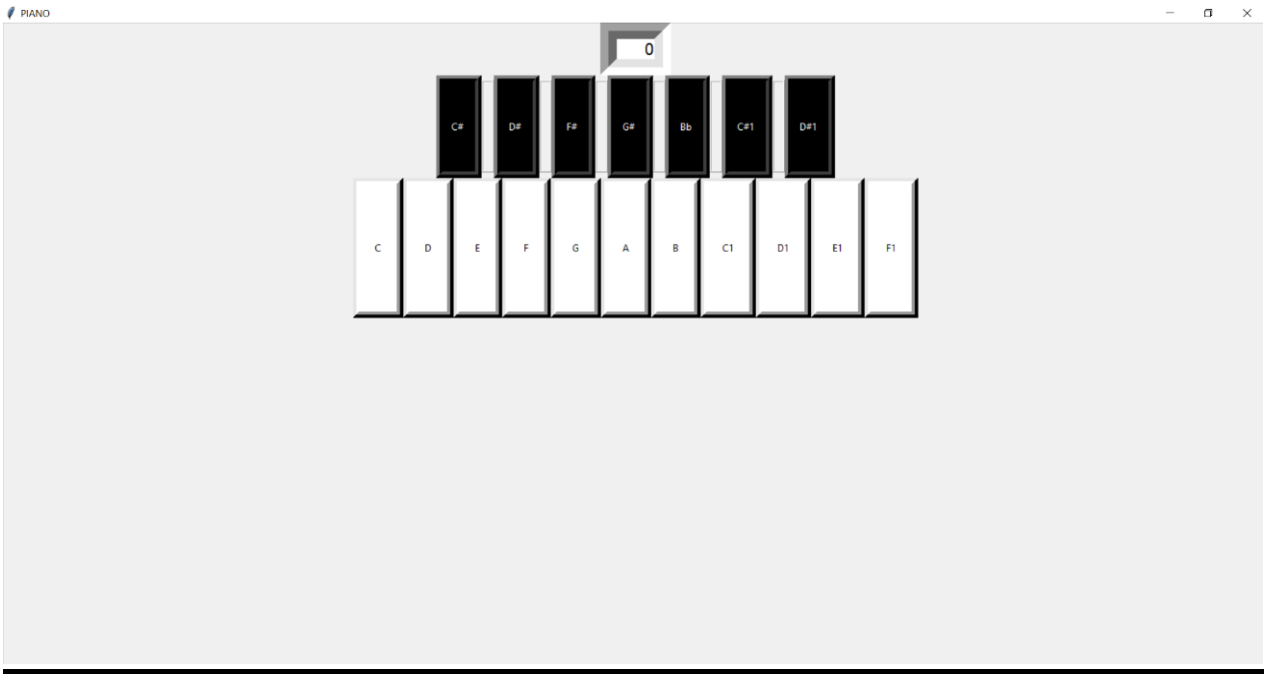


FIG 1:- The very first output screen on running the program.

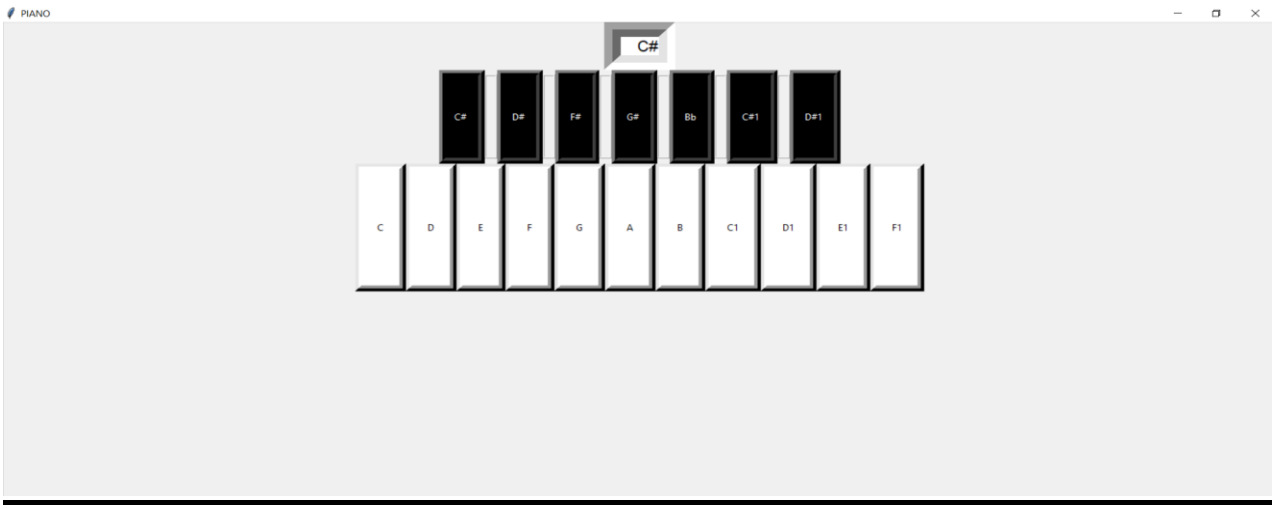


FIG 2:- The output screen when the user press the key “c#”.

