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| Assignment #  Winter-2025 |
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| January 22  Course Title: Programming Principles  Course Code: PROG10004  Authored by:  Student Name: Muhammad Mukry Student Number: 991798855 |

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# Assignment Problems Week #3

MyGame\_version2.py

import random

class MyGame\_version2():

    print("Welcome to my game")

    Player1 = input("Enter the name for Player 1: ")

    Player2 = input("Enter the name for Player 2: ")

    Player3 = input("Enter the name for Player 3: ")

    input(f'Player1 ({Player1}): Please press enter to roll your dice')

    Player1\_dicevalue1 = random.randint(1, 6)

    print(f'Player1 value: {Player1\_dicevalue1}')

    input(f'Player2 ({Player2}): Please press enter to roll your dice')

    Player2\_dicevalue1 = random.randint(1, 6)

    print(f'Player2 value: {Player2\_dicevalue1}')

    input(f'Player3 ({Player3}): Please press enter to roll your dice')

    Player3\_dicevalue1 = random.randint(1, 6)

    print(f'Player3 value: {Player3\_dicevalue1}')

    input(f'Player1 ({Player1}): Please press enter to roll your dice')

    Player1\_dicevalue2 = random.randint(1, 6)

    print(f'Player1 value: {Player1\_dicevalue2}')

    input(f'Player2 ({Player2}): Please press enter to roll your dice')

    Player2\_dicevalue2 = random.randint(1, 6)

    print(f'Player2 value: {Player2\_dicevalue2}')

    input(f'Player3 ({Player3}): Please press enter to roll your dice')

    Player3\_dicevalue2 = random.randint(1, 6)

    print(f'Player3 value: {Player3\_dicevalue2}')

    Player1\_total\_dicevalue = Player1\_dicevalue1 + Player1\_dicevalue2

    Player2\_total\_dicevalue = Player2\_dicevalue1 + Player2\_dicevalue2

    Player3\_total\_dicevalue = Player3\_dicevalue1 + Player3\_dicevalue2

    if Player1\_total\_dicevalue > Player2\_total\_dicevalue and Player1\_total\_dicevalue > Player3\_total\_dicevalue:

        print(f'Player1 ({Player1}) with the total value of {Player1\_total\_dicevalue}: wins the game')

    elif Player2\_total\_dicevalue > Player1\_total\_dicevalue and Player2\_total\_dicevalue > Player3\_total\_dicevalue:

        print(f'Player2 ({Player2})  with the total value of {Player2\_total\_dicevalue}: wins the game')

    elif Player3\_total\_dicevalue > Player1\_total\_dicevalue and Player3\_total\_dicevalue > Player2\_total\_dicevalue:

        print(f'Player3 ({Player3})  with the total value of {Player3\_total\_dicevalue}: wins the game')

    elif (Player1\_total\_dicevalue == Player2\_total\_dicevalue) and (Player2\_total\_dicevalue > Player3\_total\_dicevalue):

        print(f'Tie between Player 1 ({Player1}) and Player 2 ({Player2}) with the total value of {Player1\_total\_dicevalue}: ')

    elif (Player1\_total\_dicevalue == Player3\_total\_dicevalue) and (Player3\_total\_dicevalue > Player2\_total\_dicevalue):

        print(f'Tie between Player 1 ({Player1}) and Player 3 ({Player3}) with the total value of {Player3\_total\_dicevalue}: ')

    elif (Player2\_total\_dicevalue == Player3\_total\_dicevalue) and (Player2\_total\_dicevalue > Player1\_total\_dicevalue):

        print(f'Tie between Player 2 ({Player2}) and Player 3 ({Player3}) with the total value of {Player3\_total\_dicevalue}: ')

    elif (Player1\_total\_dicevalue == Player2\_total\_dicevalue) and (Player2\_total\_dicevalue == Player3\_total\_dicevalue):

        print(f'Tie between Player 1 ({Player1}), Player 2 ({Player2}) and Player 3 ({Player3}) with the total value of {Player3\_total\_dicevalue}: ')

MyGame\_version3.py

import random

class MyGame\_version3():

    print("Welcome to my game")

