Московский государственный технический

университет им. Н.Э. Баумана

Факультет «Информатика и системы управления»

Кафедра ИУ5 «Системы обработки информации и управления»

Курс «Парадигмы и конструкции языков программирования»

Домашнее задание

Выполнил:

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Москва, 2023 г.

Задание

Написать игру камень – ножницы – бумага.

Код программы

```
from tkinter import *
import random


root = Tk()
root.title("ROCK, PAPER, SCISSOR GAME")
width = 690
height = 600
screen_width = root.winfo_screenwidth()
screen_height = root.winfo_screenheight()
x = (screen_width / 2) - (width / 2)
y = (screen_height / 2) - (height / 2)
root.geometry("%dx%d+%d+%d" % (width, height, x, y))
root.resizable(0, 0)
root.config(bg="green")


# ++++++++++++++++++++IMAGES++++++++++++++++++++++++++++
blank_image = PhotoImage(file="resources/blank.png")
rock_player = PhotoImage(file="resources/rock_player.png")
rock_player_ado = rock_player.subsample(3, 3)
paper_player = PhotoImage(file="resources/paper_player.png")
paper_player_ado = paper_player.subsample(3, 3)
scissor_player = PhotoImage(file="resources/scissor_player.png")
```

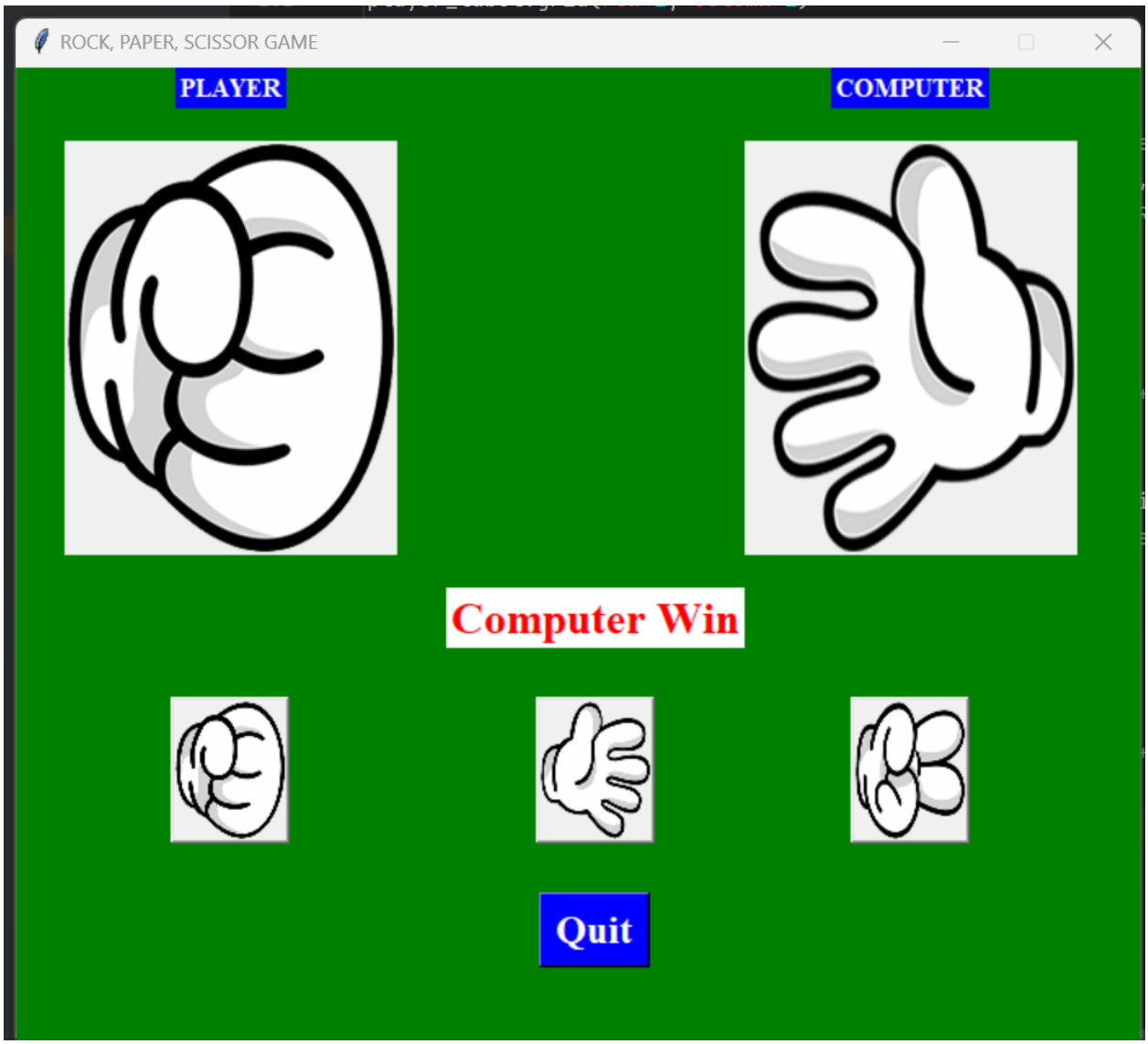
```
scissor_player_ado = scissor_player.subsample(3, 3)
rock_computer = PhotoImage(file="resources/rock_computer.png")
paper_computer = PhotoImage(file="resources/paper_computer.png")
scissor_computer = PhotoImage(file="resources/scissor_computer.png")


# ++++++++++++++++++++METHODS++++++++++++++++++++++++++
def Rock():
    global player_option
    player_option = 1
    player_image.configure(image=rock_player)
    MatchProcess()


def Paper():
    global player_option
    player_option = 2
    player_image.configure(image=paper_player)
    MatchProcess()


def Scissor():
    global player_option
    player_option = 3
    player_image.configure(image=scissor_player)
    MatchProcess()
```

```
def MatchProcess():
    computer_option = random.randint(1, 3)
    if computer_option == 1:
        computer_image.configure(image=rock_computer)
        RockCom()
    elif computer_option == 2:
        computer_image.configure(image=paper_computer)
        PaperCom()

    elif computer_option == 3:
        computer_image.configure(image=scissor_computer)
        ScissorCom()



