



**INFORMATICS
INSTITUTE OF
TECHNOLOGY**

Informatics Institute of Technology

Foundation Program in Higher Education

Module: DOC334 Introduction to Programming in python- P2

Module Leader: Dr. Damitha Karunarathna

Tutorial Leader: Mr. Nishan Saliya

Type of Assignment: Individual coursework Report

Submission Date: 23/04/2021

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 I 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.

Table of Contents

Assignment to be done:	4
Tasks to Complete:	4
Penalties of the game:.....	4
External Packages used:	4
Code of the main python file:	5
Code of the menu of the game:.....	5
Code for the database connection and pretty table:	6
Code of the main process of the game:.....	7
Output screenshots of the game:.....	9
Result of the game in the databse server:	12
Output of the game in the console (cmd):	14
Test cases of the game:	17
Result of the game in a HTML file:	18
References	18

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:

CW_DOC_334.py - D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2\CW_DOC_334.py (3.9.0)

File Edit Format Run Options Window Help

```
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:

mainMenue.py - D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2\Sub\mainMenue.py (3.9.0)

File Edit Format Run Options Window Help

```
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):
    "creating 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:

checkPossibilities.py - D:\IIT Foundation 2020-2021\Foundation semeseter 2\CW_DOC334_P2\Sub\checkPossibilities.py (3.9.0)

File Edit Format Run Options Window Help

```
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
```

```

    """
    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

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

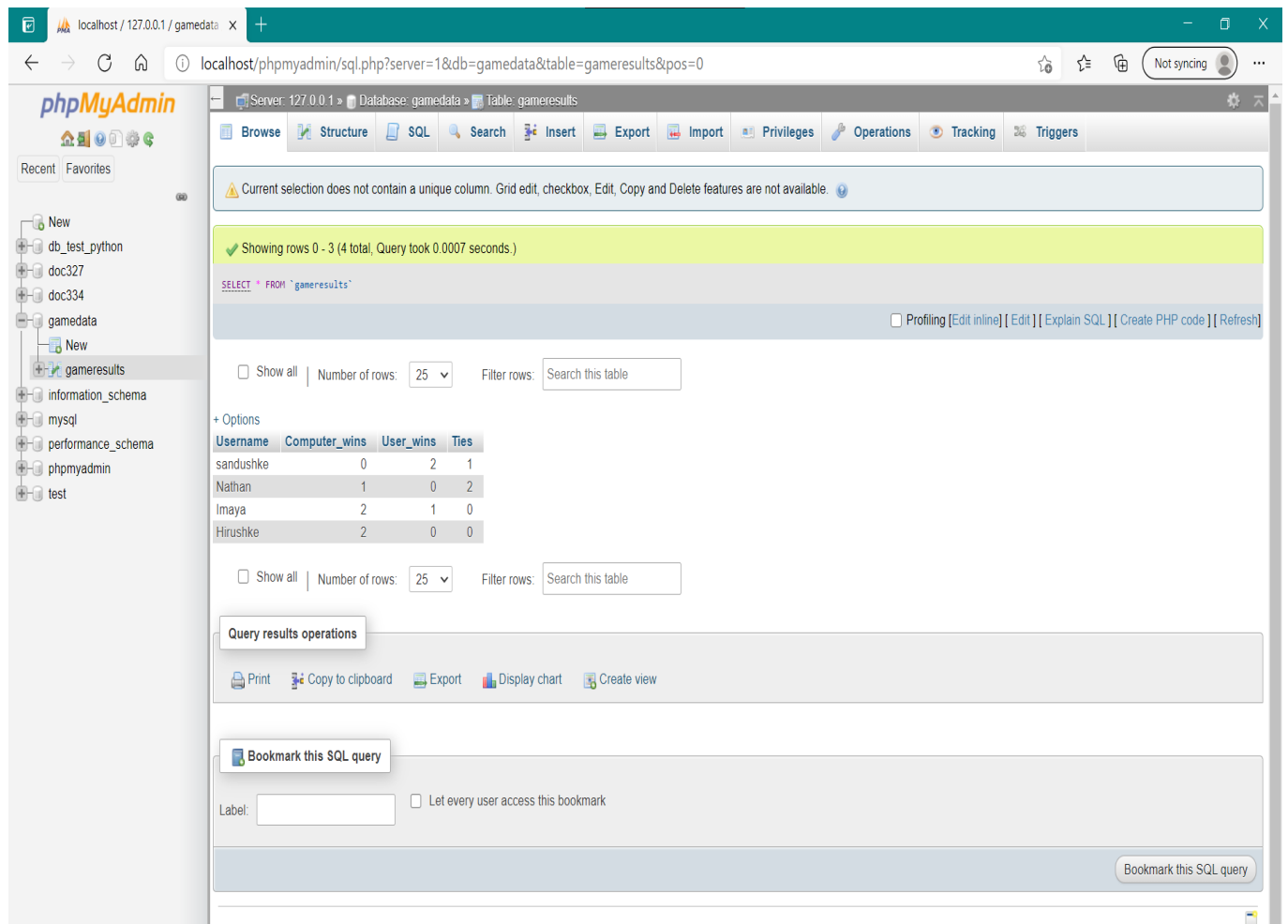
>>>