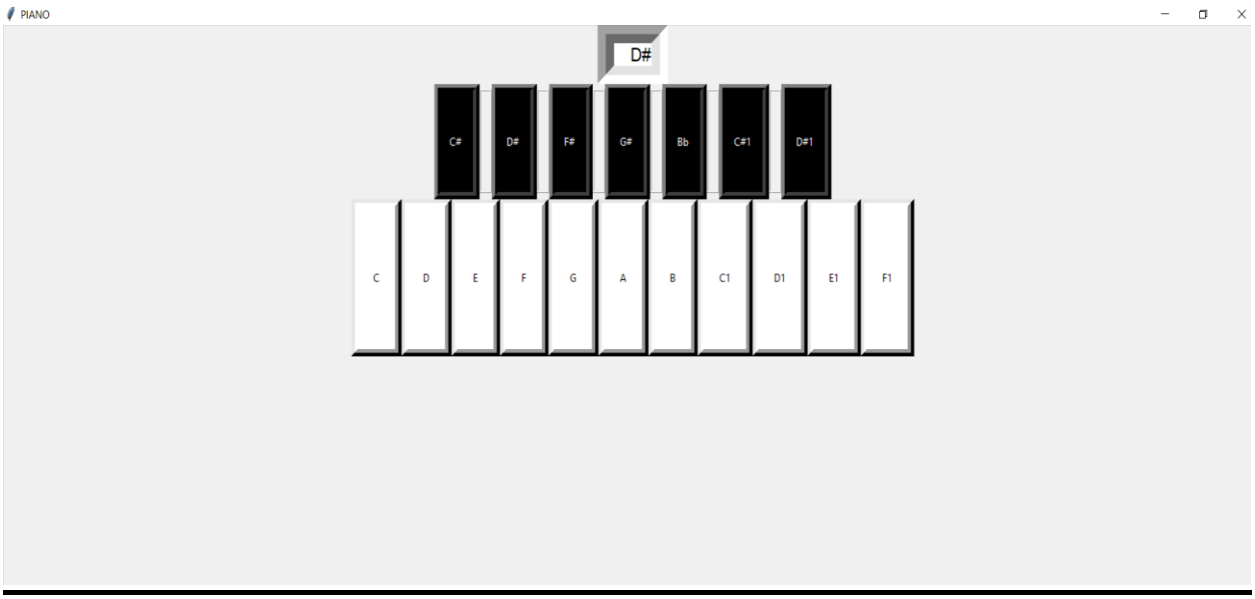


FIG 3:- The output screen when the user press the key “D#”.

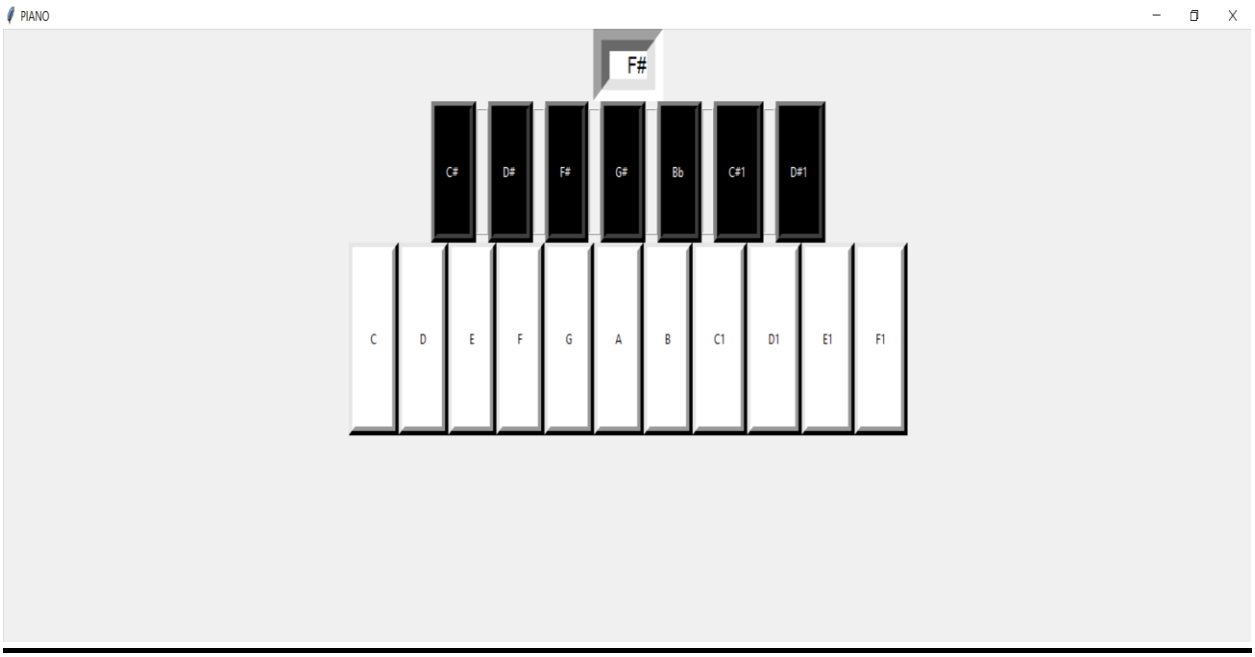


FIG 4:- The output screen when the user press the key “F#”.

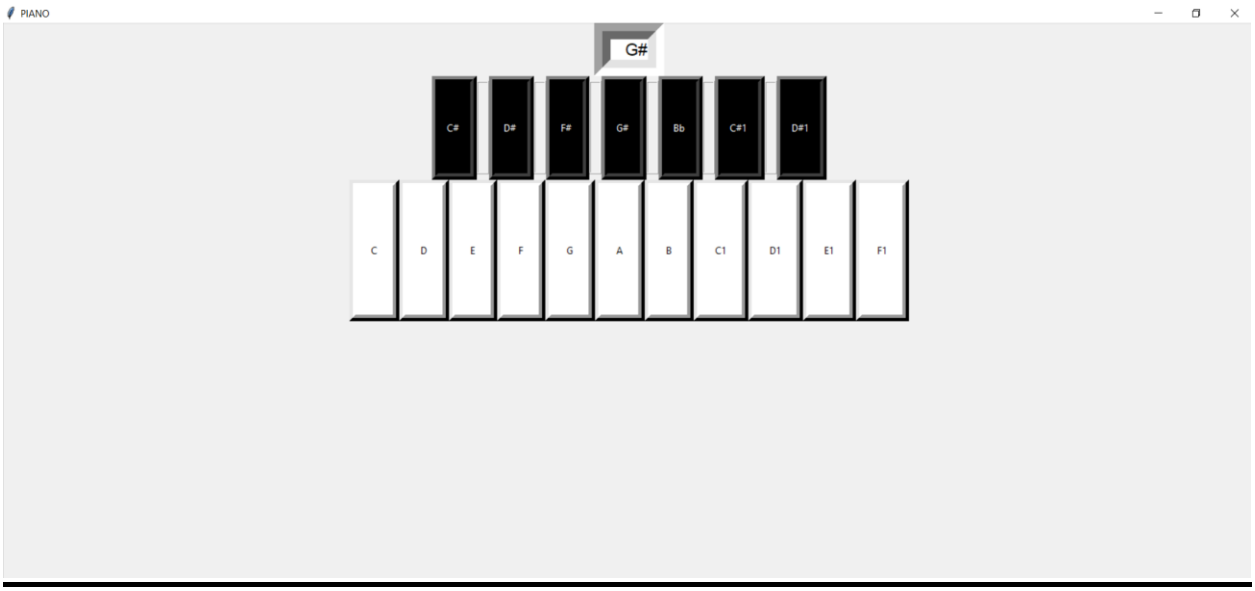


FIG 5:- The output screen when the user press the key “G#”.

