KIDS LEARNING GAME

END TERM REPORT

by

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Roll numbers: A13, B48

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Student Declaration

This is to declare that this report has been written by us. No part of the report is copied from other sources. All information included from other sources has been duly acknowledged. We aver that if any part of the report is found to be copied, we are shall take full responsibility for it**.**

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Roll number: 13

Rakshita Sondhia

Roll number: 48

Place: Lovely Professional University

Date: 29/10/2020

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BONAFIDE CERTIFICATE

It is certified that this project report “KIDS LEARNING GAME” is the bonafide work of “Rakshita and Mazik” who carried out the project work under my supervision.

Signature of the supervisor

Dr Dhanpratap Singh

ID of supervisor: 25706

School of Computer Science and Engineering

1. Background and objectives of the project

1.1. Introduction to Python.

Coding is a skill where you take instructions and translate it into a language the computer understands since computers do not communicate like humans, they communicate in a language called BINARY and it is uses 0's and 1's. Therefore we have a lot of coding websites for people to practice. Coders write the instructions using a programming language. It works as a platform to help programmers make it big in the world of algorithms, computer programming and programming contests. In today's life, there are many coding websites such as Codechef, Codeacademy, edX, Coursera etc. **Python** is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

So this project is basically about designing a learning game for kids which is done using Python language. Coding is the basic building block for every computer science engineer. The different coding languages we come across play an important role in the day to day life of a computer student. TKinter is widely used for developing GUI applications. Along with applications, we can also use Tkinter GUI to develop games. We have tried our best to design a game which basically includes things about how to learn about colors and differentiate between other colors. It includes color name with different text color and kids have to identify the color in which the text is written. We have tried to use our imagination and make it as beautiful as possible.

1.2. Motivation for making this project.

The **motivation** for doing this project was primarily an interest in undertaking a challenging project in an interesting area of research. The opportunity to learn about a new area of computing is what we were really looking for. Learning about how to make games using python and how they really work has always motivated us to take up this project and give our best to understand about this language and try something different by making our own game using Tkinter GUI. Once we started doing it, we realized it’s too much fun to actually know all of this and to implement everything in our own game. Staying motivated essentially means not getting so discouraged that you just give up, we never thought about giving up on this and that’s exactly what made us complete this project today. Our teacher played a major role behind our motivation. He made sure that we understood each and every concept of Python and everything related to this language which was needed in making this project. He stood like a pillar behind us to help us understand as to how to make it work and he was always there to help us with our doubts.

1.3. Outcomes of the project.

The value of any project cannot be measured without defining success. It requires focus on outcomes. Outcomes are the events, occurrences, or changes in conditions, behaviour, or attitudes that indicate progress toward a project's goals. Outcomes are specific, measurable, and meaningful

- It helps student to discover more about coding in python.
- Teaches new ways to learn the colour names to the kids.
- Improve the students creativite and imaginative skill.
- Clears the concept of each colour from the scratch.
- Helps them to take up new such fun challenges games which help them with education too.

1.4. Objectives of the project.

A project objective is a statement that describes the “what” of your project. The “what” that's achievable, realistic, and can be completed within the time allowed. These statements ladder up to the goals of the project, providing stepping stones to success. The main objective of developing this project was to create a kids learning game from which kids can learn about colours in a easy, fun and tricky way as this game allows kids to identify the colour shown in text and write it down. We made sure that our project is completed on time. The objective was to make our project successful and make other kids learn about such fun games and develop interest in python as it’s a really easy coding language and they can make their own such games too.

1.5. Goal of the project.

The project goal refers to achieving a desired outcome (performance goal) at a specific end date (time goal) employing a specific amount of resources (resource goal) This project is in Python so it contains everything related to it and does not perform any type of dynamic database operations. Our goal was:

- To make sure kids can understand about this fun colour guessing game.
- To work on clearing the doubts regarding different colours around us.
- To build interest in students while learning through our game.

