Informatics Institute of Technology

Foundation Program in Higher Education

Module: DOC334 Introduction to Programming in python- P2

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Type of Assignment: Individual coursework Report

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Acknowledge

I would like to take this opportunity to thank all the IIT staff for giving us the opportunity to follow the foundation course and also l specially thank our programming I lecturer Dr. Damitha Karunarathna and my tutors Mr. Nishan Saliya for giving me the knowledge to do this report. Rather than the academic knowledge I got a lot of information while gathering information. So, at last, I would like to take the opportunity to thank for all the feedbacks that you provided for me and it really helped me to correct all our mistakes. Thank you.

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Assignment to be done:

- A Python 3.x program will be needed to create which will allow users to demonstrate the hand game called "Rock Paper Scissor".

Tasks to Complete:

- The Task is to create a Python 3.x program which mimics this game. A single player must be able to play this game with a computer. User can create a Python program which runs in the console. The user can decide how the menus and the console interface will look like. The player must clearly state the assumptions.

Penalties of the game:

- Both players displaying the same sign will result in a draw 2.
- Both players displaying different signs will depict a win or lose

  - ❖ Scissor beats the paper as it cuts through the paper
  - ❖ Paper beats the rock as it can wrap the rock
  - ❖ Rock beats the scissor as it can destroy the scissor

External Packages used:

- python -m pip install -U prettytable
- import mysql. connector
- import from_db_cursor

Code of the main python file:

File Edit Format Run Options Window Help

```python
import Sub.checkPossibilities

#Creating and initializing the variables
Username = ""
choiceList=("Rock","Paper","Scissor")

# Inputting the variables
Username = input("Please enter your name:")
print("Welcome to MSI games",Username)

#importing the function through a module
Sub.checkPossibilities.checkPossibilities(choiceList,Username)
```

Code of the menu of the game:

File Edit Format Run Options Window Help

```python
def myProgramme():
    "Displaying the main menue of the game"
    print("(--------------------------------------)")
    print("(------------Menue---------------------)")
    print("(----Scissor beats Paper,Scissor wins---)")
    print("(----Paper beats Rock,Rock wins---------)")
    print("(----Rock beats Scissor,Rock wins-------)")
    print("(----End of game------------------------)")
    print("(--------------------------------------)")
    return
```

Code for the database connection and pretty table:

- (Chose to store data of the game in a database server)
- (To create the pretty table python -m pip install -U prettytable was installed)

```
recordTable.py - D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2\Sub\recordTable.py (3.9.0)
File  Edit  Format  Run  Options  Window  Help

def getUserResults(Username,marks1,marks2,Tied):
    "creatiing the database"
    import mysql.connector
    from prettytable import from_db_cursor
    import mysql.connector

#open database connection with a dictionary
    conDict={"host":"localhost","user":"root","database":"gamedata","password":""}

    db=mysql.connector.connect(**conDict)

#prepare a cusor object using cursor()method
    cursor=db.cursor()
    cursor.execute("SELECT * FROM gameresults")
    gameplay=from_db_cursor(cursor)
    print(gameplay)

#styling the html table and setting the html attributes
    data=gameplay.get_html_string(attributes={"name":"gameResults","class":"table"},format=True)

#open and record the data to an html file
    f=open("Result.html","w")
    f.write(data)


#execute sql query using execute()method
    updateText="INSERT INTO gameresults VALUES ('"+Username+"','"+marks1+"','"+marks2+"','"+Tied+"')"
    cursor.execute(updateText)

#commit the change
    db.commit()

#disconnect from the server
    db.close()
    return
```

Code of the main process of the game:

File   Edit   Format   Run   Options   Window   Help

```python
def checkPossibilities(list,Username):
    "This will be the place where the entire code runs"
    marks1 = 0
    marks2 = 0
    Tied=0
    decision="yes"
    import random
    import Sub.mainMenue
    import Sub.recordTable
    #process the game
    while (decision == "yes"):
        Sub.mainMenue.myProgramme()
        player1=random.choice(list)
        player2 = input("Enter your choice here:")
        print("A:", player1)
        if (player1 == player2):
            print("Game tied. Please try again with another choice")
            Tied=Tied+1


        while (player2 == "Scissor"):
            if (player1 == "Paper"):
                print("Scissor beats Paper")
                marks2 = marks2 + 1
            elif (player1 == "Rock"):
                print("Rock beats Scissor")
                marks1 = marks1 + 1
            break

        while (player2 == "Paper"):
            if (player1 == "Scissor"):
                print("Scissor beats Paper")
                marks1 = marks1 + 1
            elif (player1 == "Rock"):
                print("Rock beats Paper")
                marks1 = marks1 + 1
            break
```

```python
            break

        while (player2 == "Rock"):
            if (player1 == "Paper"):
                print("Rock beats Paper")
                marks2 = marks2 + 1
            elif (player1 == "Scissor"):
                print("Rock beats Scissor")
                marks2 = marks2 + 1
            break

    decision= input("Do you want to play the game:")



Sub.recordTable.getUserResults(str(Username),str(marks1),str(marks2),str(Tied))
print("computer points:", marks1)
print("user ponits:", marks2)
print("Ties:",Tied)
print("End of game")
```