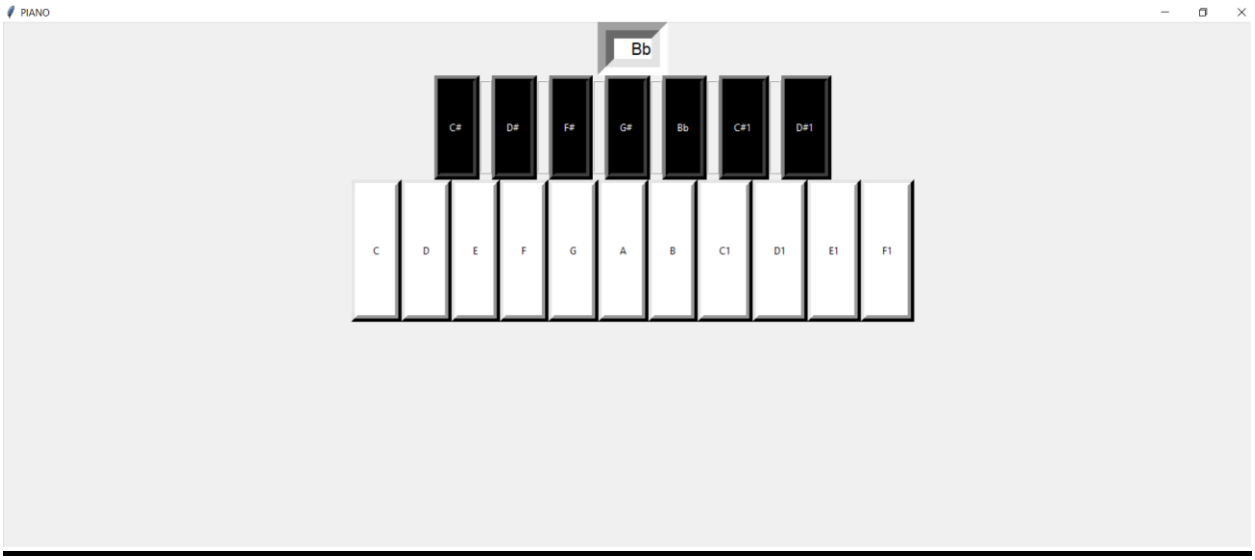


FIG 6:- The output screen when user press the key “Bb”.

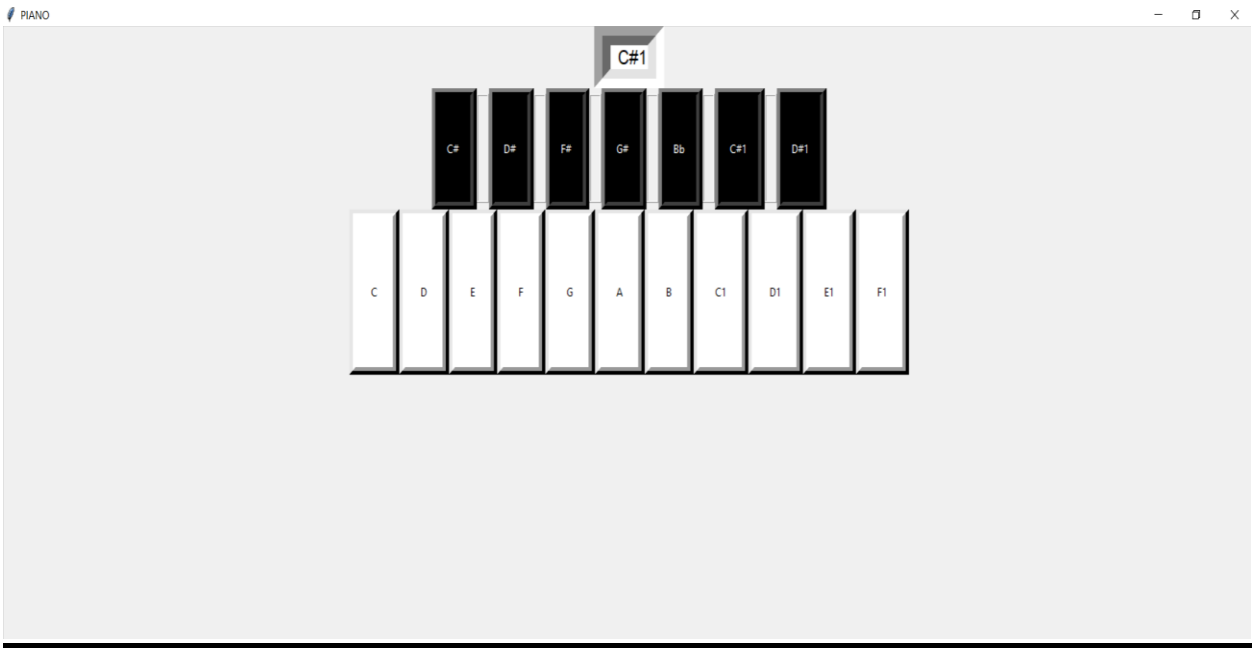


FIG 7 :- The output screen when the user press the key “C#1”

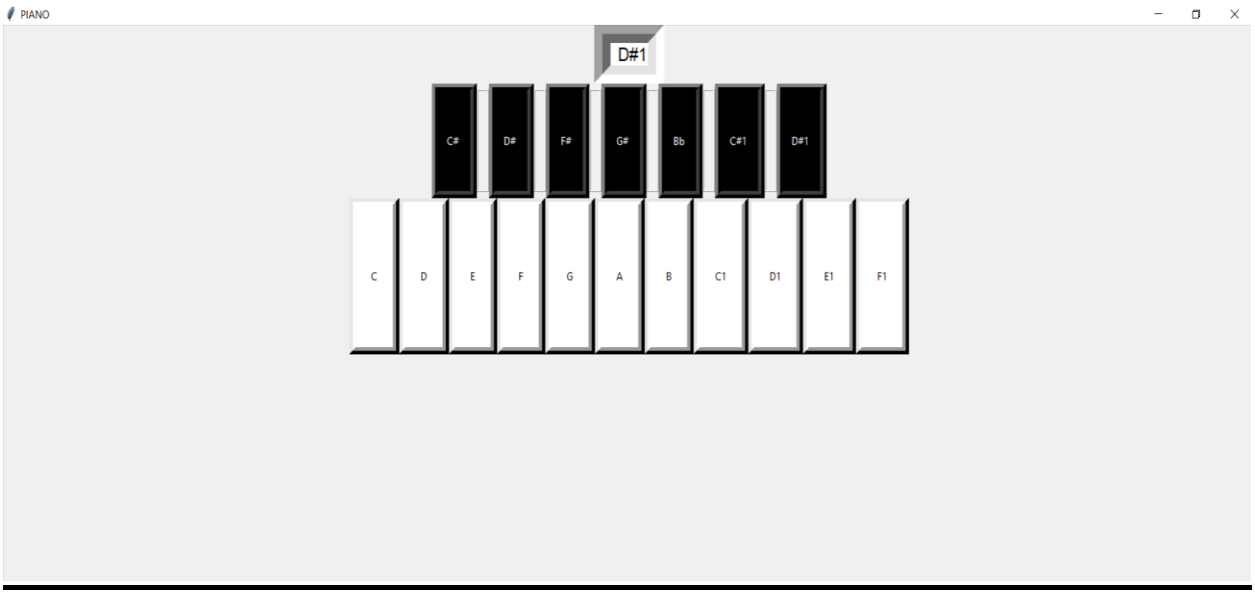


FIG 8:- The output screen when the user press the key “D#1”.