def RockCom():
    if player_option == 1:
        status_label.config(text="Game Tie")
    elif player_option == 2:
        status_label.config(text="Player Win")
    elif player_option == 3:
        status_label.config(text="Computer Win")



def PaperCom():
    if player_option == 1:
        status_label.config(text="Computer Win")
    elif player_option == 2:
        status_label.config(text="Game Tie")
```

```
    elif player_option == 3:
        status_label.config(text="Player Win")


def ScissorCom():
    if player_option == 1:
        status_label.config(text="Player Win")
    elif player_option == 2:
        status_label.config(text="Computer Win")
    elif player_option == 3:
        status_label.config(text="Game Tie")


def ExitApplication():
    root.destroy()
    exit()


# ++++++++++++++++++++LABEL WIDGET++++++++++++++++++++++++++
player_image = Label(root, image=blank_image)
computer_image = Label(root, image=blank_image)
player_label = Label(root, text="PLAYER")
player_label.grid(row=1, column=1)
player_label.config(bg="blue", fg="white", font=('Times New Roman', 12, 'bold'))
computer_label = Label(root, text="COMPUTER")
computer_label.grid(row=1, column=3)
computer_label.config(bg="blue", fg="white", font=('Times New Roman', 12, 'bold'))
status_label = Label(root, text="", font=('Times New Roman', 12))
```

```
status_label.config(bg="white", fg="red", font=('Times New Roman', 20, 'bold'))
player_image.grid(row=2, column=1, padx=30, pady=20)
computer_image.grid(row=2, column=3, pady=20)
status_label.grid(row=3, column=2)

# ++++++++++++++++++++BUTTON WIDGET++++++++++++++++++++++++++
rock = Button(root, image=rock_player_ado, command=Rock)
paper = Button(root, image=paper_player_ado, command=Paper)
scissor = Button(root, image=scissor_player_ado, command=Scissor)
button_quit = Button(root, text="Quit", bg="Blue", fg="white", font=('Times New
Roman', 18, 'bold'), command=ExitApplication)
rock.grid(row=4, column=1, pady=30)
paper.grid(row=4, column=2, pady=30)
scissor.grid(row=4, column=3, pady=30)
button_quit.grid(row=5, column=2)

# ++++++++++++++++++++INITIALIZATION++++++++++++    ++++++++++++++
if __name__ == '__main__':
    root.mainloop()
```

Анализ результатов


ROCK, PAPER, SCISSOR GAME
PLAYER
COMPUTER
Computer Win
Quit