

Final Report

Topic

Gameiterator

Submitted to

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Abstract

The project titled “ Gameitrator ” is a GUI based application which is written in python programming language .This is a simple GUI based project which is very easy to use and very entertaining also. Talking about the system it contains all the functions to play the game .We have included three GUI based application using python programing . The project file contains the GUI based applications which can access through one particular GUI interface.

This project file contains all required function to play games available in the project and know the score .

Gameitrator provides the simple way to reach on a particular GUI based game and play it in a simple word one can access the GUI based applications easily just with a click on button and play, after completion user will get game over message and he can simple quit.

In this project we have included live match score for entertainment purpose .one can know the score of the match by visiting on project.

We have also included database in our project so one can know his previous score and improve it. taking about the requirement it is compulsory to have python installed in user's system to used this GUI based project.

Acknowledgment

We are very grateful that we managed to complete our “Pyterator Game “project on time this would not be happened without contribution and co-operation from our group member .

We would sincerely thank to Mr.Sagar Pande (Ass.Pro LPU) for his help and support for this project and for his techings

Last but not the least ,we would like to express our gratitude to our friends for their responds and supports .

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Introduction

Gameiterator is GUI based project written in python programming language. We have created one interface through which we have linked three GUI based applications .two of the three are game which are working with the help of different module/library available in python and third one is matches score which will work online ,the third application has been made for entertainment purpose and it is also linked with main interface.

Talking about the functionalities, the first GUI based game is ‘KILL CORONA” which is working with the help of pygame and GUI of this game has been created with the help of Tkinter library .

Second one is Tic-tac- toe game which is also called Noughts and Crosses game for this game we have used Tkinter for implementation of GUI.

Last but not the least the third one is Scorer which is fetching the score online fetching this by requesting by urllib and BeautifulSoup and we are processing some images so we have used PIL(python image processing) which is generally known as Pillow .

Interface

We have created a user interface with the help of Tkinter library to interact with user. user can access all the three applications available in the GUI based window by using any one button from given three buttons in the interface by clicking them.

The code for the same is given below...

```
#GUI Building
l0=Label(win,text="Welcome to the Gamiterator",fg="White",bg="Brown"
)
l0.grid(row=2,column=2)
win.geometry("400x100")
win.title("Gamiterator")
win.configure(background="Yellow")

#Button Is Declared
button=Button(win,text="Go Corona
GO",command=game1,fg="White",bg="Brown")
button2=Button(win,text="Tic Tac
Toe",command=game2,fg="White",bg="Brown")
button3=Button(win,text="IPL Match
Predictor",command=game3,fg="White",bg="Brown")
```

```
#Button GUI Drawing
button.grid(row=3,column=3)
button2.grid(row=4,column=3)
```

```
button3.grid(row=5,column=3)
```

```
#MenuBar Layout Design
```

```
mymenu=Menu(win)
m1=Menu(mymenu,tearoff=0)

#m1.add_command(label="Save",command=foolFunction)
m1.add_command(label="Exit",command=quit)
m1.add_separator()
win.config(menu=mymenu)
mymenu.add_cascade(label="File",menu=m1)
#Last Packing Of the GUI LAYOUT
win.mainloop()
```



Picture : User Interface for User

Create Game “Kill Corona”

This game is a GUI based game which is implemented with the help of Pygame library and Tkinter library. In this project we have also used random module for generation of corona png file.

Go corona is a GUI based game in which corona virus will be died when vaccine drop will touch it . if the collision between corona png files and drops will take place then automatically score will be increased and the distance between one corona png and another corona png file is maintained by distance fomula.

i.e $\text{distance} = \text{math.sqrt}((\text{math.pow}(\text{coronaX} - \text{dropX}, 2)) + (\text{math.pow}(\text{coronaY} - \text{dropY}, 2)))$