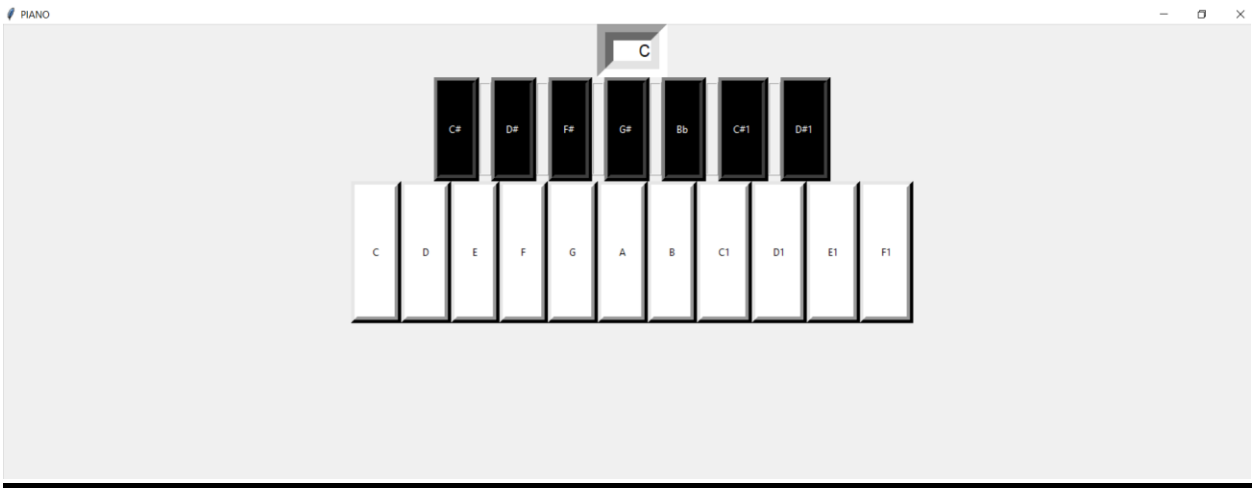


FIG 9 :- The output screen when the user press the key “C”

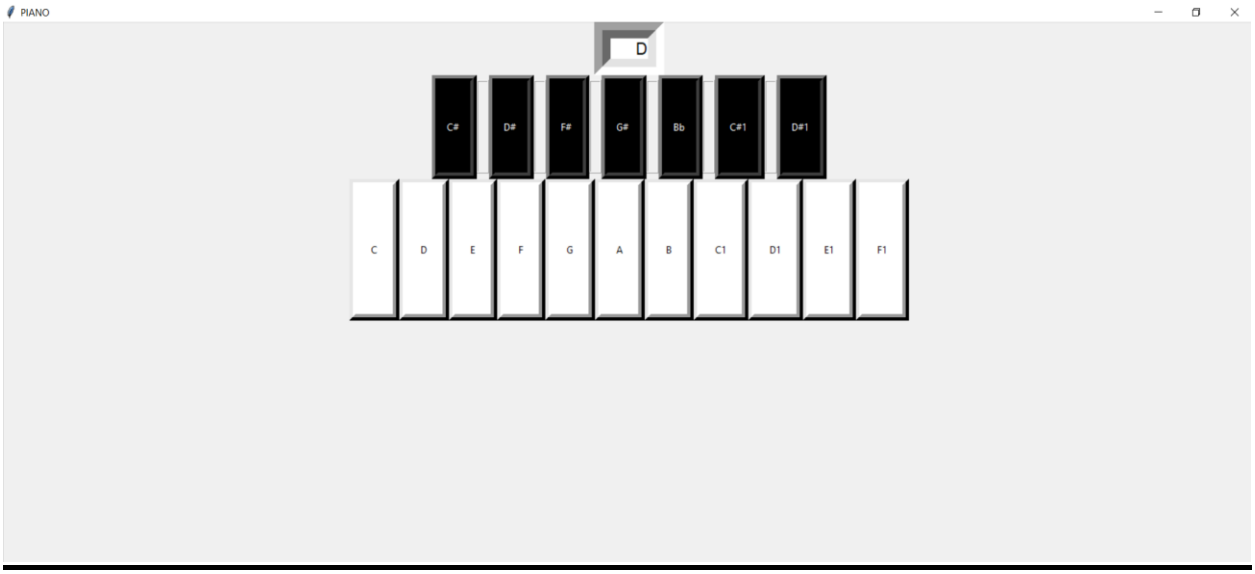


FIG 10 :- The output screen when the user press the key “D”

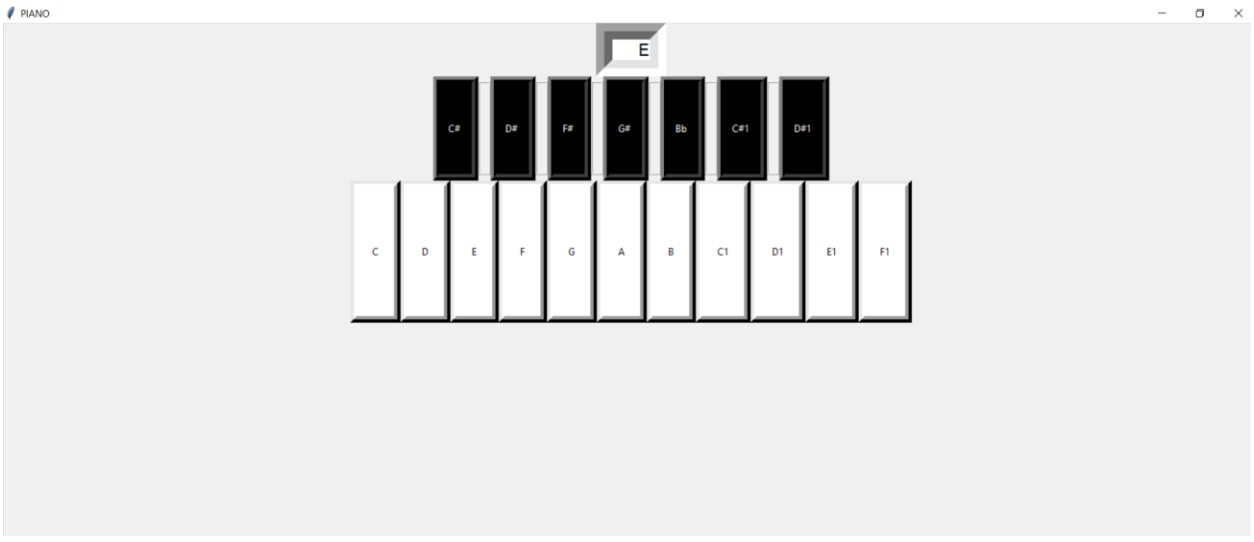


FIG 11:- The output screen when the user press the key “E”

