Bangladesh University of Business and Technology
BUBT

Report On
Catch the Fruit

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Declaration of Authorship

We, **Pias Miah, Md Israfil Islam, Md Alamin Shikder, Asha Akter** declare this project **"Catch The Fruit"** and the work presented in it are our own. We confirm that. This work was done mainly for B.Sc. Engineering in CSE degree at this university. There any part of this project has been submitted for a qualification from this university. We have acknowledged all main sources of help. We have consulted the published work of others; this is always clearly attributed.

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Certificate

This is to certify that we are students of B.Sc. in CSE have completed the report work titled **"Catch The Fruit"** satisfactory in partial for the requirement of B.Sc. in CSE Bangladesh university of Business and Technology in the year 2022.

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Dedication

Dedicated to our loving parents and all honorable teachers for all their love and inspiration.

Abstract

This report is meant for describing all the features and procedures that were followed while developing the project. This report specially mentions the details of the project how it was developed, the primary requirement as well as various features and functionalities of the project and the procedures followed in achieving these objectives. This system helps in freshness our mind and can thus help in spend times. "**Catch The Fruit**" using this we can calm our mind and brain.

Acknowledgements

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Approval

This project **“Catch The Fruit**" submitted by **Pias Miah (19201103054), Md Israfil Islam (19201103075), Md Alamin Shikder (19201103068), Asha Akter (19201103077)**, Department of Computer Science and Engineering, Bangladesh University of Business and Technology, under the supervision of

Ms. Humayra Ahmed, Lecturer, Department of Computer Science and Engineering, has been accepted as satisfactory for the partial fulfillment of the requirement for the degree of Bachelor of Science (B.Sc.) in Computer Science and Engineering and approved as to its style and contents.

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Table of Contents

Chapter 1
Introduction

1.1 Python Programming Language

Python is one of the many open source object oriented programming application software available in the market. Python is developed by Guido van Rossum. Guido van Rossum started implementing Python in 1989. Python is a very simple programming language so even if you are new to programming, you can learn python without facing any issues. Some of the many uses of Python are application development, implementation of automation testing process, allows multiple programming build, fully constructed programming library, can be used in all the major operating systems and platforms, database system accessibility, simple and readable code, easy to apply on complex software development processes, aids in test driven software application development approach, machine learning/ data analytics, helps pattern recognitions, supported in multiple tools, permitted by many of the provisioned frameworks, etc.

1. Readable: Python is a very readable language.
2. Easy to Learn: Learning python is easy as this is a expressive and high level programming language, which means it is easy to understand the language and thus easy to learn.

3. Cross platform: Python is available and can run on various operating systems such as Mac, Windows, Linux, Unix etc. This makes it a cross platform and portable language.

4. Open Source: Python is a open source programming language.

5. Large standard library: Python comes with a large standard library that has some handy codes and functions which we can use while writing code in Python.

6. Free: Python is free to download and use. This means you can download it for free and use it in your application. See: Open Source Python License. Python is an example of a FLOSS (Free/Libre Open Source Software), which means you can freely distribute copies of this software, read its source code and modify it.

7. Supports exception handling: If you are new, you may wonder what is an exception? An exception is an event that can occur during program exception and can disrupt the normal flow of program. Python supports exception handling which means we can write less error prone code and can test various scenarios that can cause an exception later on.

8. Advanced features: Supports generators and list comprehensions. We will cover these features later.

9. Automatic memory management: Python supports automatic memory management which means the memory is cleared and freed automatically.

1.2 Applications of Python

Python can be used to develop different applications like web applications, graphic user interface based applications, software development application, scientific and numeric applications, network programming, Games and 3D applications and other business applications. It makes an interactive interface and easy development of applications. You may be wondering what all are the applications of Python. There are so many applications of Python, here are some of the them.

1. Web development–Web framework like Django and Flask are based on Python. They help you write server side code which helps you manage database, write backend programming logic, mapping URLs etc.

2. Machine learning–There are many machine learning applications written in Python. Machine learning is a way to write a logic so that a machine can learn and solve a particular problem on its own. For example, products recommendation in websites like Amazon, Flipkart, eBay etc. is a machine learning algorithm that recognizes user's interest. Face recognition and Voice recognition in your phone is another example of machine learning.

3. Data Analysis–Data analysis and data visualization in form of charts can also be developed using Python.

4. Scripting–Scripting is writing small programs to automate simple tasks such as sending automated response emails etc. Such type of applications can also be written in Python programming language.