The source code for same is given below...

```
import pygame
import random
import math
from pygame import mixer

# initialize the pygame
pygame.init()
```

```

# Create the screen
screen = pygame.display.set_mode((800, 600))

# background
#mixer.music.load('background.wav')
#mixer.music.play(-1)

# Title and Icon
pygame.display.set_caption("KILL CORONA")
icon = pygame.image.load('icon.jpeg')
pygame.display.set_icon(icon)

# tap
tapImg = pygame.image.load('tap.jpeg')
tapX = 370
tapY = 50
tapX_change = 0

# corona
coronaImg = []
coronaX = []
coronaY = []
coronaX_change = []
coronaY_change = []
num_of_corona = 3

for i in range(num_of_corona):
    coronaImg.append(pygame.image.load('corona.jpeg'))
    coronaX.append(random.randint(20, 780))
    coronaY.append(random.randint(200, 220))
    coronaX_change.append(4)
    coronaY_change.append(4)

```

```

# drop
dropImg = pygame.image.load('drop.jpeg')
dropX = 0
dropY = 150
dropX_change = 0
dropY_change = 1
drop_state = "ready" # Ready - No drop on screen

# Score
score_value = 0
font = pygame.font.Font('freesansbold.ttf', 32)
textX = 10
textY = 10

# Game over
over_text = pygame.font.Font('freesansbold.ttf', 72)

def show_score(x, y):
    score = font.render("Score : " + str(score_value), True, (0, 0, 0))
    screen.blit(score, (x, y))

def game_over_text():
    over_text = font.render("Game over ", True, (0, 0, 0))
    screen.blit(over_text, (300, 250))

def tap(x, y):
    screen.blit(tapImg, (x, y))

```

```

def corona(x, y, i):
    screen.blit(coronaImg[i], (x, y))

def fire_drop(x, y):
    global drop_state
    drop_state = "fire"
    screen.blit(dropImg, (x + 16, y + 10))

def isCollision(coronaX, coronaY, dropX, dropY):
    distance = math.sqrt((math.pow(coronaX - dropX, 2)) +
    (math.pow(coronaY - dropY, 2)))
    if distance < 27:
        return True

# Game Loop
running = True
while running:
    # Adding colour to screen
    screen.fill((255, 228, 181))
    for event in pygame.event.get():
        if event.type == pygame.QUIT:
            running = False

    # if keystroke is pressed check whether its right or left
    if event.type == pygame.KEYDOWN:
        if event.key == pygame.K_LEFT:
            tapX_change = -5
        if event.key == pygame.K_RIGHT:
            tapX_change = 5

```

```

        if event.key == pygame.K_UP or event.key ==
pygame.K_SPACE:
            if drop_state is "ready":
                dropX = tapX
                fire_drop(dropX, dropY)

    if event.type == pygame.KEYUP:
        if event.key == pygame.K_LEFT or event.key ==
pygame.K_RIGHT:
            tapX_change = 0

# tap movement
tapX += tapX_change
if tapX <= 0:
    tapX = 0
elif tapX >= 690:
    tapX = 690

# corona movement
for i in range(num_of_corona):

    # Game Over
    if coronaY[i] > 400:
        for j in range(num_of_corona):
            coronaY[j] = 2000
            game_over_text()
            break
    coronaX[i] += coronaX_change[i]
    if coronaX[i] <= 0:
        coronaX_change[i] = 1
        coronaY[i] += coronaY_change[i]
    elif coronaX[i] >= 736:
        coronaX_change[i] = -1