    Player1 = input("Enter the name for Player 1: ")

    Player2 = input("Enter the name for Player 2: ")

    Player3 = input("Enter the name for Player 3: ")

    input(f'Player1 ({Player1}): Please press enter to roll your dice')

    Player1\_dicevalue1 = random.randint(1, 6)

    print(f'Player1 value: {Player1\_dicevalue1}')

    input(f'Player2 ({Player2}): Please press enter to roll your dice')

    Player2\_dicevalue1 = random.randint(1, 6)

    print(f'Player2 value: {Player2\_dicevalue1}')

    input(f'Player3 ({Player3}): Please press enter to roll your dice')

    Player3\_dicevalue1 = random.randint(1, 6)

    print(f'Player3 value: {Player3\_dicevalue1}')

    input(f'Player1 ({Player1}): Please press enter to roll your dice')

    Player1\_dicevalue2 = random.randint(1, 6)

    print(f'Player1 value: {Player1\_dicevalue2}')

    input(f'Player2 ({Player2}): Please press enter to roll your dice')

    Player2\_dicevalue2 = random.randint(1, 6)

    print(f'Player2 value: {Player2\_dicevalue2}')

    input(f'Player3 ({Player3}): Please press enter to roll your dice')

    Player3\_dicevalue2 = random.randint(1, 6)

    print(f'Player3 value: {Player3\_dicevalue2}')

    Player1\_total\_dicevalue = Player1\_dicevalue1 + Player1\_dicevalue2

    Player2\_total\_dicevalue = Player2\_dicevalue1 + Player2\_dicevalue2

    Player3\_total\_dicevalue = Player3\_dicevalue1 + Player3\_dicevalue2

    average1 = (Player1\_total\_dicevalue + Player2\_total\_dicevalue + Player3\_total\_dicevalue)/3

    average2 = (Player1\_total\_dicevalue + Player2\_total\_dicevalue + Player3\_total\_dicevalue)//3

    print(f'average1 = (Player1\_total\_dicevalue + Player2\_total\_dicevalue + Player3\_total\_dicevalue)/3 is :{average1} ')

    print(f'average2 = (Player1\_total\_dicevalue + Player2\_total\_dicevalue + Player3\_total\_dicevalue)//3 is :{average2} ')

    if Player1\_total\_dicevalue > Player2\_total\_dicevalue and Player1\_total\_dicevalue > Player3\_total\_dicevalue:

        print(f'Player1 ({Player1}) with the total value of {Player1\_total\_dicevalue}: wins the game')

    elif Player2\_total\_dicevalue > Player1\_total\_dicevalue and Player2\_total\_dicevalue > Player3\_total\_dicevalue:

        print(f'Player2 ({Player2})  with the total value of {Player2\_total\_dicevalue}: wins the game')

    elif Player3\_total\_dicevalue > Player1\_total\_dicevalue and Player3\_total\_dicevalue > Player2\_total\_dicevalue:

        print(f'Player3 ({Player3})  with the total value of {Player3\_total\_dicevalue}: wins the game')

    elif (Player1\_total\_dicevalue == Player2\_total\_dicevalue) and (Player2\_total\_dicevalue > Player3\_total\_dicevalue):

        print(f'Tie between Player 1 ({Player1}) and Player 2 ({Player2}) with the total value of {Player1\_total\_dicevalue}: ')

    elif (Player1\_total\_dicevalue == Player3\_total\_dicevalue) and (Player3\_total\_dicevalue > Player2\_total\_dicevalue):

        print(f'Tie between Player 1 ({Player1}) and Player 3 ({Player3}) with the total value of {Player3\_total\_dicevalue}: ')

    elif (Player2\_total\_dicevalue == Player3\_total\_dicevalue) and (Player2\_total\_dicevalue > Player1\_total\_dicevalue):

        print(f'Tie between Player 2 ({Player2}) and Player 3 ({Player3}) with the total value of {Player3\_total\_dicevalue}: ')

    elif (Player1\_total\_dicevalue == Player2\_total\_dicevalue) and (Player2\_total\_dicevalue == Player3\_total\_dicevalue):

        print(f'Tie between Player 1 ({Player1}), Player 2 ({Player2}) and Player 3 ({Player3}) with the total value of {Player3\_total\_dicevalue}: ')