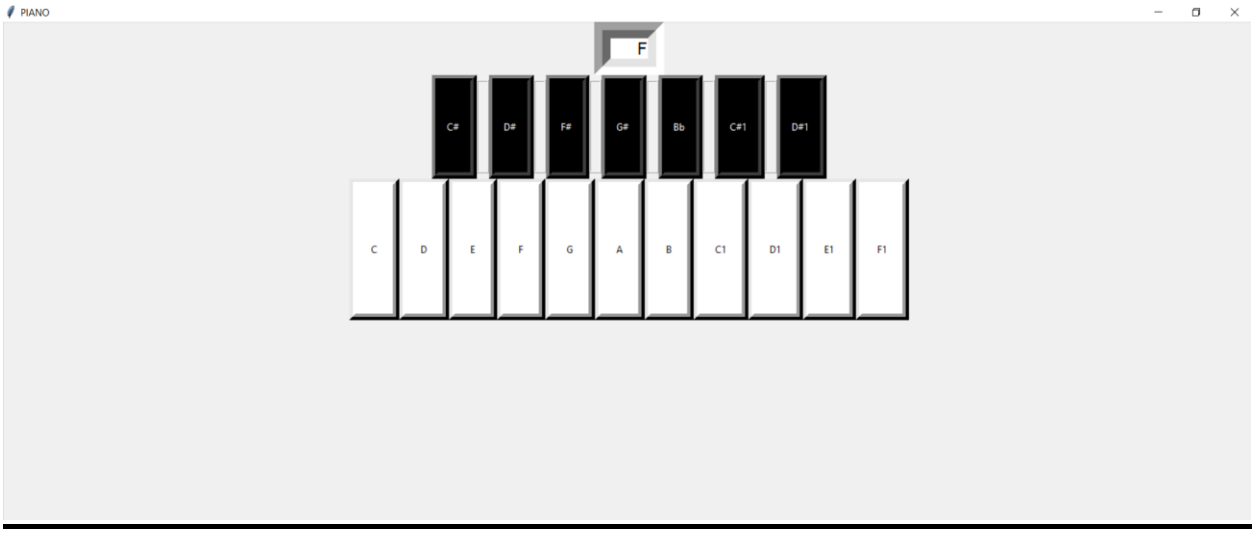


FIG 12 :- The output screen when the user press the key “F”

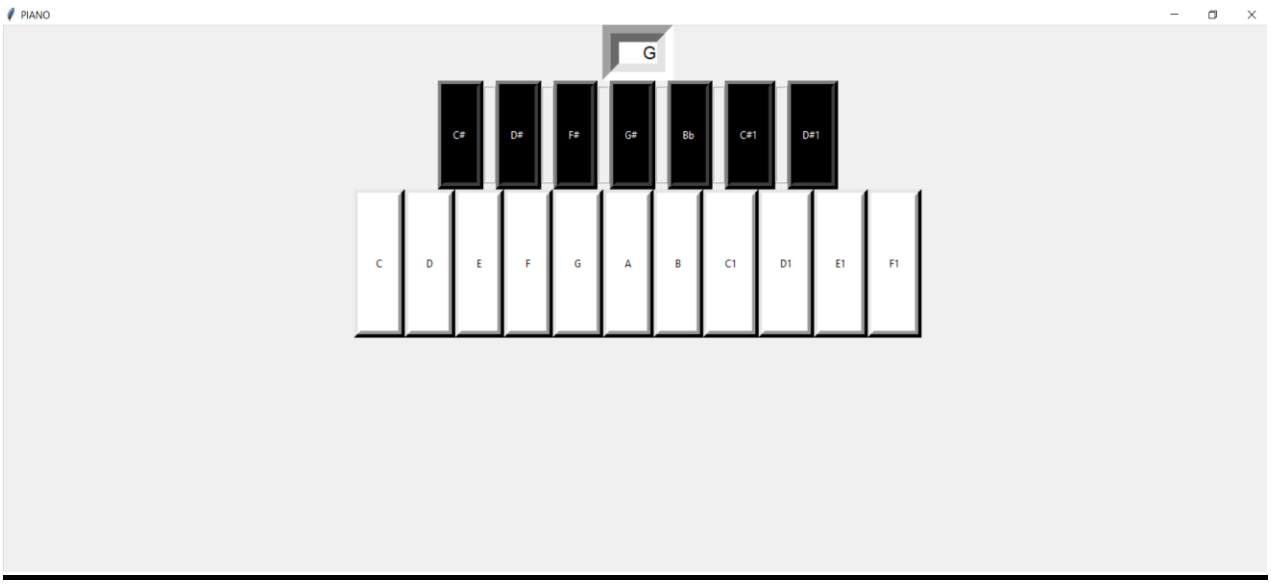


FIG 13:- The output screen when the user press the key “G”