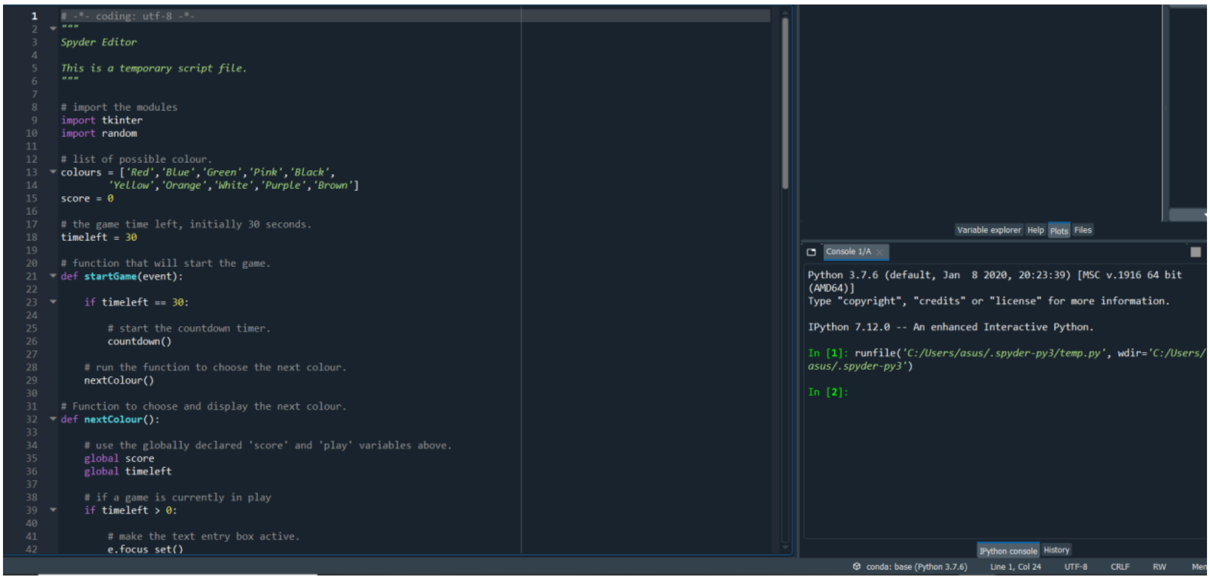
2. Description of the project.

The name of our game is “COLORGAME”.

In this game player has to enter color of the word that appears on the screen and hence the score increases by one, the total time to play this game is 30 seconds. Colors used in this game are Red, Blue, Green, Pink, Black, Yellow, Orange, White, Purple and Brown. Interface will display name of different colors in different colors. Player has to identify the color and enter the correct color name to win the game.

