

# 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**

```
question1.py > ...
1  name = input ("Hellow, what is your name?")
2  print (f"Hello, {name}. Good to meet you!")
3

PROBLEMS  OUTPUT  TERMINAL  ...  Python

PS C:\Users\lenovo\Desktop\week2focp> & C:/Users/lenovo/Desktop/Python/Python312/python.exe c:/Users/lenovo/Desktop/week2focp/question1.py
Hellow, what is your name?Anushka
Hello, Anushka. Good to meet you!
PS C:\Users\lenovo\Desktop\week2focp>
```

Hello, Mr Apricot. Good to meet you!

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.

```

question2.py > ...
1  celsius = float(input("Enter a temperature in Celsius: "))
2
3  fahrenheit = (celsius * 9/5) + 32
4
5  print(f"{celsius}C is equivalent to {fahrenheit}F.")
6

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS ...

Enter a temperature in Celsius: 32.5  
 32.5C is equivalent to 90.5F.  
 PS C:\Users\lenovo\Desktop\week2focp>

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.

```

question3.py > ...
1  students = int(input("How many students? "))
2  group_size = int(input("Required group size? "))
3
4  num_groups = students // group_size
5  leftover = students % group_size
6  group_text = "groups" if num_groups != 1 else "group"
7  student_text = "students" if leftover != 1 else "student"
8  print(f"There will be {num_groups} {group_text} with {leftover} {student_text} left over.")
9

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR

rograms\Python\Python312\python.exe' 'c:\Users\lenovo\.vscode\extensions\ms-python.debugpy-2024.12.0-wi  
 d\libs\debugpy\adapter\..\..\debugpy\launcher' '56882' '--' 'C:\Users\lenovo\Desktop\week2focp\question  
 How many students? 113  
 Required group size? 22  
 There will be 5 groups with 3 students left over.  
 PS C:\Users\lenovo\Desktop\week2focp> ^C  
 PS C:\Users\lenovo\Desktop\week2focp>  
 PS C:\Users\lenovo\Desktop\week2focp> c:; cd 'c:\Users\lenovo\Desktop\week2focp'; & 'c:\Users\lenovo\A  
 rograms\Python\Python312\python.exe' 'c:\Users\lenovo\.vscode\extensions\ms-python.debugpy-2024.12.0-wi  
 d\libs\debugpy\adapter\..\..\debugpy\launcher' '56894' '--' 'C:\Users\lenovo\Desktop\week2focp\question  
 How many students? 101  
 Required group size? 20  
 There will be 5 groups with 1 student left over.  
 PS C:\Users\lenovo\Desktop\week2focp>

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.

```
question4.py > ...
1  sweets = int(input("How many sweets are there? "))
2  pupils = int(input("How many pupils are attending today? "))
3
4  sweets_per_pupil = sweets // pupils
5  leftover_sweets = sweets % pupils
6
7  print(f"Each pupil will receive {sweets_per_pupil} sweets.")
8  print(f"There will be {leftover_sweets} sweet(s) left over.")
9
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SEARCH ERROR

```
rograms\Python\Python312\python.exe' 'c:\Users\lenovo\.vscode\extensions\ms-p
d\libs\debugpy\adapter/../../debugpy\launcher' '56927' '--' 'C:\Users\lenovo\
How many sweets are there? 30
How many pupils are attending today? 22
Each pupil will receive 1 sweets.
There will be 8 sweet(s) left over.
```