5. Game development–You can develop games using Python.

6. You can develop Embedded applications in Python.

7. Desktop applications–You can develop desktop application in Python using library like TK inter or QT.

Chapter 2

System Requirements

2.1 Software Requirements

PyCharm2019.1.1 (Community Edition)
Build#PC-191.6605.12, built on April 3, 2019
JRE:11.0.2+9-b159.34amd64
JVM: OpenJDK 64-Bit Server VM by JetBrains s.r.o

2.2 Hardware Requirements

Operating system: windows 10
Processor: intel core i5
Disk space:1G b

Chapter 3

Implementation and Results

3.1 About Project

This is a simple “Catch The Fruit” game using Python programming language. Beginners can use this as a small project to boost their programming skills and understanding logic.

1. The “Catch The Fruit” program randomly selects a secret picture from a list of secret picture. The random module will provide this ability, so line 1 in program imports it.
2. The Game: Here, a random picture (a fruit and something) is picked up from our collection and the player gets limited chances to win the game.
3. When a picture in that picture is picked up, that picture position in the object is made visible. In this way, all chocolate picture of pictures are to be guessed before all the chances are over.
4. For convenience, we have given live 5 chances. For example, picture to be guessed is mango, then user gets 100 point, as a picture is chocolate user loss his live.

3.2 Project Code

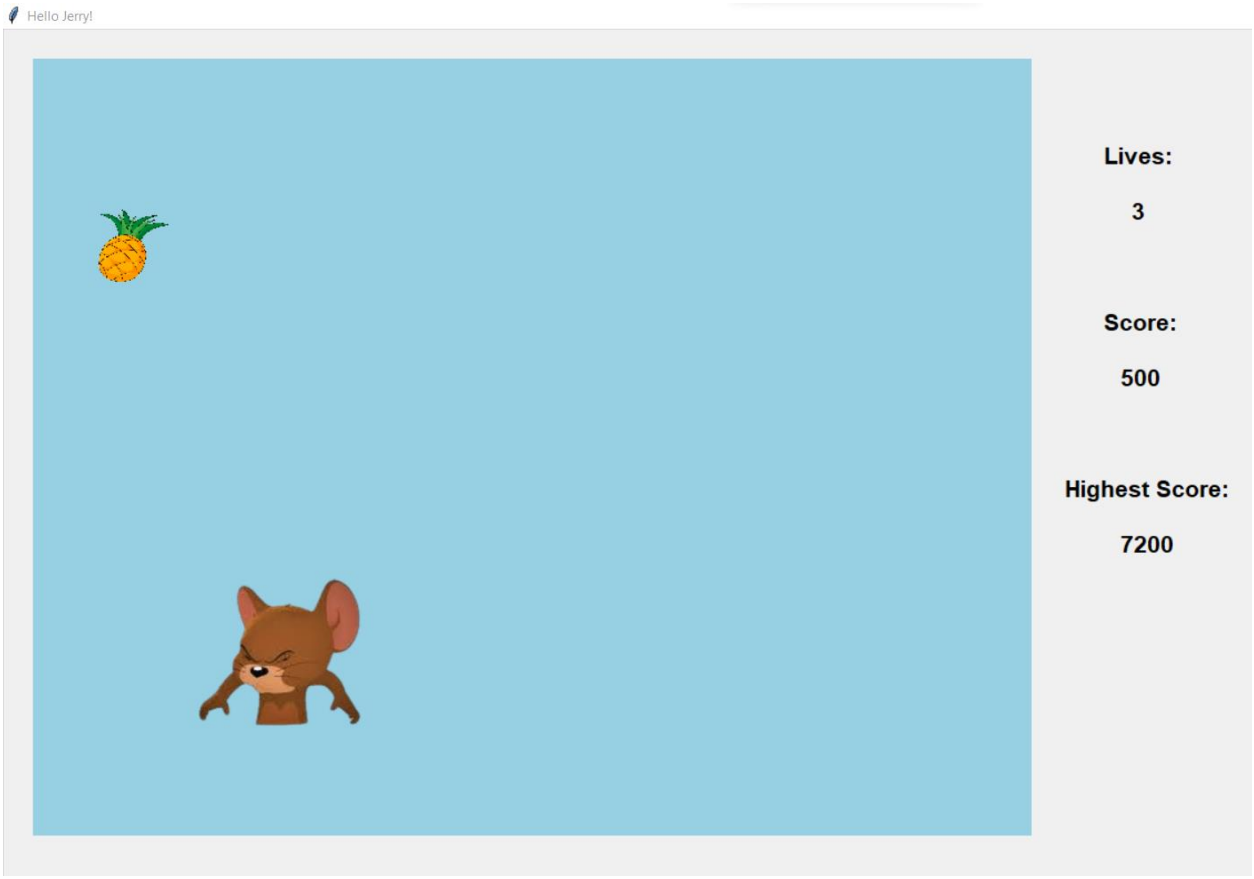
```
from tkinter import *
from random import *
import tkinter.messagebox
class ScoreBoard():

    def __init__(self, parent):
        self.parent = parent
        self.initGUI()
        self.reset()

    def initGUI(self):

        self.livesVar = IntVar()
        Label(self.parent, text="Lives:", font=("Helvetica", 16, "bold")).grid(row=1, column=2,
padx=35, pady=100,
                                                                    sticky=N + W)
        Label(self.parent, textvariable=self.livesVar, font=("Helvetica", 16, "bold")).grid(row=1,
column=2, padx=60,
                                                                        pady=150, sticky=N + W)

        self.scoreVar = IntVar()
        Label(self.parent, text="Score:", font=("Helvetica", 16, "bold")).grid(row=1, column=2,
padx=35, pady=250,
                                                                    sticky=N + W)
```