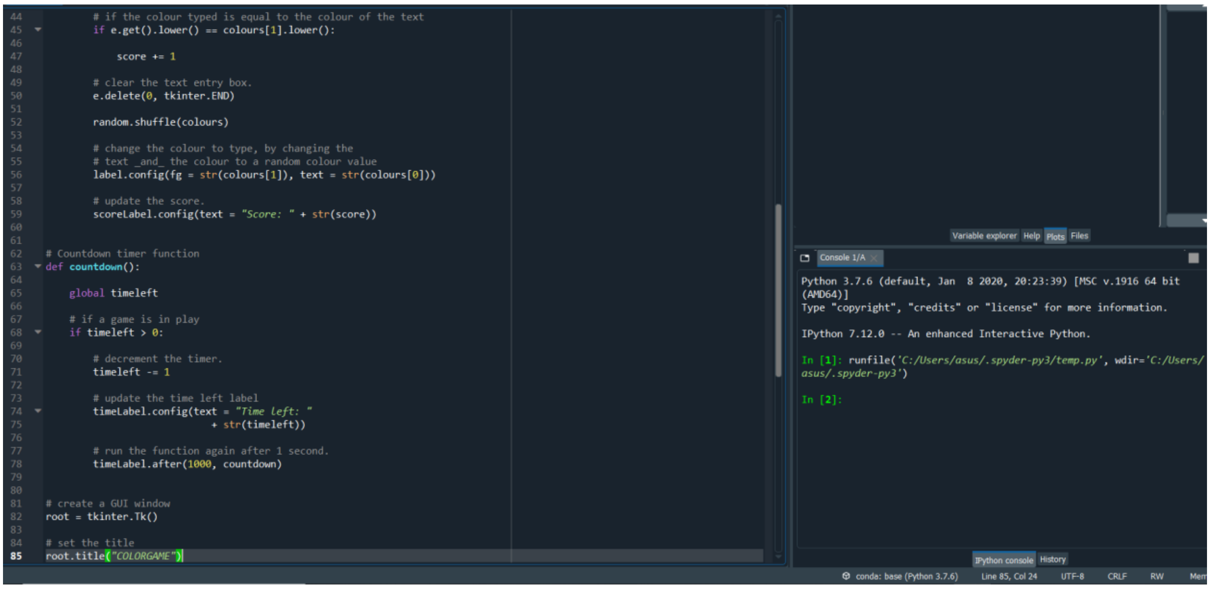
2.1 PYTHON CODE

Tkinter is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.



```python
# -*- coding: utf-8 -*-
"""
Spyder Editor

This is a temporary script file.
"""

# import the modules
import tkinter
import random

# list of possible colour.
colours = ['Red','Blue','Green','Pink','Black',
           'Yellow','Orange','White','Purple','Brown']
score = 0

# the game time left, initially 30 seconds.
timeleft = 30

# function that will start the game.
def startGame(event):

    if timeleft == 30:

        # start the countdown timer.
        countdown()

    # run the function to choose the next colour.
    nextColour()

# Function to choose and display the next colour.
def nextColour():

    # use the globally declared 'score' and 'play' variables above.
    global score
    global timeleft

    # if a game is currently in play
    if timeleft > 0:

        # make the text entry box active.
        e.focus set()
```

```
Python 3.7.6 (default, Jan  8 2020, 20:23:39) [MSC v.1916 64 bit
(AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.12.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/asus/.spyder-py3/temp.py', wdir='C:/Users/
asus/.spyder-py3')

In [2]:
```



```
        # if the colour typed is equal to the colour of the text