```

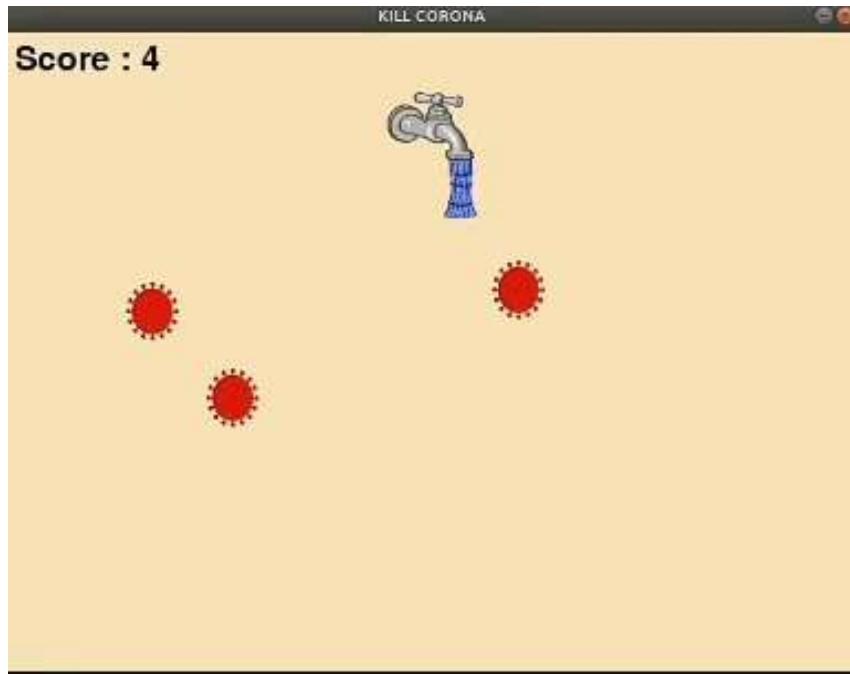
```

    coronaY[i] += coronaY_change[i]
# Collision
collision = isCollision(coronaX[i], coronaY[i], dropX, dropY)
if collision:
    dropY = 20
    drop_state = "ready"
    score_value += 1
    coronaX[i] = random.randint(0, 736)
    coronaY[i] = random.randint(200, 220)
corona(coronaX[i], coronaY[i], i)

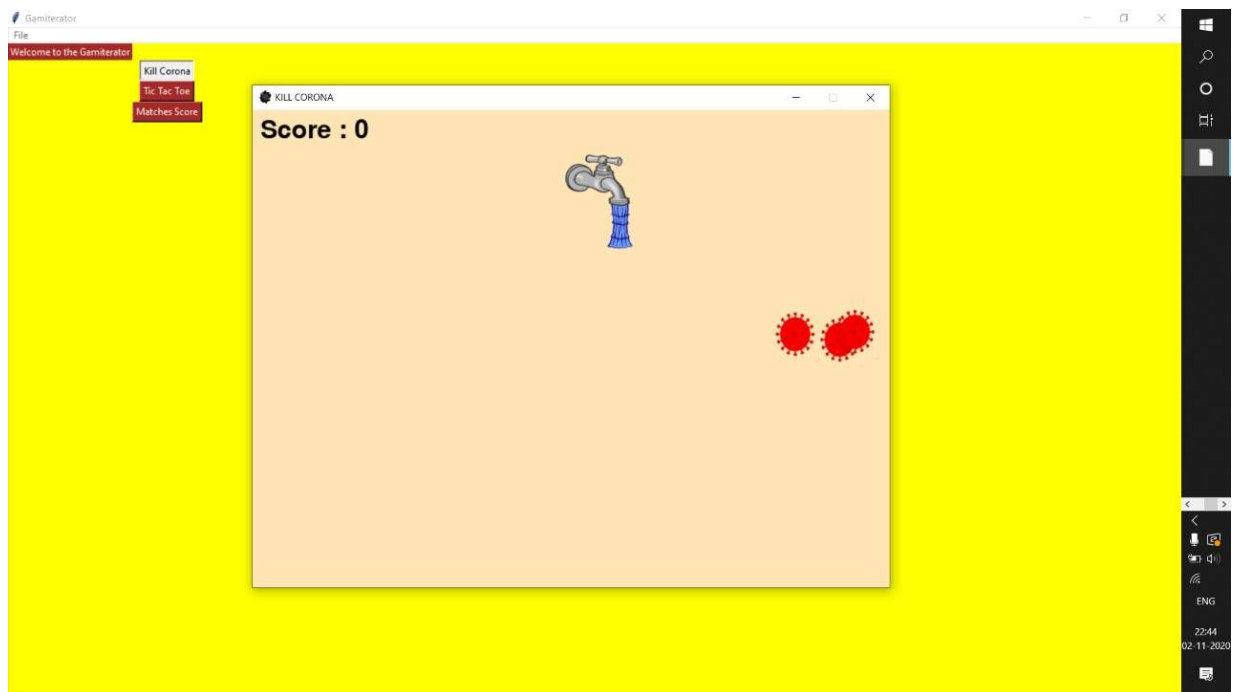
# drop movement
if dropY >= 600:
    dropY = 150
    drop_state = "ready"
if drop_state is "fire":
    fire_drop(dropX, dropY)
    dropY += dropY_change

tap(tapX, tapY)
show_score(textX, textY)
pygame.display.update()