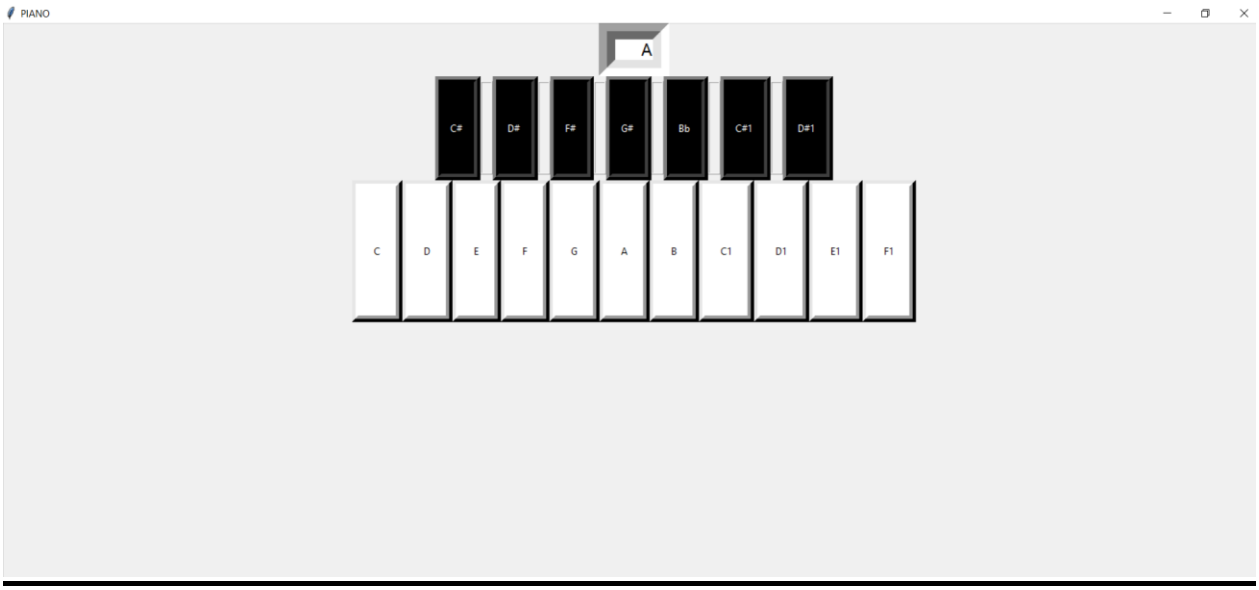


FIG 14:- The output screen when the user press the key “A”

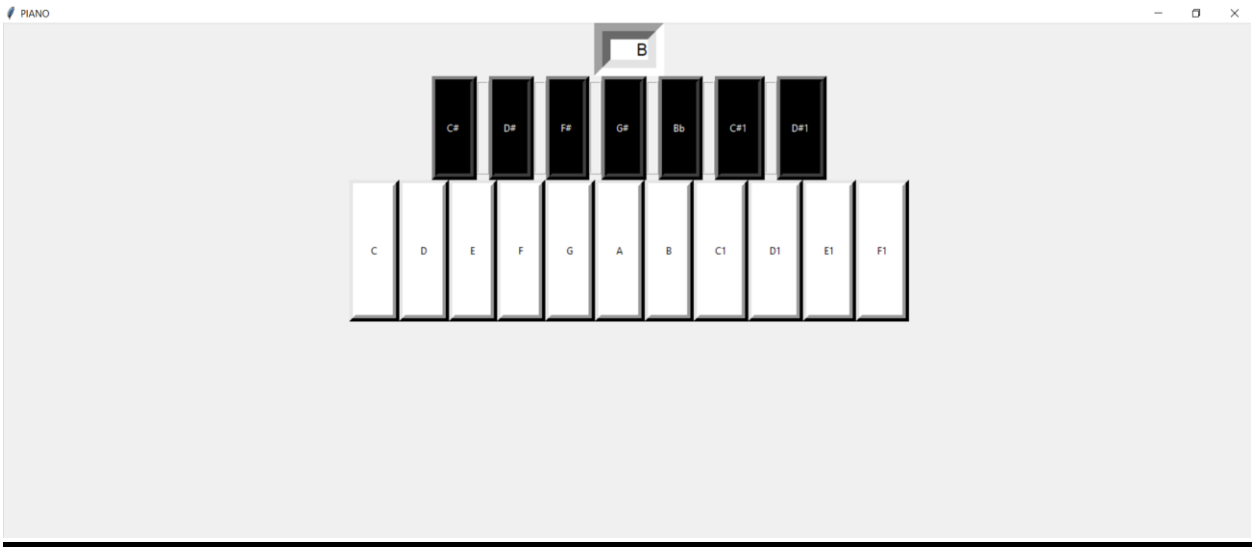


FIG 15:- The output screen when the user press the key “B”

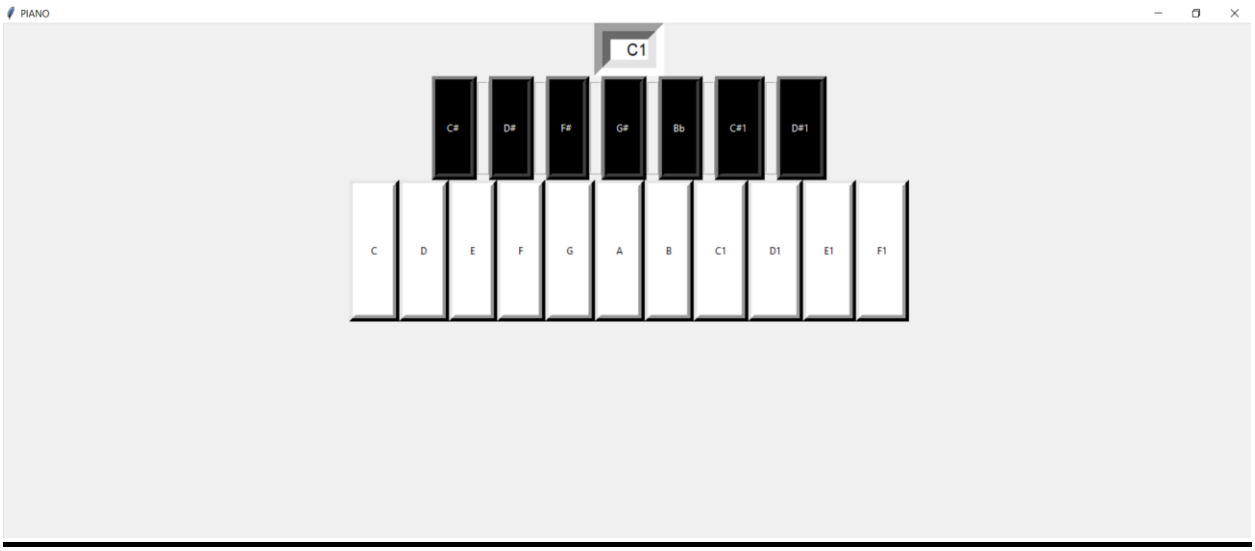


FIG 16 :- The output screen when the user press the key “C1”