        if e.get().lower() == colours[1].lower():

            score += 1

        # clear the text entry box.
        e.delete(0, tkinter.END)

        random.shuffle(colours)

        # change the colour to type, by changing the
        # text _and_ the colour to a random colour value
        label.config(fg = str(colours[1]), text = str(colours[0]))

        # update the score.
        scoreLabel.config(text = "Score: " + str(score))


# Countdown timer function
def countdown():

    global timeleft

    # if a game is in play
    if timeleft > 0:

        # decrement the timer.
        timeleft -= 1

        # update the time left label
        timeLabel.config(text = "Time left: "
                             + str(timeleft))

        # run the function again after 1 second.
        timeLabel.after(1000, countdown)


# create a GUI window
root = tkinter.Tk()

# set the title
root.title("COLORGAME")
```

```
Python 3.7.6 (default, Jan  8 2020, 20:23:39) [MSC v.1916 64 bit
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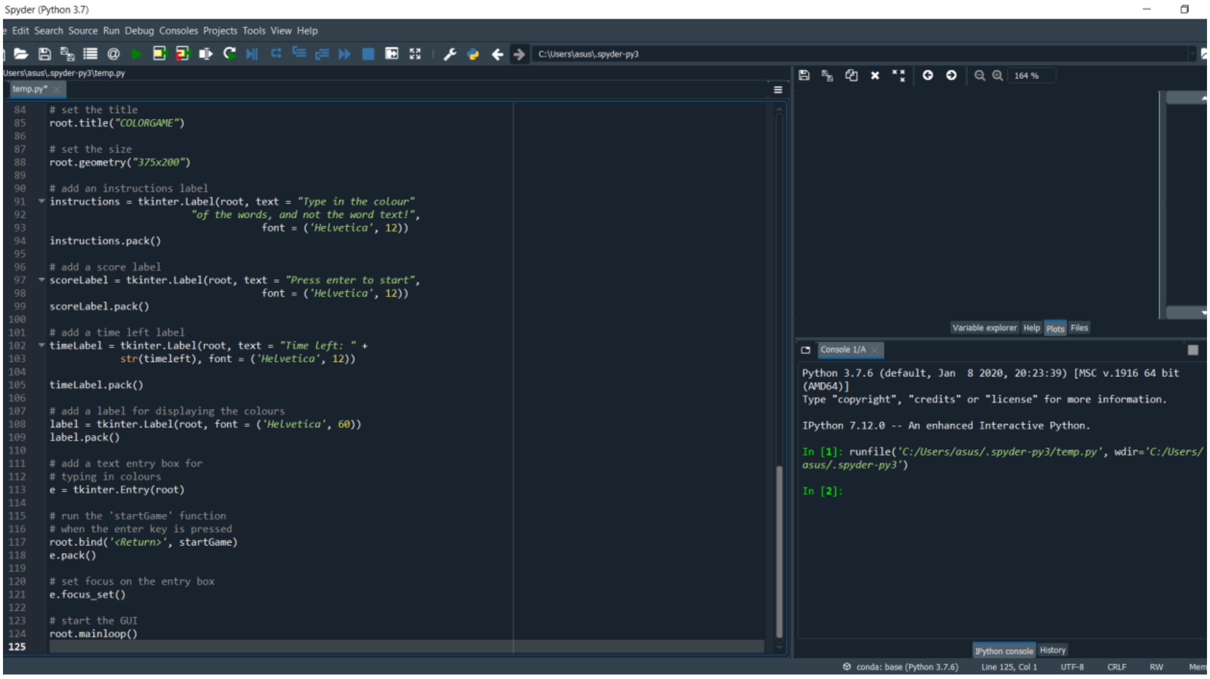
Spyder (Python 3.7)
e Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\asus\.spyder-py3
Users\asus\.spyder-py3\temp.py
temp.py*
164 %
Variable explorer
Help
Plots
Files
Console 1/A
IPython console
History
conda: base (Python 3.7.6)
Line 125, Col 1
UTF-8
CRLF
RW
Mem