```



Picture : Kill corona game



Picture: Kill corona game with user interface

Create the “Tic-tac-toe” Game

Tic-tac-toe is zero cross game in which we have used two symbol for playing the game one is ‘0’ another is ‘X’. for making this we have used Tkinter through which we have used Entrybox for taking players name as input and we have used Button for playing game.

```
from tkinter import *  
from tkinter import messagebox  
import mysql.connector  
a=0  
b="ok"  
tk1 = Tk()
```

```
pa = StringVar()  
playerb = StringVar()  
p1 = StringVar()  
p2 = StringVar()  
bclick = True  
flag = 0
```

```
player1_name = Entry(tk1, textvariable=p1, bd=5)  
player1_name.insert(END, 'PLAYER 1')  
player1_name.grid(row=1, column=1, columnspan=8)
```

```
player2_name = Entry(tk1, textvariable=p2, bd=5)
player2_name.insert(END, 'PLAYER 2')
player2_name.grid(row=2, column=1, columnspan=8)
```

```
def disableButton():
    button1.configure(state=DISABLED)
    button2.configure(state=DISABLED)
    button3.configure(state=DISABLED)
    button4.configure(state=DISABLED)
    button5.configure(state=DISABLED)
    button6.configure(state=DISABLED)
    button7.configure(state=DISABLED)
    button8.configure(state=DISABLED)
    button9.configure(state=DISABLED)
```

```
def btnClick(buttons):
    global bclick, flag, player2_name, player1_name, playerb, pa,a,b
    if buttons["text"] == " " and bclick == True:
        buttons["text"] = "X"
        bclick = False
        playerb = p2.get() + " Wins! in " + str(flag) + " moves"
        pa = p1.get() + " Wins! in " + str(flag) + " moves"
        checkForWin()
        flag += 1
```

```
elif buttons["text"] == " " and bclick == False:
    buttons["text"] = "O"
    bclick = True
```

```

        checkForWin()
        flag += 1
    else:
        messagebox.showinfo("Tic-Tac-Toe", "Button already
Clicked!")

```

```

def checkForWin():
    if (button1['text'] == 'X' and button2['text'] == 'X' and
button3['text'] == 'X' or
        button4['text'] == 'X' and button5['text'] == 'X' and
button6['text'] == 'X' or
        button7['text'] == 'X' and button8['text'] == 'X' and
button9['text'] == 'X' or
        button1['text'] == 'X' and button5['text'] == 'X' and
button9['text'] == 'X' or
        button3['text'] == 'X' and button5['text'] == 'X' and
button7['text'] == 'X' or
        button1['text'] == 'X' and button4['text'] == 'X' and
button7['text'] == 'X' or
        button2['text'] == 'X' and button5['text'] == 'X' and
button8['text'] == 'X' or
        button3['text'] == 'X' and button6['text'] == 'X' and
button9['text'] == 'X'):
        global a,b
        a=1
        b=p1.get()
        disableButton()
        messagebox.showinfo("Tic-Tac-Toe", pa)
        tk1.after(50, tk1.destroy)
    elif(flag == 8):
        messagebox.showinfo("Tic-Tac-Toe", "It is a Tie")
        tk1.after(50, tk1.destroy)