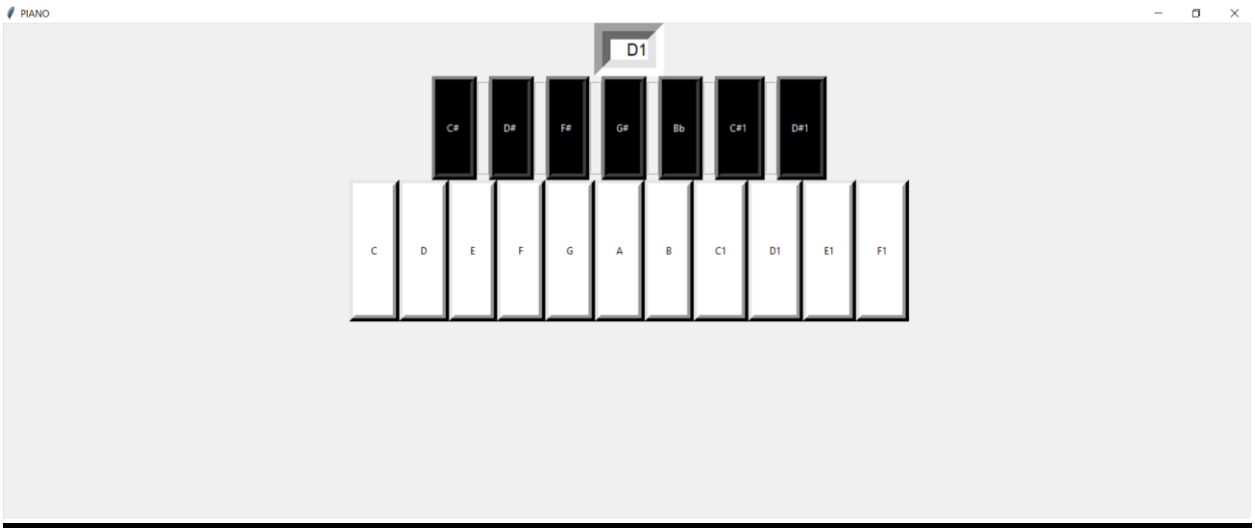


FIG 17 :- The output screen when the user press the key “D1”

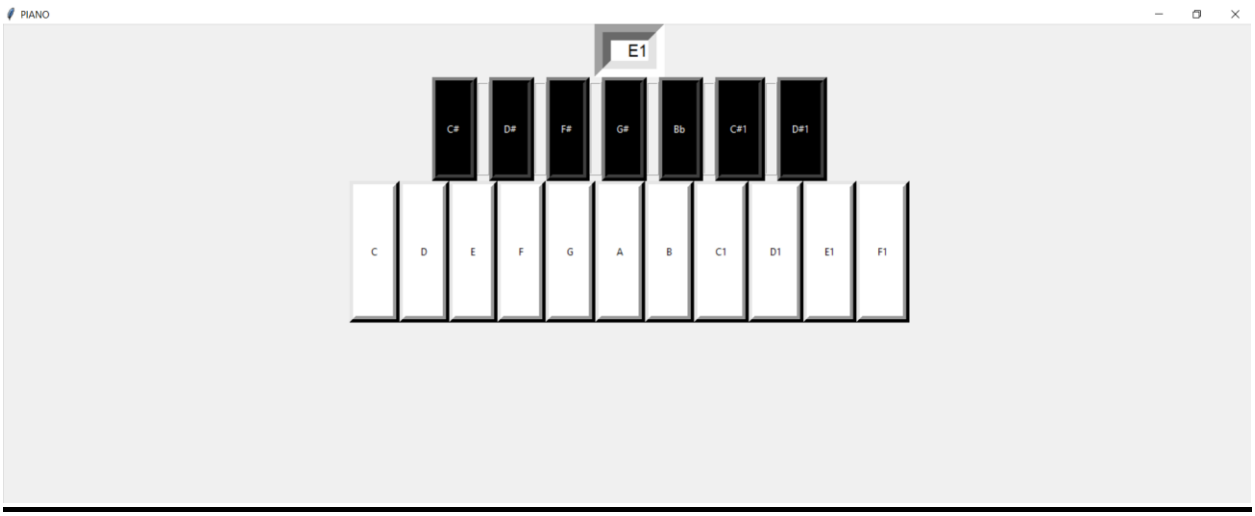


FIG 18:- The output screen when the user press the key “E1”

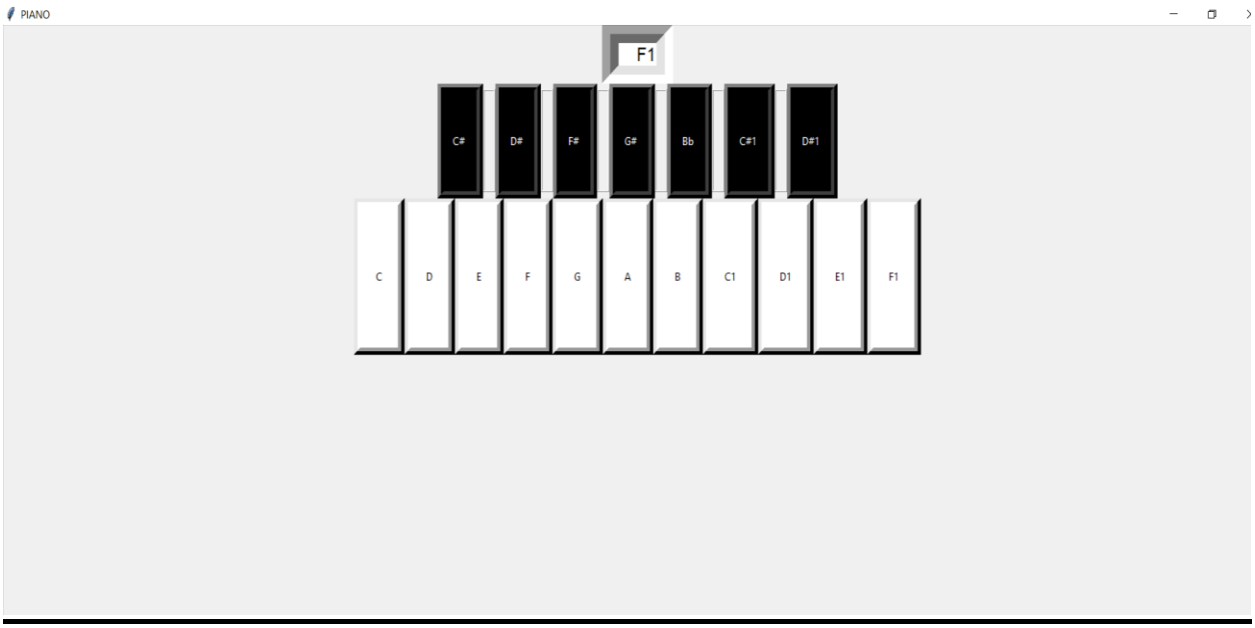


FIG 19 :- The output screen when the user press the key “F1”