```
# set the title
root.title("COLORGAME")

# set the size
root.geometry("375x200")

# add an instructions label
instructions = tkinter.Label(root, text = "Type in the colour"
                        "of the words, and not the word text!",
                                        font = ('Helvetica', 12))
instructions.pack()

# add a score label
scoreLabel = tkinter.Label(root, text = "Press enter to start",
                                        font = ('Helvetica', 12))
scoreLabel.pack()

# add a time left label
timeLabel = tkinter.Label(root, text = "Time left: " +
            str(timeleft), font = ('Helvetica', 12))

timeLabel.pack()

# add a label for displaying the colours
label = tkinter.Label(root, font = ('Helvetica', 60))
label.pack()

# add a text entry box for
# typing in colours
e = tkinter.Entry(root)

# run the 'startGame' function
# when the enter key is pressed
root.bind('<Return>', startGame)
e.pack()

# set focus on the entry box
e.focus_set()

# start the GUI
root.mainloop()

```

```
Python 3.7.6 (default, Jan  8 2020, 20:23:39) [MSC v.1916 64 bit
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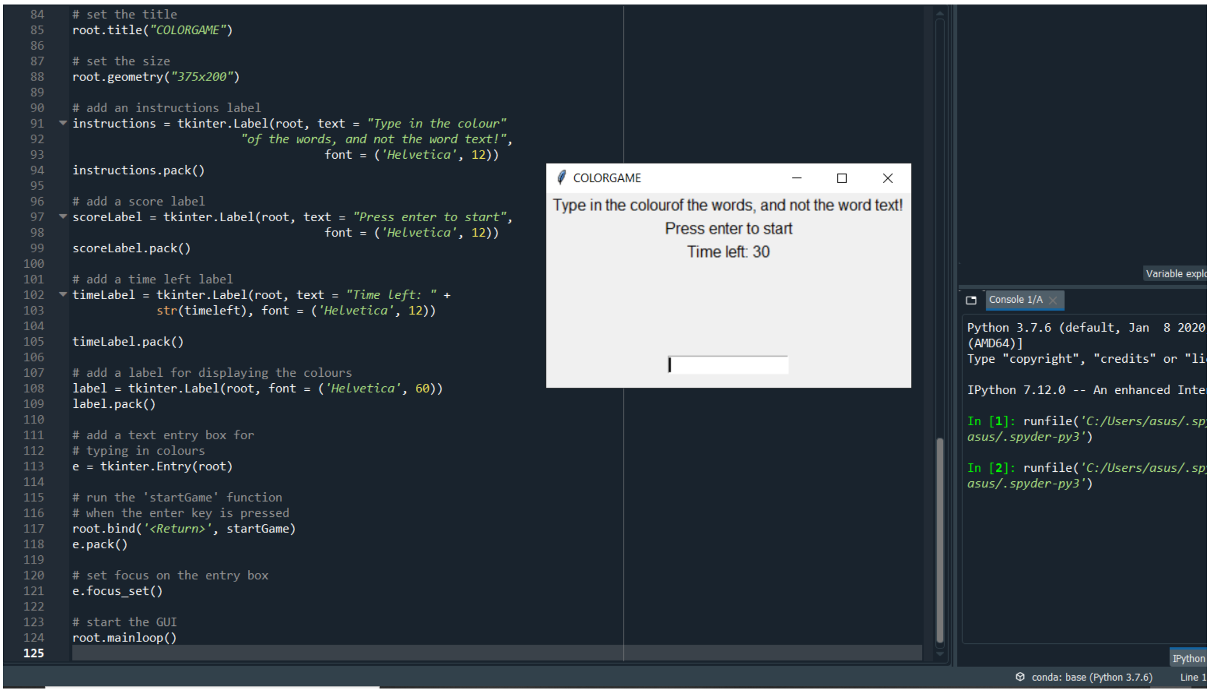
In [2]:
```

2.2. COLORGAME BOX.

After clicking on the run button, a new pop-up box will appear with the heading “Colorgame”. This box will show you the initial score and the time left for the game to end. It will also show the brief description as to how to play the game. User need to press the enter button to start the game.



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```

COLORGAME

Type in the colourof the words, and not the word text!

Press enter to start

Time left: 30

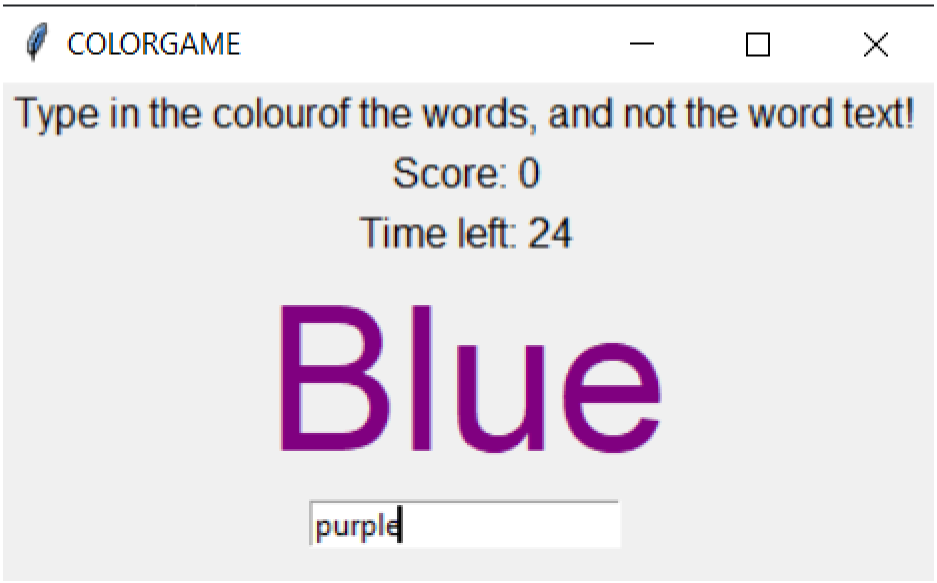
```
Python 3.7.6 (default, Jan  8 2020
(AMD64)]
Type "copyright", "credits" or "li