```

```

elif (button1['text'] == 'O' and button2['text'] == 'O' and
button3['text'] == 'O' or
      button4['text'] == 'O' and button5['text'] == 'O' and
button6['text'] == 'O' or
      button7['text'] == 'O' and button8['text'] == 'O' and
button9['text'] == 'O' or
      button1['text'] == 'O' and button5['text'] == 'O' and
button9['text'] == 'O' or
      button3['text'] == 'O' and button5['text'] == 'O' and
button7['text'] == 'O' or
      button1['text'] == 'O' and button4['text'] == 'O' and
button7['text'] == 'O' or
      button2['text'] == 'O' and button5['text'] == 'O' and
button8['text'] == 'O' or
      button3['text'] == 'O' and button6['text'] == 'O' and
button9['text'] == 'O'):
    disableButton()
    messagebox.showinfo("Tic-Tac-Toe", playerb)
    tk1.after(50, tk1.destroy)
    a=1
    b=p2.get()

```

```

label = Label( tk1, text="Player 1:", font='Times 20 bold',
bg='white', fg='black', height=1, width=8)
label.grid(row=1, column=0)

```

```

label = Label( tk1, text="Player 2:", font='Times 20 bold',
bg='white', fg='black', height=1, width=8)
label.grid(row=2, column=0)

```

```
button1 = Button(tk1, text=" ", font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button1))  
button1.grid(row=3, column=0)
```

```
button2 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button2))  
button2.grid(row=3, column=1)
```

```
button3 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button3))  
button3.grid(row=3, column=2)
```

```
button4 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button4))  
button4.grid(row=4, column=0)
```

```
button5 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button5))  
button5.grid(row=4, column=1)
```

```
button6 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button6))  
button6.grid(row=4, column=2)
```

```
button7 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button7))
```

```
button7.grid(row=5, column=0)
```

```
button8 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button8))  
button8.grid(row=5, column=1)
```

```
button9 = Button(tk1, text=' ', font='Times 20 bold', bg='gray',  
fg='white', height=4, width=8, command=lambda:  
btnClick(button9))  
button9.grid(row=5, column=2)
```

```
tk1.title("Tic Tac Toe")  
tk1.mainloop()
```

```
print(a,b)
```

