

Worksheet While Practice

1. Write a program that will ask the user how many courses they have. Then ask for the marks and determine the average (you do not need to save the marks as individual variables)

```
#will ask the user how many courses they have and give the median of the courses
#Omaima Gohir
#5/52023
import math

"""
This program will ask the user for their course marks and give them the average

Preconditions:
variables cannot be a string

Returns:
the results of the users average mark
"""

course_one = input("Enter course 1 mark:")
#if course_one is not greater than 0, print invalid entry
while not course_one.isdigit() or float(course_one) < 0: #.isdigit checks if its a number
    print("Invalid Entry")
    course_one = input("Enter course 1 mark:")
print(course_one)

course_two = input("Enter course 2 mark:")
#if course_two is not greater than 0, print invalid entry
while not course_two.isdigit() or float(course_two) < 0: #.isdigit checks if its a number
    print("Invalid Entry")
    course_two = input("Enter course 2 mark:")
print(course_two)

course_three = input("Enter course 3 mark:")
#if course_three is not greater than 0, print invalid entry
while not course_three.isdigit() or float(course_three) < 0: #.isdigit checks if its a number
    print("Invalid Entry")
    course_three = input("Enter course 3 mark:")
print(course_three)

course_four = input("Enter course 4 mark:")
#if course_four is not greater than 0, print invalid entry
while not course_four.isdigit() or float(course_four) < 0: #.isdigit checks if its a number
    print("Invalid Entry")
    course_four = input("Enter course 4 mark:")
print(course_four)

total = int(course_one) + int(course_two) + int(course_three) + int(course_four)
results = (total / 4)
```

```
print("Your mark is:", results) #printing the results
```

2. Write a program that will ask user 1 for a random number between 1 and 100. Then have user 2 guess the number.

```
#The program will ask the user for a guess on a number that is chosen
```

```
#Omaima Gohir
```

```
#5/4/2023
```

```
"""
```

```
This program takes the users number and makes it so that user 2 has to guess the number
```

```
Preconditions:
```

```
guess and number = 0 < positive integer < 100
```

```
Returns:
```

```
if the guess is too low or too high
```

```
"""
```

```
number = int(input("Hi user 1, Please enter your number from 1-100: "))
```

```
guess = int(input("Hi user 2, Please enter your guess from 1-100: "))
```

```
#if the guess is not equal to the number or the guess is not smaller than 100 or not greater than 0, its invalid.
```

```
while not guess == number or guess < 100 or guess > 0:
```

```
    print("Wrong number! Try again...")
```

```
    guess = int(input("Please re-enter a different guess here: "))
```

3. **Modify the above program to ask user 1 for a random number between 1 and 100. Then have user 2 guess the number. Tell the user whether each guess is too high or too low between guesses**

```
#The program will ask the user for a guess on a number that is chosen
```

```
#Omaima Gohir
```

```
#5/4/2023
```

```
"""
```

This program takes the users number and makes it so that user 2 has to guess the number

Preconditions:

guess and number = $0 < \text{positive integer} < 100$

Returns:

if the guess is too low or too high or if the guess is correct. Each time the number is wrong, the code works accordingly

```
"""
```

```
number = int(input("Hi user 1, Please enter your number from 1-100: "))
```

```
guess = int(input("Hi user 2, Please enter your guess from 1-100: "))
```

```
#when guess is greater than 100, its too high
```

```
while guess > 100:
```

```
    print("your number is way too high, it has to be lower than 100...")
```

```
    guess = int(input("Please re-enter a different guess here: "))
```

```
#when guess is lower than 0, its too low
```

```
while guess < 0:
```

```
    print("your number is way too low, it has to be higher than 0...")
```

```
    guess = int(input("Please re-enter a different guess here: "))
```

```
#when the guess is not equal to the number, wrong entry
```

```
while not guess == number:
```

```
    print("Wrong number,try again!")
```

```
    guess = int(input("Please re-enter a different guess here: "))
```

4. **Modify the above program to ask user 1 for a random number between 1 and 100. Then have user 2 guess the number. Tell the user whether each guess is too high or too low between guesses. Also determine whether the number is between 1 and 100 between each guess**

```
#The program will ask the user for a guess on a number that is chosen
#Omaima Gohir
#5/4/2023

"""
This program takes the users number and makes it so that user 2 has to guess the number

Preconditions:
guess and number = 0 < positive integer < 100

Returns:
if the guess is too low or too high or if the guess is correct. Each time the number is wrong, the code
works accordingly
"""
number = int(input("Hi user 1, Please enter your number from 1-100: "))

#when number is greater than 100 or smaller than 0, its wrong
while number > 100 or number < 0:
    print("Your number should be between 1-100")
    number = int(input("Hi user 1, Please enter your number from 1-100: "))

guess = int(input("Hi user 2, Please enter your guess from 1-100: "))

#when guess is greater than 100, its too high
while guess > 100:
    print("your number is way too high, try a number lower than 100...")
    guess = int(input("Please re-enter a different guess here: "))

#when guess is smaller than 0, its too low
while guess < 0:
    print("your number is way too low, try a number higher than 0...")
    guess = int(input("Please re-enter a different guess here: "))

#when guess is not the same as the number, it is invalid
while not guess == number:
    print("Wrong number,try again!")
    guess = int(input("Please re-enter a different guess here: "))

#when guess is the same as the number, its right and the code is finished
while guess == number:
    print("Correct!")
```

Choose one of the above programs and list out the test cases you should use. Explain the reasoning for each test case on the right.

Test Cases	Explanation
User 1 input = 101	If the user input is = 100, the code will print "Hi user 1, Please enter your number from 1-100: ". This is because the while loop sets the code so that if user 1 input is smaller than 0 or greater than 100, the input would be invalid and make them input the number again
User 2 input = 101	If the user input is = 100, the code will print "your number is way too high, try a number lower than 100.." This is because the while loop sets the code so that if user 2 input is greater than 100, the input would be invalid and make them input the number again.
User 2 input = -3	If the user input is = -3, the code will print "your number is way too low, try a number higher than 0." This is because the while loop sets the code so that if user 2 input is a number smaller than 0, the input would be invalid and make them input the number again.
User 1 = 5 (input) User 2 = 19 (guess)	If the user 2 inputs a guess that is not higher than 100 and not lower than 0, the code will then print "wrong number..try again!" This is because it only makes sense when the number is already out of the loop.
User 1 = 4 User 2 = 4	If the user 2 guess is the same as the input number, the code will print "Correct!"