Greet.py

*# Class to take user name and greet the user with the good morning message*

class Greet():

*# Taking input from the user*

    name = input("What is your name? ")

*# Printing Greeting message for the user*

    print(f'Good Morning {name} ')

Greet\_version2.py

*# Class to take user name and greet the user with the good morning message*

class Greet():

*# Taking input from the user*

    name = input("What is your name? ")

*# Printing Greeting message for the user*

    for i in range(3):

        print(f'Good Morning {name} ')

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| Question #: Assignment1\_Exercises   1. Use of Random and Math Module:   Write a program in python to simulate a game called MyGame.py. In this game you will use three variables called player1, player2 and player3. Each player rolls a dice, which means that the variables are initialized with random integers ranging from 1 to 6. Compare the values of player1, player2 and player3 to find the highest value. Print that highest value. Use comments and import statements wherever applicable. Give screenshots of the code, output and git repository containing this program.   1. Use of Arithmetic Operators and Git repositories   Implement the following as version2 of problem 1 given in this document. Suppose all players in problem1 roll the dice two times. The score of each player is the sum of the previous and current value on the dice. The program should print the highest score. Use comments and import statements wherever applicable. Provide screenshots of the code, output and git repository   1. Program logic and Arithmetic Operators   Implement the following as version 3 and add the code to computer average score of all three players in problem 2. The average will be calculated and printed twice. Once using ‘/’ operator and then using ‘//’ operator. For example:  average1= (player1+ player2+player3)/3 # average using ‘/’ operator  average2= (player1+player2+player3)//3 # average using ‘//’ operator  Explain your observations. Remove the parenthesis from the equations and print average1 and average2 again. Give screenshots of the code, outputs and the git repository   1. User inputs and concatenation   Write a program called greet.py that asks the user to type their name and store it in a variable called name. The program should print a greeting for the user. For example, if the user’s name is Joe, the program should print “Good Morning Joe”. Use comments wherever applicable. Explain your logic. Create a version2 of this problem in your git repository. In version2 you should print the message three times. Give screenshots of the code, outputs and the git repository Flowchart (if applicable): Draw a flowchart of your problem and give a title to your figure. For example, your problem is to calculate average sales, then figure title would be “Fig1. Flowchart of average sales”  A diagram of a game  Description automatically generated  A diagram of a work flow  Description automatically generated  Fig #. Flowchart of the MyGame.py Python Code: Copy paste your code from your IDE (or notepad)  MyGame.py  import random *#importing random from the general library*  class MyGame():    *#Printing welcome and taking input for each player's name*      print("Welcome to my game")      Player1 = input("Enter the name for Player 1: ")      Player2 = input("Enter the name for Player 2: ")      Player3 = input("Enter the name for Player 3: ")  *#Taking input for first player and printing the first player's value*      input(f'Player1 ({Player1}): Please press enter to roll your dice')      Player1\_dicevalue = random.randint(1, 6)      print(f'Player1 value: {Player1\_dicevalue}')  *#Taking input for second player and printing the second player's value*      input(f'Player2 ({Player2}): Please press enter to roll your dice')      Player2\_dicevalue = random.randint(1, 6)      print(f'Player2 value: {Player2\_dicevalue}')  *#Taking input for third player and printing the third player's value*      input(f'Player3 ({Player3}): Please press enter to roll your dice')      Player3\_dicevalue = random.randint(1, 6)      print(f'Player3 value: {Player3\_dicevalue}')  *#Comparing Player 1's dice value with Player 2's and Player 3's*      if Player1\_dicevalue > Player2\_dicevalue and Player1\_dicevalue > Player3\_dicevalue:          print(f'Player1 ({Player1}) with the value of {Player1\_dicevalue}: wins the game')    *#Comparing Player 2's dice value with Player 1's and Player 3's*      elif Player2\_dicevalue > Player1\_dicevalue and Player2\_dicevalue > Player3\_dicevalue:          print(f'Player2 ({Player2})  with the value of {Player2\_dicevalue}: wins the game')  *#Comparing Player 3's dice value with Player 2's and Player 1's*      elif Player3\_dicevalue > Player1\_dicevalue and Player3\_dicevalue > Player2\_dicevalue:          print(f'Player3 ({Player3})  with the value of {Player3\_dicevalue}: wins the game')  *#Checking if player 1's dice value equals*      elif (Player1\_dicevalue == Player2\_dicevalue) and (Player2\_dicevalue > Player3\_dicevalue):          print(f'Tie between Player 1 ({Player1}) and Player 2 ({Player2}) with the value of {Player1\_dicevalue}: ')      elif (Player1\_dicevalue == Player3\_dicevalue) and (Player3\_dicevalue > Player2\_dicevalue):          print(f'Tie between Player 1 ({Player1}) and Player 3 ({Player3}) with the value of {Player3\_dicevalue}: ')      elif (Player2\_dicevalue == Player3\_dicevalue) and (Player2\_dicevalue > Player1\_dicevalue):          print(f'Tie between Player 2 ({Player2}) and Player 3 ({Player3}) with the value of {Player3\_dicevalue}: ')      elif (Player1\_dicevalue == Player2\_dicevalue) and (Player2\_dicevalue == Player3\_dicevalue):          print(f'Tie between Player 1 ({Player1}), Player 2 ({Player2}) and Player 3 ({Player3}) with the value of {Player3\_dicevalue}: ') |
| Output: **MyGame.py**  Paste the screenshot of your output here   Repository (if applicable): State your git repository and give a screenshot of the directory contents (if applicable)    [**Semester-2-programming-assignment-1/MyGame.py at main · mhmukry/Semester-2-programming-assignment-1**](https://github.com/mhmukry/Semester-2-programming-assignment-1/blob/main/MyGame.py)  **MyGame\_version2.py**  Paste the screenshot of your output here   Repository (if applicable): State your git repository and give a screenshot of the directory contents (if applicable)    [**Semester-2-programming-assignment-1/MyGame\_version2.py at main · mhmukry/Semester-2-programming-assignment-1**](https://github.com/mhmukry/Semester-2-programming-assignment-1/blob/main/MyGame_version2.py)  **MyGame\_version3.py**  Paste the screenshot of your output here   Repository (if applicable): State your git repository and give a screenshot of the directory contents (if applicable)    [**Semester-2-programming-assignment-1/MyGame\_version3.py at main · mhmukry/Semester-2-programming-assignment-1**](https://github.com/mhmukry/Semester-2-programming-assignment-1/blob/main/MyGame_version3.py)  **Greet.py**  Paste the screenshot of your output here   Repository (if applicable): State your git repository and give a screenshot of the directory contents (if applicable)    [**Semester-2-programming-assignment-1/Greet.py at main · mhmukry/Semester-2-programming-assignment-1**](https://github.com/mhmukry/Semester-2-programming-assignment-1/blob/main/Greet.py)  **Greet\_version2.py**  Paste the screenshot of your output here   Repository (if applicable): State your git repository and give a screenshot of the directory contents (if applicable)    [**Semester-2-programming-assignment-1/Greet\_version2.py at main · mhmukry/Semester-2-programming-assignment-1**](https://github.com/mhmukry/Semester-2-programming-assignment-1/blob/main/Greet_version2.py)  Limitations, Challenges and Assumptions (wherever applicable)  Assumptions: For MyGame, MyGame\_version2, and MyGame\_version3 the entire logic of ties and wins are dependent on the rolled dice value for each player generated through random generator method between the integer values of 1 to 6.  For Greet\_version2, I used the for loop logic to print greeting messages multiple times. |
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# Summary

I have learned how to:

1. print messages
2. how to take user input
3. how to use python random generator library
4. how to check and execute various program condition logic (if/else if/else)
5. how to use loop to repeat similar task (for loop for printing greeting message multiple times)

# References

1. Downey, A. (2012). Think python. " O'Reilly Media, Inc.".