Fundamentals of Computer Programming

Building a Programming Portfolio

Week 2

You should be able to complete the following programs by the end of the week. You should keep the code somewhere safe, in an organised way. GitHub is ideal. Wherever you choose, you should ensure that the work is safe and backed up.

Possible solutions will be uploaded to the main module GitHub repository every week. If you follow that repo you should be able to receive notifications.

*In the following, **bold text** indicates where a user is typing.*

1. Last week you wrote a program that printed out a cheery greeting including your name. Take a copy of it, and modify it so that the user enters their name at the keyboard, and then receives a greeting. For example:

Hello, what is your name? **Mr Apricot**
Hello, Mr Apricot. Good to meet you!

```
1   #question 1
2   name=str(input("Hello, what is your name? "))
3   print(f"Hello, {name}. Good to meet you!" )
4
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SEARCH ERROR

```
PS C:\Users\user> python -u "C:\Users\user\AppData\Local\Temp\tempCodeRunnerFile.python"
Hello, what is your name? Aryan
Hello, Aryan. Good to meet you!
PS C:\Users\user>
```

2. Write a program that prompts a user to enter a temperature in Celsius, and then displays the corresponding temperature in Fahrenheit, like so:

Enter a temperature in Celsius: **32.5**
32.5C is equivalent to 90.5F.

```
5    #question 2
6    '''Write a program that prompts a user to enter a temperature in Celsius, and then
7    displays the corresponding temperature in Fahrenheit, like so:
8    Enter a temperature in Celsius: 32.5
9    32.5C is equivalent to 90.5F.'''
10
11   temp=float(input("Enter a temperature in Celsius:"))
12   fahrenheit=(temp*9/5)+32
13   print(f"{temp}C is equivalent to {fahrenheit}F")
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SEARCH ERROR

```
PS C:\Users\user> python -u "C:\Users\user\AppData\Local\Temp\tempCodeRunnerFile.python"
Enter a temperature in Celsius:39
39.0C is equivalent to 102.2F
PS C:\Users\user>
```

3. The Head of Computing at the University of Poppleton is tasked with dividing a
group of students into lab groups. A lab group is usually 24 students, but this
is sometimes varied to create groups of similar size. Write a program that
prompts for the number of students and group size, and then displays how
many groups will be needed and how many will be left over in a smaller
group.

How many students? **113**

Required group size? **22**

There will be 5 groups with 3 students left over. For
bonus credit, see if you can fix the grammar in the output. So if there were
101 students in groups of 20 the output would be:

There will be 5 groups with 1 student left over.

```
14
15    #question 3
16    num=int(input("How many students? "))
17    grp=int(input("Required group size? "))
18    group=num//grp
19    left=num%grp
20    if left!=1:
21        print(f"There will be {group} groups with {left} students left over")
22    else:
23        print(f"There will be {group} groups with {left} student left over")
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**   PORTS   SEARCH ERROR

```
PS C:\Users\user> python -u "C:\Users\user\AppData\Local\Temp\tempCodeRunnerFile.python"
How many students? 31
Required group size? 5
There will be 6 groups with 1 student left over
PS C:\Users\user>
```

4. A kindly teacher wishes to distribute a tub of sweets between her pupils. She will
first count the sweets and then divide them according to how many pupils attend that
day. Write a program that will tell the teacher how many sweets to give to each pupil,
and how many she will have left over.

```
25    #Question 4
26
27    sweets=int(input("Number of sweets in the tub? "))
28    students=int(input("Total number of students? "))
29    sweets_per_student=sweets//students
30    left=sweets%students
31    print(f"Each student will get {sweets_per_student} sweets and there will be {left} sweets left over")
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**   PORTS   SEARCH ERROR

```
PS C:\Users\user> python -u "C:\Users\user\AppData\Local\Temp\tempCodeRunnerFile.python"
Number of sweets in the tub? 50
Total number of students? 12
Each student will get 4 sweets and there will be 2 sweets left over
PS C:\Users\user>
```