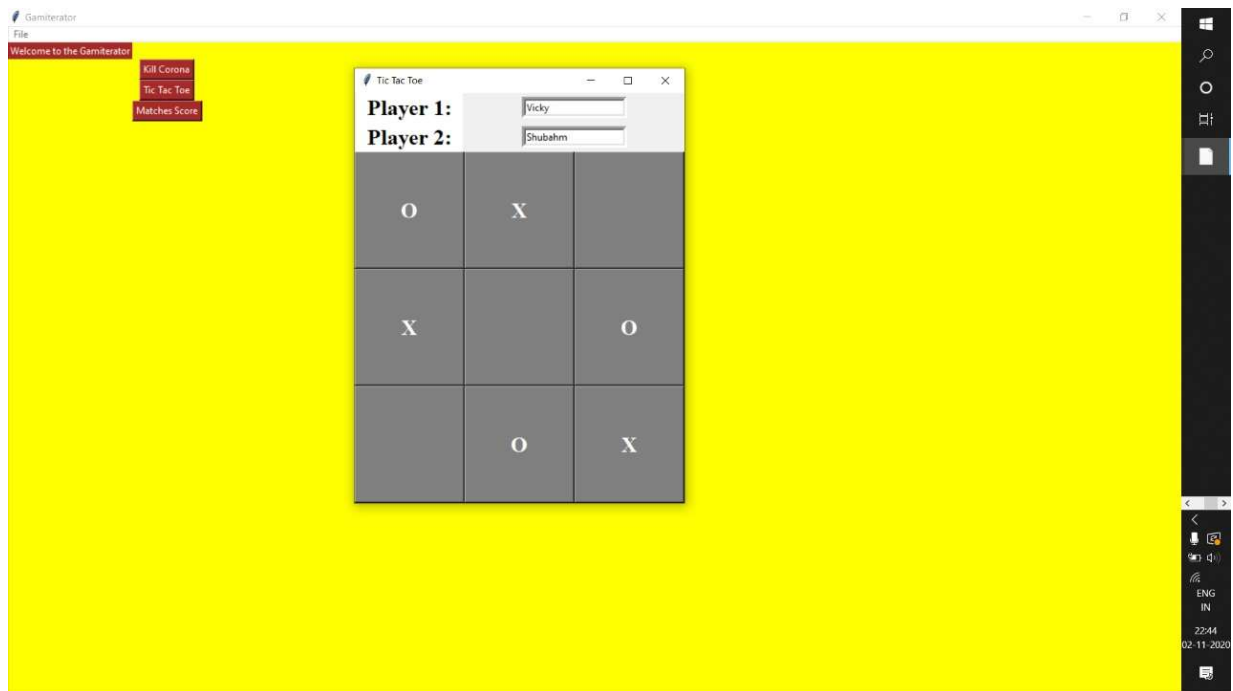
```
if a==1:  
    try:  
        mydb = mysql.connector.connect(  
            host="localhost",  
            user="root",  
            password="admin",  
        )  
        mycursor = mydb.cursor()  
        sql = "CREATE DATABASE GAME"  
        mycursor.execute(sql)  
        print("done")  
        mydb2 = mysql.connector.connect(  
            host="localhost",  
            user="root",  
            password="admin",
```

```

        database="GAME"
    )
    mycursor2 = mydb2.cursor()
    mycursor2.execute("CREATE TABLE OXGAME(SNo
INTEGER AUTO_INCREMENT PRIMARY KEY,PlayerName
VARCHAR(100),Number_of_moves_win int(10) )")
    print("table is created successfully")
    a=0
except Exception:
    print("database and table already exist")
    a=1

mydb3 = mysql.connector.connect(
host="localhost",
user="root",
password="admin",
database="GAME"
)
mycursor3 = mydb3.cursor()
sql = "INSERT INTO OXGAME ( PlayerName ,
Number_of_moves_win ) VALUES (%s,%s)"
val = (b,str(flag))
mycursor3.execute(sql, val)
mydb3.commit()
print(mycursor3.rowcount, "record inserted.")

```



Picture ; -Tic toe game with user interface

Create “Matches Score”

In this GUI based application we are using pil library .through this we are fetching the score for any match online from any url.