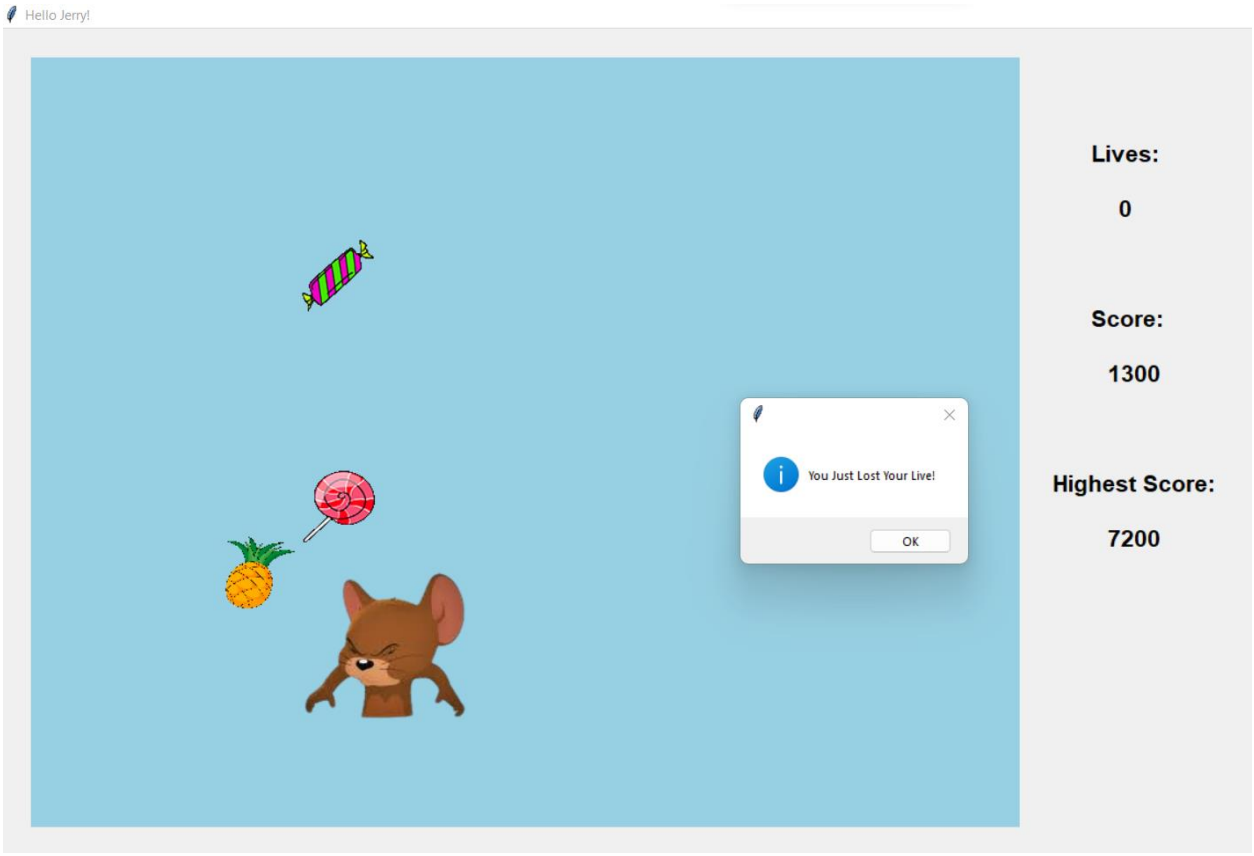
```
        Label(self.parent, textvariable=self.scoreVar, font=("Helvetica", 16, "bold")).grid(row=1,
column=2, padx=50,
                                                                pady=300, sticky=N + W)

        self.highScoreVar = IntVar()
        Label(self.parent, text="Highest Score:", font=("Helvetica", 16, "bold")).grid(row=1,
column=2, padx=0,
                                                              pady=400, sticky=N + W)

        Label(self.parent, textvariable=self.highScoreVar, font=("Helvetica", 16,
"bold")).grid(row=1, column=2,
                                                                padx=50, pady=450,
                                                                sticky=N + W)
def reset(self):
        self.lives = 5
        self.score = 0
        self.highScore = self.loadScore()

        self.livesVar.set(self.lives)
        self.scoreVar.set(self.score)
        self.highScoreVar.set(self.highScore)

    def loadScore(self):
        with open("high-score.txt", "r") as data:
            return int(data.read())

    def saveScore(self):
        if self.score > self.highScore:
            with open("high-score.txt", "w") as data:
                data.write(str(self.score))

    def gameOver(self):
        self.saveScore()
        tkinter.messagebox.showinfo("", "You Just Lost Your Live!")
        if tkinter.messagebox.askyesno("", "Wanna Play Again?"):
            self.reset()
        else:
            exit()

    def updateBoard(self, livesStatus, scoreStatus):
        self.lives += livesStatus;
        self.score += scoreStatus
        if self.lives < 0: self.gameOver()
        self.livesVar.set(self.lives);
        self.scoreVar.set(self.score)
```