Output screenshots of the game:

```
Python 3.9.0 Shell

File  Edit  Shell  Debug  Options  Window  Help

Python 3.9.0 (tags/v3.9.0:9cf6752, Oct  5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2\CW DOC334.py
Please enter your name:Nathan
Welcome to MSI games Nathan
(--------------------------------------)
(------------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(--------------------------------------)
Enter your choice here:Scissor
A: Rock
Rock beats Scissor
Do you want to play the game:yes
(--------------------------------------)
(------------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(--------------------------------------)
Enter your choice here:Scissor
A: Scissor
Game tied. Please try again with another choice
Do you want to play the game:yes
(--------------------------------------)
(------------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(--------------------------------------)
Enter your choice here:Rock
A: Rock
Game tied. Please try again with another choice
Do you want to play the game:no
computer points: 1
user ponits: 0
Ties: 2
End of game
>>>
```

```
Python 3.9.0 Shell                                                    _ □ X

File  Edit  Shell  Debug  Options  Window  Help

Python 3.9.0 (tags/v3.9.0:9cf6752, Oct  5 2020, 15:34:40) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2\CW DOC334.py
Please enter your name:sandushke
Welcome to MSI games sandushke
(-------------------------------------)
(------------Menue--------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game----------------------)
(-------------------------------------)
Enter your choice here:Rock
A: Paper
Rock beats Paper
Do you want to play the game:yes
(-------------------------------------)
(------------Menue--------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game----------------------)
(-------------------------------------)
Enter your choice here:Paper
A: Paper
Game tied. Please try again with another choice
Do you want to play the game:yes
(-------------------------------------)
(------------Menue--------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game----------------------)
(-------------------------------------)
Enter your choice here:Scissor
A: Paper
Scissor beats Paper
Do you want to play the game:no
computer points: 0
user ponits: 2
Ties: 1
End of game
>>>
```
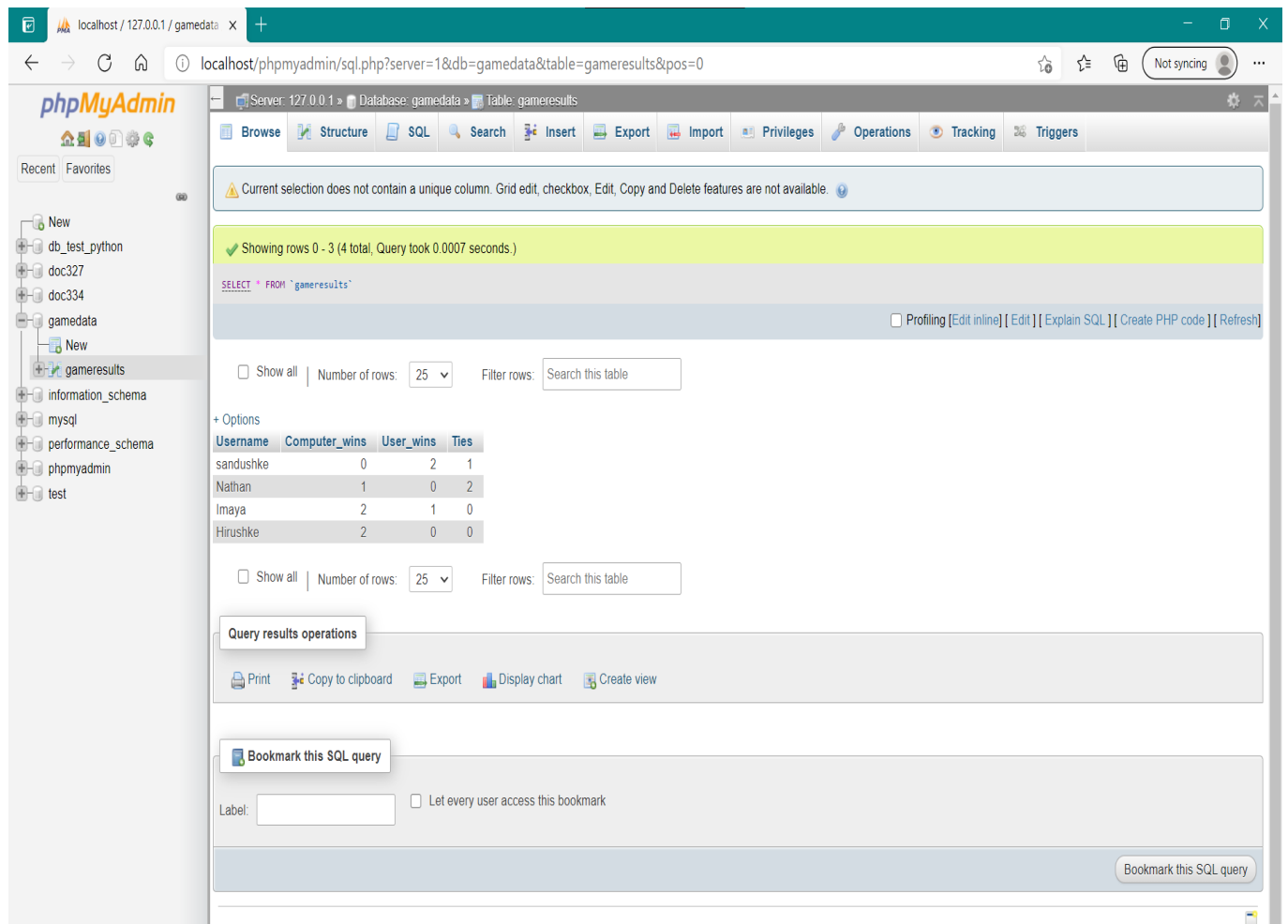
```
Python 3.9.0 Shell

File  Edit  Shell  Debug  Options  Window  Help

Please enter your name:Shiran
Welcome to MSI games Shiran
(----------------------------------------)
(------------Menue----------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game------------------------)
(----------------------------------------)
Enter your choice here:Paper
A: Scissor
Scissor beats Paper
Do you want to play the game:yes
(----------------------------------------)
(------------Menue----------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game------------------------)
(----------------------------------------)
Enter your choice here:Rock
A: Rock
Game tied. Please try again with another choice
Do you want to play the game:yes
(----------------------------------------)
(------------Menue----------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game------------------------)
(----------------------------------------)
Enter your choice here:Scissor
A: Paper
Scissor beats Paper
Do you want to play the game:no
+-----------+--------------+-----------+------+
|  Username | Computer_wins | User_wins | Ties |
+-----------+--------------+-----------+------+
| sandushke |      0       |     2     |  1   |
|   Nathan  |      1       |     0     |  2   |
|   Imaya   |      2       |     1     |  0   |
|  Hirushke |      2       |     0     |  0   |
| Chryshall |      2       |     1     |  1   |
|  Shaveen  |      0       |     1     |  1   |
| kumuditha |      1       |     2     |  0   |
+-----------+--------------+-----------+------+
computer points: 1
user ponits: 1
Ties: 1
End of game
```

Result of the game in the databse server:

Output of the game in the console (cmd):

```
Select Command Prompt

Microsoft Windows [Version 10.0.19042.928]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Sandushke>d:

D:\>cd IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2

D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2>dir
 Volume in drive D is New Volume
 Volume Serial Number is 30C8-9FEB

 Directory of D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2

04/20/2021  09:13 PM    <DIR>          .
04/20/2021  09:13 PM    <DIR>          ..
04/19/2021  10:38 PM               351 CW_DOC_334.py
04/20/2021  08:32 PM           571,236 DOC334 CW report.docx
04/19/2021  09:11 AM    <DIR>          Sub
04/08/2021  09:28 PM    <DIR>          __pycache__
               2 File(s)        571,587 bytes
               4 Dir(s)  335,409,569,792 bytes free

D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2>CW_DOC_334
Please enter your name:Chryshall
Welcome to MSI games Chryshall
(------------------------------------)
(-----------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(------------------------------------)
Enter your choice here:Rock
A: Scissor
Rock beats Scissor
Do you want to play the game:yes
(------------------------------------)
(-----------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(------------------------------------)
Enter your choice here:Paper
A: Scissor
Scissor beats Paper
```

```
Do you want to play the game:yes
(------------------------------------)
(-----------Menue--------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game----------------------)
(------------------------------------)
Enter your choice here:Scissor
A: Scissor
Game tied. Please try again with another choice
Do you want to play the game:yes
(------------------------------------)
(-----------Menue--------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game----------------------)
(------------------------------------)
Enter your choice here:Paper
A: Scissor
Scissor beats Paper
Do you want to play the game:no
computer points: 2
user ponits: 1
Ties: 1
End of game

D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2>
```

```
D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2>CW_DOC_334
Please enter your name:Shaveen
Welcome to MSI games Shaveen
(------------------------------------)
(------------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(------------------------------------)
Enter your choice here:Paper
A: Paper
Game tied. Please try again with another choice
Do you want to play the game:yes
(------------------------------------)
(------------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(------------------------------------)
Enter your choice here:ROck
A: Scissor
Do you want to play the game:yes
(------------------------------------)
(------------Menue---------------------)
(----Scissor beats Paper,Scissor wins---)
(----Paper beats Rock,Rock wins---------)
(----Rock beats Scissor,Rock wins-------)
(----End of game-----------------------)
(------------------------------------)
Enter your choice here:Scissor
A: Paper
Scissor beats Paper
Do you want to play the game:no
computer points: 0
user ponits: 1
Ties: 1
End of game

D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2>
```
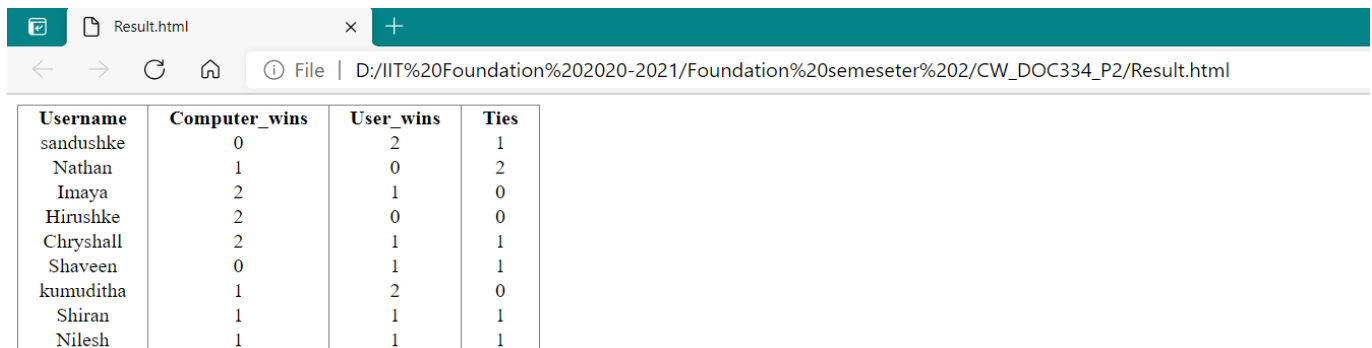
Test cases of the game:

Username	PC name	Expected Result	Achieved Result	Pass/Fail
Rock	Paper	Rock beats Paper	Rock beats Paper	**Pass**
Paper	Scissor	Scissor beats Paper	Scissor beats Paper	**Pass**
Scissor	Rock	Rock beats Scissor	Rock beats Scissor	**Pass**
Rock	Rock	Game tied. Please enter another choice	Game tied. Please enter another choice	**Pass**
Invalid input	Invalid input	End of the game	End of the game	**Pass**

Result of the game in a HTML file:

Username	Computer_wins	User_wins	Ties
sandushke	0	2	1
Nathan	1	0	2
Imaya	2	1	0
Hirushke	2	0	0
Chryshall	2	1	1
Shaveen	0	1	1
kumuditha	1	2	0
Shiran	1	1	1
Nilesh	1	1	1

References

prettytable · PyPI. 2021. [online] Available at:
    <https://pypi.org/project/prettytable/https://pypi.org/project/prettytable/>
    [Accessed 21 April 2021].