IPython 7.12.0 -- An enhanced Inte

In [1]: runfile('C:/Users/asus/.sp
asus/.spyder-py3')

In [2]: runfile('C:/Users/asus/.sp
asus/.spyder-py3')
```

After clicking on enter, the game will start.



COLORGAME

Type in the colourof the words, and not the word text!

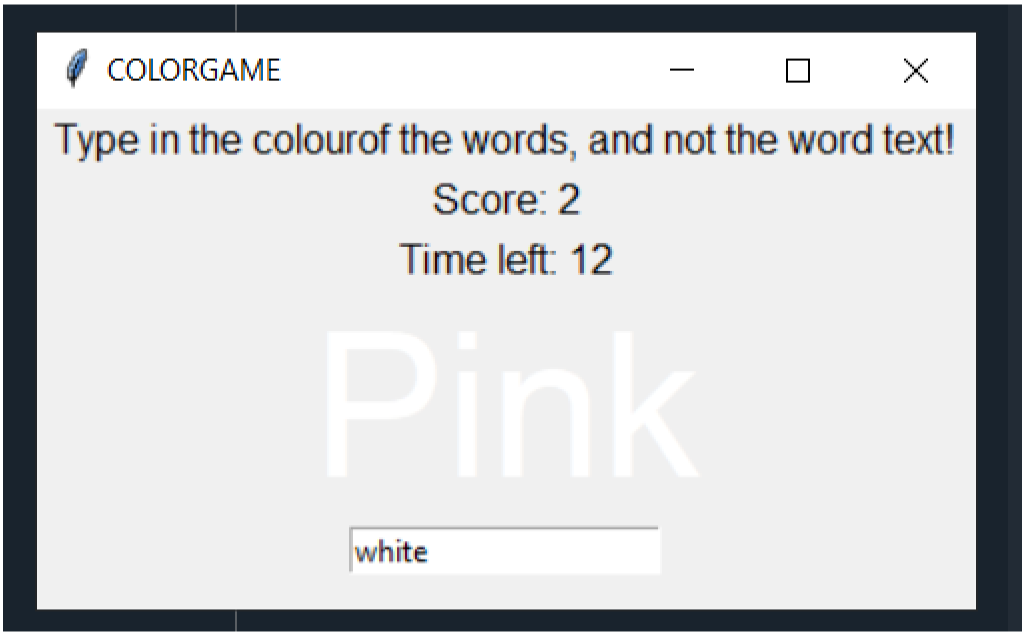
Score: 0

Time left: 24

Blue

purple

Press Enter again and a new text color will appear.



Type in the colourof the words, and not the word text!

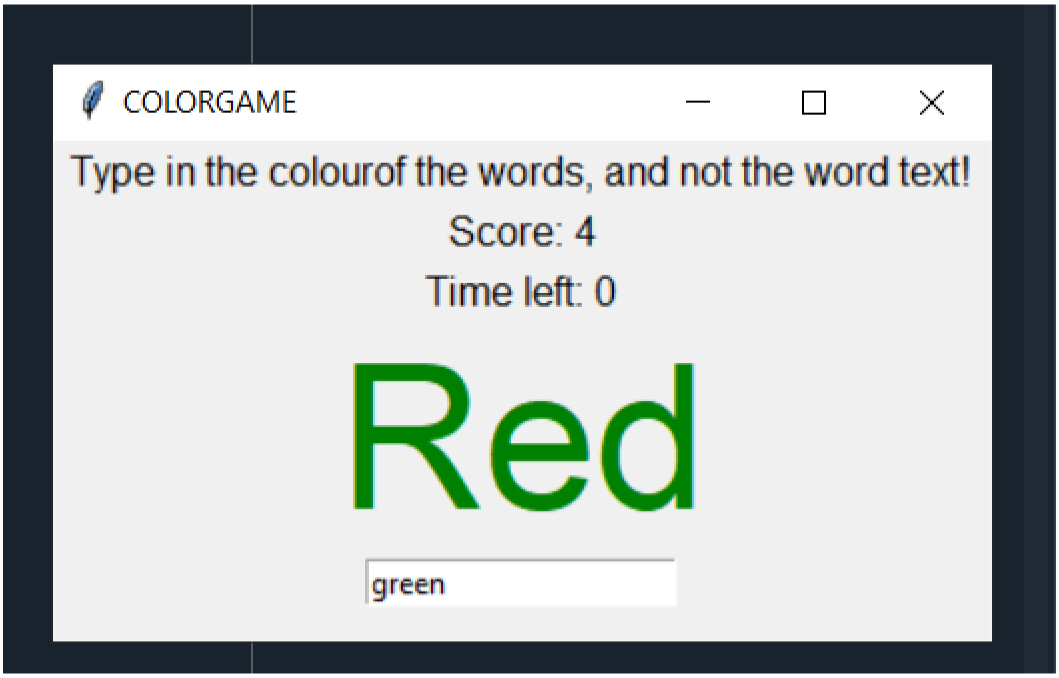
Score: 2

Time left: 12

Pink

white

If the user will write the correct color name, the score will increase by one and if the user skips the color, the previous score will be carried forward.



Type in the colourof the words, and not the word text!

Score: 4

Time left: 0

Red

green

When the time left reaches ‘0’, the game will automatically stop at that point. To play again, user needs to start the game again. This is how our game works.

3. Role and Responsibility.

- Role of Mazik Fernandes

- ❖ Writing the half portion of the code.
- ❖ Making sure there are no syntax and identation errors in the code.
- ❖ Trying to keep the code simple ans easy to understand.
- ❖ Preparing half of the report.

- Role of Rakshita Sondhia

- ❖ Writing the other half portion of the code.
- ❖ Making sure that the game is easily accessible to kids of any age group.
- ❖ Finding the most efficient way to function the working of Game.
- ❖ Preparing other half of the report.