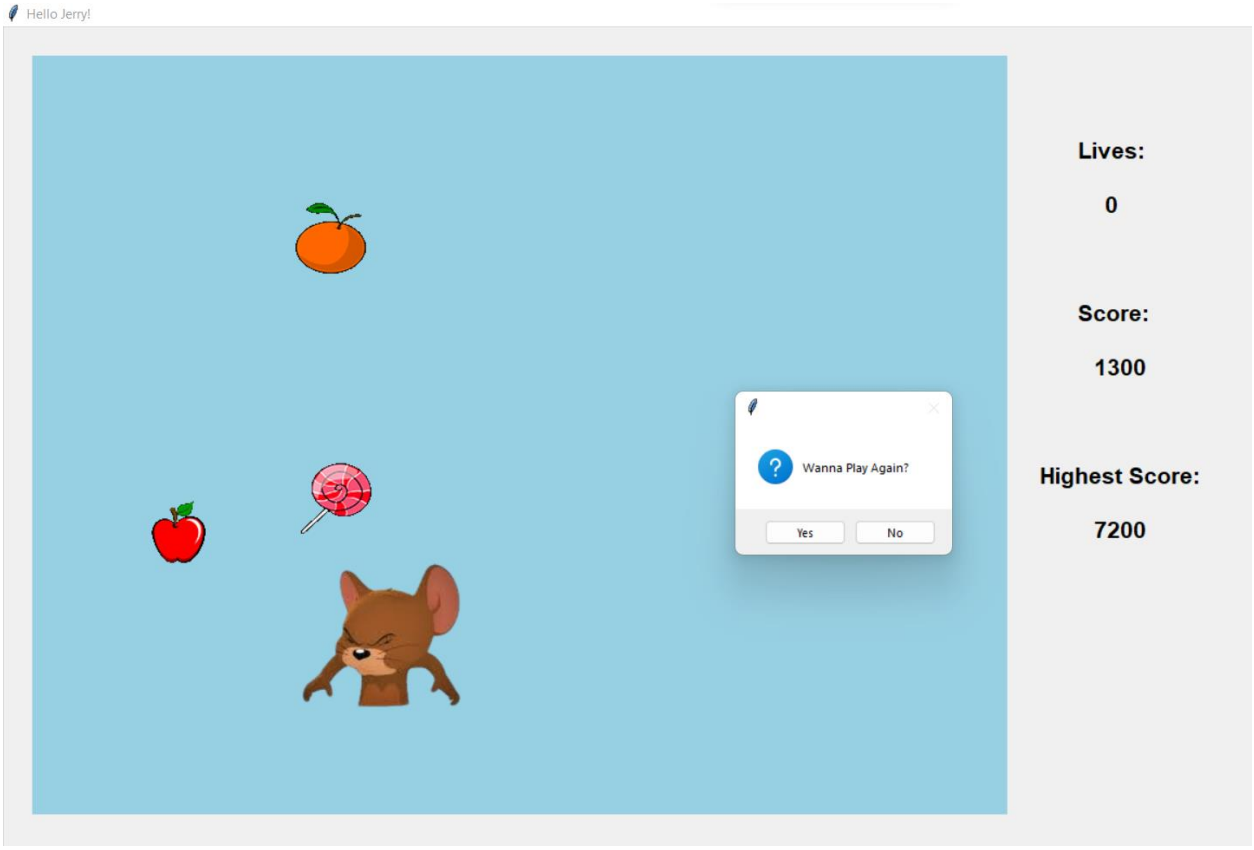
```
class ItemsFallingFromSky():

    def __init__(self, parent, canvas, player, board):
        self.parent = parent
        self.canvas = canvas
        self.player = player
        self.board = board

        self.fallSpeed = 50
        self.xPosition = randint(50, 750)
        self.isgood = randint(0, 1)

        self.goodItems = ["ananas.gif", "apple.gif", "orange.gif"]
        self.badItems = ["candy1.gif", "candy2.gif", "lollypop.gif"]

        if self.isgood:
            self.itemPhoto = tkinter.PhotoImage(file="images/{}".format(choice(self.goodItems)))
            self.fallItem = self.canvas.create_image((self.xPosition, 50), image=self.itemPhoto,
tag="good")
        else:
            self.itemPhoto = tkinter.PhotoImage(file="images/{}".format(choice(self.badItems)))
            self.fallItem = self.canvas.create_image((self.xPosition, 50), image=self.itemPhoto,
tag="bad")

        self.move_object()

    def move_object(self):

        self.canvas.move(self.fallItem, 0, 15)

        if (self.check_touching()) or (self.canvas.coords(self.fallItem)[1] > 650):
            self.canvas.delete(self.fallItem)
        else:
            self.parent.after(self.fallSpeed, self.move_object)

    def check_touching(self):

        x0, y0 = self.canvas.coords(self.fallItem)
        x1, y1 = x0 + 50, y0 + 50

        overlaps = self.canvas.find_overlapping(x0, y0, x1, y1)

        if (self.canvas.gettags(self.fallItem)[0] == "good") and (len(overlaps) > 1) and (
                self.board.lives >= 0):
            self.board.updateBoard(0, 100)
```

```
            return True
        elif (self.canvas.gettags(self.fallItem)[0] == "bad") and (len(overlaps) > 1) and (
                self.board.lives >= 0):
            self.board.updateBoard(-1, 0)
            return True
        return False


class TheGame(ItemsFallingFromSky, ScoreBoard):

    def __init__(self, parent):
        self.parent = parent

        self.parent.geometry("1024x650")
        self.parent.title("Hello Jerry!")

        self.canvas = Canvas(self.parent, width=800, height=600)