Code for the same has been given below....

```
import tkinter as tk
from PIL import ImageTk,Image
import os
from bs4 import BeautifulSoup #webscrapping
import urllib.request         #for fetching url
score_page='https://static.cricinfo.com/rss/livescores.xml'
#url for scrap the score
page=urllib.request.urlopen(score_page)          #to open that url
soup=BeautifulSoup(page,'html.parser')          #initially it will be on
html form to convert it to readable format ,we are pasing it
result=soup.find_all('description')
ls=[]                                           #empt list for live score
for match in result:
    ls.append(match.get_text())

def score():
    T.insert(tk.END,ls)
def clear():
    T.delete(1.0,tk.END)
#GUI work start
root=tk.Toplevel()
root.geometry('1200x675')
```

```
img=ImageTk.PhotoImage(Image.open("matches.jpg"))
panel=tk.Label(root,image=img)
panel.place(x=0,y=0)

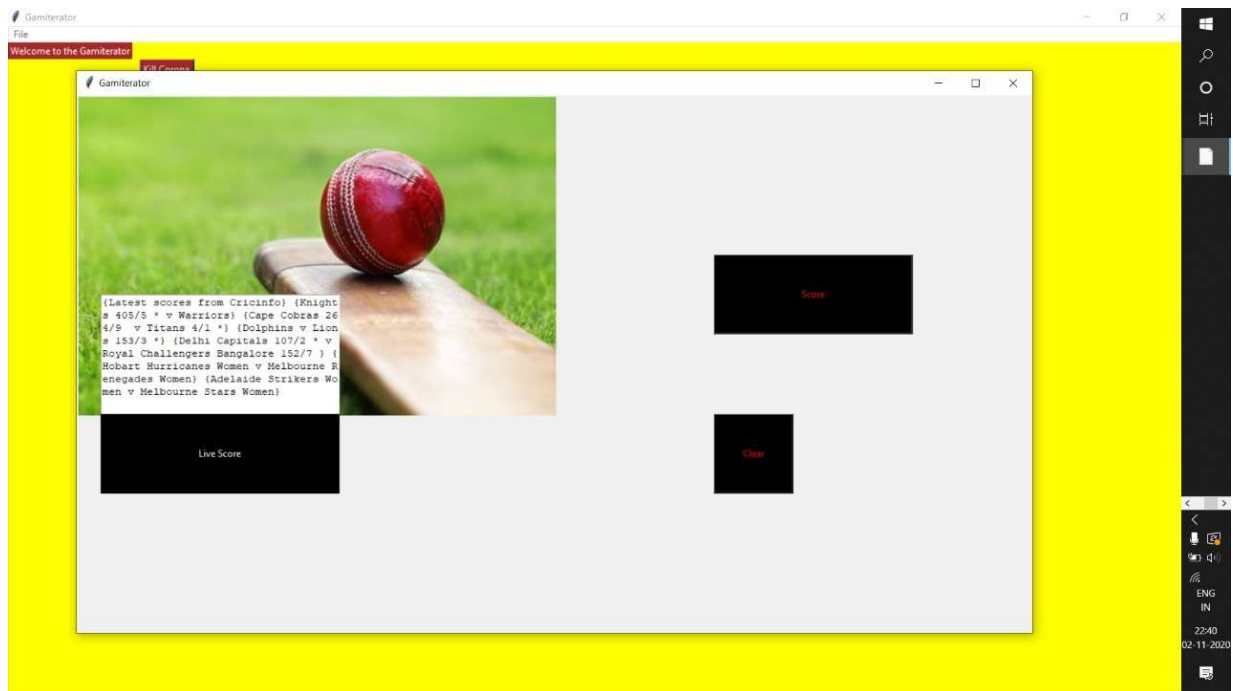
T=tk.Text(root)          #text area creation
T.place(x=30,y=250,height=250,width=300)

l=tk.Label(root,text="Live Score",fg="white",bg="black")
l.place(x=30,y=400,height=100,width=300)

b1=tk.Button(root,text="Score",bg="black",fg="red",command=score)
b1.place(x=800,y=200,height=100,width=250)

b2=tk.Button(root,text="Clear",bg="black",fg="red",command=clear)
b2.place(x=800,y=400,height=100,width=100)

root.mainloop()
```



Pic: Cricker Score using url

Contribution

We are three in a group and each and every team member contributed their part and helped in others (when needed).

Every group member make a Individual game after that put it in a single surface.

Bharat Garg –Tic Toe

Shubham Mishra –Kill Corona

Vikky kumar Pandey –Score predictor

Start Date	End Date	Project states and objective
09 sep 2020	16 sep 2020	Project proposal
24 sep 2020	4 oct 2020	Planning thinking about games
7 oct 2020	17 oct 2020	Start implementing
21 oct 2020	22 oct 2020	Testing
30 oct 2020		Project submission

We have found the planning of this project here which now leads us to completion of the project.

Conclusion

With the completion of this project we learnt following skills..

1. Now we know much more about game implementation
2. We come to know about the full process like implementation testing etc.
3. learnt co-operation between group members
4. Learnt to complete the task before dead-lines
5. come to know about future of python in gaming.
6. Team Work

Refrence

1. <https://www.upgrad.com/blog/python-projects-ideas-topics-beginners/>
2. <https://www.pygame.org/docs/>
3. https://www.tutorialspoint.com/python3/python_gui_programming.htm#:~:text=Tkinter%20Programming,to%20the%20Tk%20GUI%20toolkit.

Github link:

<https://github.com/Pyiterator/GameiteratorPro>