In short, we both have worked in a collaborative way and made this “KIDS LEARNING GAME” and its report together. Our responsibility was to make sure that the game works successfully without any errors in it.

4. Technologies and Framework.

We have used PYTHON language to complete this project.

We have written the entire code in Spyder(Python 3.7).

5. STRENGTHS.

- The game is supported by all desktop devices.
- Python is easy to use and so is the game.
- Kids can learn a lot of things about colors through this game.
- Easily accessible.
- Free of cost.
- Open source.
- Less coding used to design the game.
- It improves the creative skills of kids.
- The game is simple to use, it is not complicated for the users.
- It teaches the kids about the importance of colors.

6. WEAKNESS.

- It has less security.
- It has speed limits.
- It has design restrictions which makes it less attractive.
- Not native to mobile environment.
- There is a lot of competition in kids learning games platform.
- Kids usually go for games which are famous and has more views.

7. OPPORTUNITIES.

- This game can help kids to get more creative and enhance their skills into learning things in a new and fun way.
- The game helps in teaching students about different colours whose knowledge is essential for kids.
- It is free of cost therefore helping kids of lower class to access it too.

8. THREATS.

- The game and code is less secured.
- Can be hacked and misued easily.
- Other people can copy our content for their own websites therefore creating copyright issues.

Thank you