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Software Development

ASSESSMENT2

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1. a) Which variable type would be most suitable to store each of the following values?

G	Single
2112	Long-priods.
Sarah	Type
3.21	SINGLE- PRECISION
H2	Double-Precision
-34.62	Single .

What errors are present in the following code for welcoming a user to a program? Line numbers are included for easy reference

```
1  print(Welcome to my program")
2
3  print("Please enter your name: ")
4  myName = int(input())
5
6  print("Welcome, " myName)
8  print("I shall say hello to you 10 times: ")
9
10    for counter in range(0, 11)
11    print("Hello")
```

In first line are missing “ and :

4 Int(input - is wrong

5. In this line of code is missing , and “ myName ”

6

This is the correct option:

```
print("Welcome to my program: ")

print("Please enter your name: ")
myName = input()
print("Welcome, ", "myName")
print("I shall say hello to you 10 times: ")
for i in range(0,11):
    print(i)
print("Hello")
```

C:\Users\Georgiana\PycharmProjects\pythonProject\venv\Scripts\python.exe
C:/Users/Georgiana/AppData/Roaming/JetBrains/PyCharmCE2021.3/scratches/test.py

Welcome to my program:

Please enter your name:

Hello, Georgiana

Welcome, myName

I shall say hello to you 10 times:

0

1

2

3

4

5

6

7

8

9

10

Hello

Process finished with exit code 0

1. C) How many iterations do the following loops have?

```
for i in range(1, 9, 1):
    print("Hello")
```

10

```
for i in range(0, 8, 2):
    print("Hello")
```

8

1. d) What is the value of the integer variable *total* after the following code is executed?

```
total = 1

for x in range(0, 8, 1):
    total = total + x
     if x == 5:
total = 0
```

1 e) Logic

i) Given the following values x=5, y=3, z=12 is the statement below true or false?

```
x==y
```

true

ii) Given the following values x=5, y=3, z=12 is the statement below true or false?

```
x < z/y
```

False

2. Calculating the volume of a square-based pyramid

The volume of a square-based pyramid is calculated using the formula shown below:

$$V = a^2 \frac{h}{3}$$

Task:

Write a program to calculate the volume of the pyramid using the above formula.

Allow the user to enter the measurements for *a* and *h.* Both *a* and *h* should be positive numbers.

Print the volume on the screen to 2 decimal places

```
print("Enter the base: ")
base = float(input())

print("Enter the slant height: ")
sh = float(input())

total = (2 * base * sh) + (base ** 2)

print("The surface area is: ", total)
```

C:\Users\Georgiana\PycharmProjects\pythonProject\venv\Scripts\python.exe
C:/Users/Georgiana/AppData/Roaming/JetBrains/PyCharmCE2021.3/scratches/scratch_2.py

Enter the base:

2

Enter the slant height:

3

The surface area is: 16.0

Process finished with exit code 0

3. Using lists (Python) or arrays (C etc)

Task:
Write a program designed to calculate the average age of some people in a room. There are 6 people in the room. Start by declaring an empty list eg

```
ages = []
```

1. Prompt the user to enter the six ages (these should be within normal human lifespan!).

2. After the ages have been entered, print each of them on the screen.

3. Calculate the average age of the people in the room (to 2 decimal places) and print it on the screen.

Use loops where appropriate

Sample output:

```
Enter next age: 35
Enter next age: 42
Enter next age: 234
Sorry out of range. Try again: 23
Enter next age: 56
Enter next age: 18
Enter next age: 52
Here are the ages you entered:
35.0  42.0  23.0  56.0  18.0  52.0
The average age is:  37.67
```

```
temps = []

for counter in range(0,6):
    print("Enter your age: ")
    temps.append(float(input()))

print("Sorry out of range. Try again ")
choice = int(input())

if 13<choice  or choice >100:
        print("Sorry out of the range!")
else:
        print("Try again!:")

print("The average age is:", choice)
```

```
C:\Users\Georgiana\PycharmProjects\pythonProject\venv\Scripts\python.exe
C:/Users/Georgiana/AppData/Roaming/JetBrains/PyCharmCE2021.3/scratches/scratch.py
Enter your age:
45
Enter your age:
54
Enter your age:
34
Enter your age:
23
Enter your age:
54
Enter your age:
34
Sorry out of range. Try again
5
Try again!:
The average age is: 5

Process finished with exit code 0
```

4. **Using Functions**

Task:
Write a function called *entername() to* allow the user to enter the name of a conference delegate.

The function should be called 3 times, once for each of 3 conference delegates, and the (local scope) name entered returned to the main program.

Print the names entered from the main program, then calculate the total bill for attending

the conference (£65 per person) and print it on the screen Sample output:

```
Enter name of next delegate:
Gaynor Thomas
Enter name of next delegate:
Beverley Holland
Enter name of next delegate:
James Williams

The delegates who attended today were:
Gaynor Thomas  Beverley Holland  James Williams
Total due is £ 195
```

[15 marks total for Question 4]

```python
name1 = input("Enter name of next delegate: ")

name2 = input("Enter name of next delegate: ")

name3 = input("Enter name of next delegate: ")

print("The delegates who attended today were: " + name1,  name2, name3)

print("Total due is : £", input())
```

C:\Users\Georgiana\PycharmProjects\pythonProject\venv\Scripts\python.exe
"C:/Users/Georgiana/AppData/Roaming/JetBrains/PyCharmCE2021.3/scratches/TEST 22.py"
Enter name of next delegate: Georgiana Anghel
Enter name of next delegate: Andreea Rossi
Enter name of next delegate: Cristina Viga
The delegates who attended today were: Georgiana Anghel Andreea Rossi Cristina Viga
145
Total due is : £ 145

Process finished with exit code 0

Diwedd/End