        self.canvas.config(background="#E5FFCC")
        self.canvas.bind("<Key>", self.keyMoving)
        self.canvas.focus_set()
        self.canvas.grid(row=1, column=1, padx=25, pady=25, sticky=W + N)

        self.playerPhoto = tkinter.PhotoImage(file="images/{}".format("jew.gif.png"))
        self.playerChar = self.canvas.create_image((275, 533), image=self.playerPhoto,
tag="player")

        self.personalboard = ScoreBoard(self.parent)

        self.createEnemies()

    def keyMoving(self, event):
        if (event.char == "a") and (self.canvas.coords(self.playerChar)[0] > 50):
            self.canvas.move(self.playerChar, -50, 0)
        if (event.char == "l") and (self.canvas.coords(self.playerChar)[0] < 750):
            self.canvas.move(self.playerChar, 50, 0)

    def createEnemies(self):
        ItemsFallingFromSky(self.parent, self.canvas, self.playerChar, self.personalboard)
        self.parent.after(1100, self.createEnemies)


if __name__ == "__main__":
    root = Tk()
    TheGame(root)
    root.mainloop()
```

3.3 Result




Hello Jerry!
You Just Lost Your Live!
OK
Lives:
0
Score:
1300
Highest Score:
7200


Hello Jerry!
Wanna Play Again?
Yes
No
Lives:
0
Score:
1300
Highest Score:
7200

Chapter 4
Conclusion

In the conclusion of this project, “Catch The Fruit” is a traditional game, typically played with pictures. Catch the fruit in the python is a simple game. The project file contains image files and python scripts. GUI uses the pygame library. Talking about the gameplay, it’s a simple single player platformer game, where the player has to collect all the candies in order to win the game. The main objective of this game is to take as many fruits as you can. This game is inspired by the 90s famous game “fruit-ninja”. A simple and clean GUI is provided for easy gameplay. The gameplay design is so simple that the user won’t find it difficult to use and understand. Different images are used in the development of this game project, the gaming environment is just like the fruit ninja game.

Chapter 5
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