APPENDICES

Implemented code

```
import pygame
import sys
from tkinter import*

pygame.init()
def clear():
    txtDisplay.delete(0,END)
    num1.set(0)
    return

def value_Cs():
    num1.set("C#")

    sound = pygame.mixer.Sound('C:\\Users\\hp\\python-
project\\203459__tesabob2001__a-5.mp3')

    sound.play()
    return
def value_Ds():
    num1.set("D#")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203460__tesabob2001__a-4.mp3")
    sound.play()
    return
def value_Fs():
    num1.set("F#")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203466__tesabob2001__c-3.mp3")
    sound.play()
    return
def value_Gs():
    num1.set("G#")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203471__tesabob2001__e4.mp3")
    sound.play()
    return
def value_Bb():
```

```
    num1.set("Bb")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203473__tesabob2001__d5.mp3")
    sound.play()
    return
def value_Cs1():
    num1.set("C#1")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203480__tesabob2001__c-5.mp3")
    sound.play()
    return
def value_Ds1():
    num1.set("D#1")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203472__tesabob2001__d4.mp3")
    sound.play()
    return
def value_C():
    num1.set("C")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203462__tesabob2001__b4.mp3")
    sound.play()
    return
def value_D():
    num1.set("D")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203463__tesabob2001__b3.mp3")
    sound.play()
    return
def value_E():
    num1.set("E")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203467__tesabob2001__b5.mp3")
    sound.play()
    return
def value_F():
    num1.set("F")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203468__tesabob2001__f3.mp3")
    sound.play()
    return
def value_G():
    num1.set("G")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203476__tesabob2001__e5.mp3")
```

```
    sound.play()
    return
def value_A():
    num1.set("A")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203483__tesabob2001__d-3.mp3")
    sound.play()
    return
def value_B():
    num1.set("B")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203484__tesabob2001__c6.mp3")
    sound.play()
    return
def value_C1():
    num1.set("C1")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203488__tesabob2001__g-3.mp3")
    sound.play()
    return
def value_D1():
    num1.set("D1")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203491__tesabob2001__g-4.mp3")
    sound.play()
    return
def value_E1():
    num1.set("E1")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203493__tesabob2001__g3.mp3")
    sound.play()
    return
def value_F1():
    num1.set("F1")
    sound = pygame.mixer.Sound("C:\\Users\\hp\\python-
project\\203499__tesabob2001__f-5.mp3")
    sound.play()
    return
root = Tk()  #It helps to display the root window and manages all the other
components of the tkinter application.
frame = Frame(root)

frame.pack()

root.title('PIANO')
```

```
num1=StringVar()
num1.set(0)
num2=StringVar()
operator=StringVar()


topframe = Frame(root)
topframe.pack(side = TOP)
txtDisplay=Entry(frame,textvariable = num1,bd=20,insertwidth =1,font =30
,justify= 'right',width=4)
txtDisplay.pack( side = TOP)


button1 = Button(topframe,padx=8, height = 6, pady=8, bd=8, text="C#
",  bg="black",fg="white", command=value_Cs)
button1.pack(side =LEFT)
button22 = Button(topframe, state=DISABLED, height = 7, width=1, padx=0, pady=0,
relief=RIDGE)
button22.pack(side =LEFT)
button2 = Button(topframe,padx=8, height = 6, pady=8, bd=8, text="D# ",
bg="black",fg="white", command=value_Ds)
button2.pack(side =LEFT)
button22 = Button(topframe, state=DISABLED, height = 7, width=1, padx=0, pady=0,
relief=RIDGE)
button22.pack(side =LEFT)
button3 = Button(topframe,padx=8, height = 6, pady=8, bd=8, text="F# ",
bg="black",fg="white", command=value_Fs)
button3.pack(side =LEFT)
button22 = Button(topframe, state=DISABLED, height = 7, width=1, padx=0, pady=0,
relief=RIDGE)
button22.pack(side =LEFT)
button4 = Button(topframe,padx=8, height = 6, pady=8, bd=8, text="G# ",
bg="black",fg="white", command=value_Gs)
button4.pack(side =LEFT)
button22 = Button(topframe, state=DISABLED, height = 7, width=1, padx=0, pady=0,
relief=RIDGE)
button22.pack(side =LEFT)

button2 = Button(topframe,padx=8, height = 6, pady=8, bd=8, text="Bb ",
bg="black",fg="white", command=value_Bb)
button2.pack(side =LEFT)
button22 = Button(topframe, state=DISABLED, height = 7, width=1, padx=0, pady=0,
relief=RIDGE)
button22.pack(side =LEFT)
```

```
button3 = Button(topframe,padx=8, height = 6, pady=8, bd=8, text="C#1 ",
bg="black",fg="white", command=value_Cs1)
button3.pack(side =LEFT)
button22 = Button(topframe, state=DISABLED, height = 7, width=1, padx=0, pady=0,
relief=RIDGE)
button22.pack(side =LEFT)
button4 = Button(topframe,padx=8, height = 6, pady=8, bd=8, text="D#1 ",
bg="black",fg="white", command=value_Ds1)
button4.pack(side =LEFT)

frame1 = Frame(root)
frame1.pack( side = TOP)

button1 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="C",
bg="white",fg="black", command=value_C)
button1.pack(side =LEFT)
button2 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="D",
bg="white",fg="black", command=value_D)
button2.pack(side =LEFT)
button3 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="E",
bg="white",fg="black", command=value_E)
button3.pack(side =LEFT)
button4 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="F",
bg="white",fg="black", command=value_F)
button4.pack(side =LEFT)

button5 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="G",
bg="white",fg="black", command=value_G)
button5.pack(side =LEFT)
button6 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="A",
bg="white",fg="black", command=value_A)
button6.pack(side =LEFT)
button7 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="B",
bg="white",fg="black", command=value_B)
button7.pack(side =LEFT)
button8 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="C1",
bg="white",fg="black", command=value_C1)
button8.pack(side =LEFT)

button9 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="D1",
bg="white",fg="black", command=value_D1)
button9.pack(side =LEFT)
button10 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="E1",
bg="white",fg="black", command=value_E1)
button10.pack(side =LEFT)
```

```
button11 = Button(frame1,padx=16, height = 8, pady=16, bd=8, text="F1",
bg="white",fg="black", command=value_F1)
button11.pack(side =LEFT)

root.mainloop()
```

REFRENCES

There are following sources which I have used in the preparation of python project.

[1] WEBSITE:- https://www.w3schools.com/

[2] YOUTUBE:- https://youtu.be/gfDE2a7MKjA

[3] Sound :- https://freesound.org/people/Tesabob2001/packs/12995/

[3] Wikipedia

Apart from these sources I have used other sources also for which I am thankful.