```

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 database server:



The screenshot shows the phpMyAdmin web interface. The left sidebar displays a database structure with 'gamedata' selected, containing a 'gamerresults' table. The main panel shows the 'gamerresults' table with 4 rows. A message at the top states: 'Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.' The SQL query 'SELECT * FROM `gamerresults`' is shown. Below the query, there are options to 'Show all', 'Number of rows' (set to 25), and 'Filter rows' (Search this table). The table data is as follows:

Username	Computer_wins	User_wins	Ties
sandushke	0	2	1
Nathan	1	0	2
Imaya	2	1	0
Hirushke	2	0	0

Below the table, there are 'Query results operations' (Print, Copy to clipboard, Export, Display chart, Create view) and a 'Bookmark this SQL query' section with a label input field and a checkbox 'Let every user access this bookmark'. A 'Bookmark this SQL query' button is at the bottom right.

localhost / 127.0.0.1 / gamedata: x

localhost/phpmyadmin/sql.php?server=1&db=gamedata&table=gameresults&pos=0

Not syncing

phpMyAdmin

Recent Favorites

- New
- db_test_python
- doc327
- doc334
- gamedata
 - New
 - gameresults
- information_schema
- mysql
- performance_schema
- phpmyadmin
- test

Server: 127.0.0.1 • Database: gamedata • Table: gameresults

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

✓ Showing rows 0 - 7 (8 total, Query took 0.0019 seconds.)

```
SELECT * FROM 'gameresults'
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Query results operations

Print Copy to clipboard Export Display chart Create view

Bookmark this SQL query

Label: ☐ Let every user access this bookmark

Console

Output of the game in the console (cmd):

```
C:\> 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

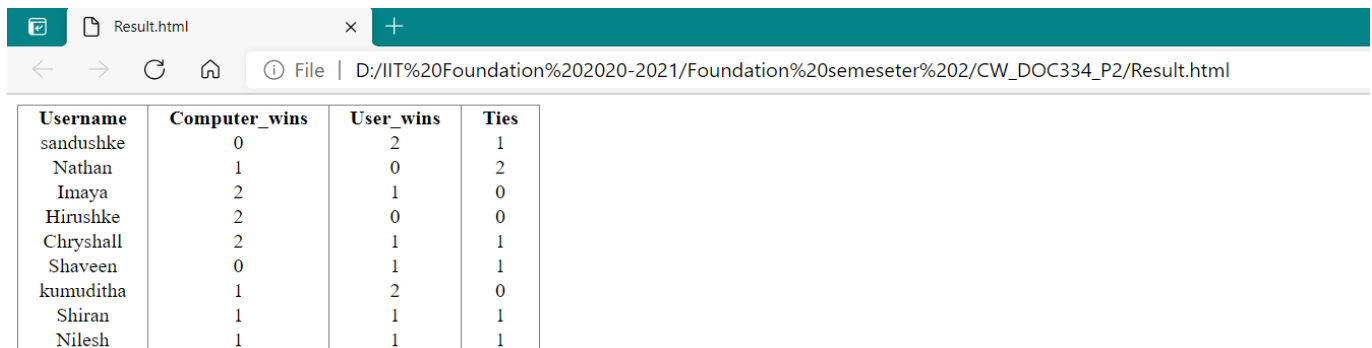
End of game

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:



The image shows a web browser window with a single tab titled 'Result.html'. The address bar displays the file path: 'D:/IIT%20Foundation%202020-2021/Foundation%20semeseter%20/CW_DOC334_P2/Result.html'. Below the browser window, a table is displayed with the following data:

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].