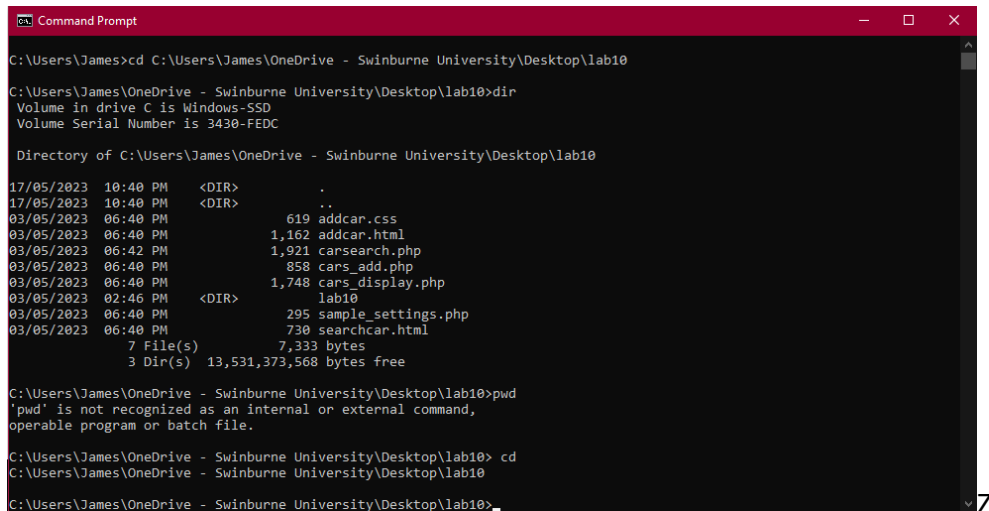


1.1P: Preparing for OOP – Answer Sheet

1. Explain the following terminal instructions:
 - a. cd: Change directory.
 - b. ls: list files (but it's a linux command for windows is dir)
 - c. pwd: Print directory (for windows its just cd without passing any arguments)



```
Command Prompt
C:\Users\James>cd C:\Users\James\OneDrive - Swinburne University\Desktop\lab10
C:\Users\James\OneDrive - Swinburne University\Desktop\lab10>dir
Volume in drive C is Windows-SSD
Volume Serial Number is 3430-FEDC

Directory of C:\Users\James\OneDrive - Swinburne University\Desktop\lab10
17/05/2023  10:40 PM    <DIR>          .
17/05/2023  10:40 PM    <DIR>          ..
03/05/2023  06:40 PM             619 addcar.css
03/05/2023  06:40 PM          1,162 addcar.html
03/05/2023  06:42 PM          1,921 carsearch.php
03/05/2023  06:40 PM             858 cars_add.php
03/05/2023  06:40 PM          1,748 cars_display.php
03/05/2023  02:46 PM    <DIR>          lab10
03/05/2023  06:40 PM          295 sample_settings.php
03/05/2023  06:40 PM          730 searchcar.html
03/05/2023  06:40 PM              7 File(s)          7,333 bytes
                  3 Dir(s)  13,531,373,568 bytes free

C:\Users\James\OneDrive - Swinburne University\Desktop\lab10>pwd
'pwd' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\James\OneDrive - Swinburne University\Desktop\lab10> cd
C:\Users\James\OneDrive - Swinburne University\Desktop\lab10>
C:\Users\James\OneDrive - Swinburne University\Desktop\lab10>
```

2. Consider the following kinds of information, and suggest the most appropriate data type to store or represent each:

Information	Suggested Data Type
A person's name	string
A person's age in years	Integer
A phone number	String or integer
A temperature in Celsius	Float
The average age of a group of people	Integer
Whether a person has eaten lunch	Boolean

3. Aside from the examples already given, come up with an example of information that could be stored as:

Data type	Suggested Information
String	A locations name
Integer	Postcode
Float	Height in cm
Boolean	Is 'A' the first letter in the alphabet

4. Fill out the following table, evaluating the value of each expression and identifying the data type the value is most likely to be:

Expression	Given	Value	Data Type
5		5	Integer
True		True	Boolean
a	a = 2.5	2.5	float
1 + 2 * 3		7	integer
a and False	a = True	True	Boolean
a or False	a = True	True	Boolean
a + b	a = 1 b = 2	3	integer
2 * a	a = 3	6	integer
a * 2 + b	a = 1.5 b = 2	5	integer
a + 2 * b	a = 1.5 b = 2	7	integer
(a + b) * c	a = 1 b = 1 c = 5	5.5	float
"Fred" + " Smith"		"Fred Smith"	string
a + " Smith"	a = "Wilma"	"Wilma Smith"	string

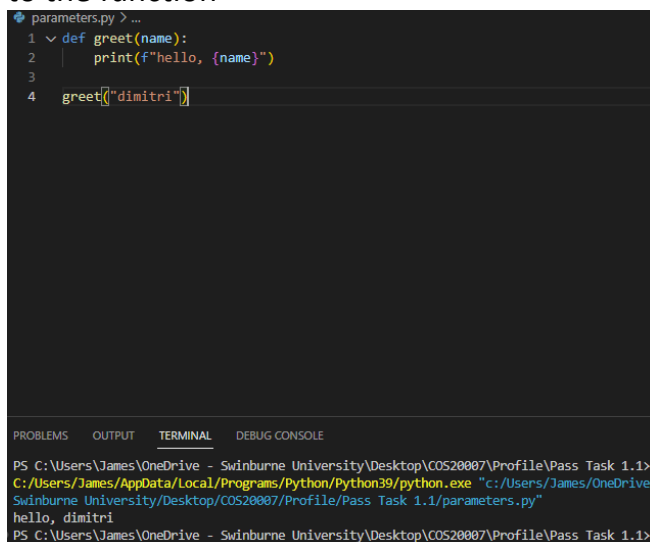
5. Explain the difference between **declaring** and **initialising** a variable.

The difference between the two is declaring is used to specify the type of data for the variable, while initialising is used to set initial value to the variable.

```
1  int x; // declaring a variable
2  int x = 10; // declare and initialising a variable
3
```

6. Explain the term **parameter**. Write some code that demonstrates a simple use of a parameter.

A parameter is variable inside a function and it becomes an argument after passing to the function



```
parameters.py > ...
1  def greet(name):
2      print(f"hello, {name}")
3
4  greet("dimitri")
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
PS C:\Users\James\OneDrive - Swinburne University\Desktop\COS20007\Profile\Pass Task 1.1>
C:\Users\James\AppData\Local\Programs\Python\Python39\python.exe "C:/Users/James/OneDrive
Swinburne University/Desktop/COS20007/Profile/Pass Task 1.1/parameters.py"
hello, dimitri
PS C:\Users\James\OneDrive - Swinburne University\Desktop\COS20007\Profile\Pass Task 1.1>
```

7. Using an example, describe the term **scope**.

Scope is where variables can be visible and accessible.

Example:

```
1  def my_function():
2      x = 10
3      print(x)
4
5  my_function()
6
```

8. In any procedural language you like, write a function called Average, which accepts an array of integers and returns the average of those integers. Note — just write the function at this point, we'll use it in the next task. You shouldn't have a complete program or even code that outputs anything yet at the end of this task.

9.

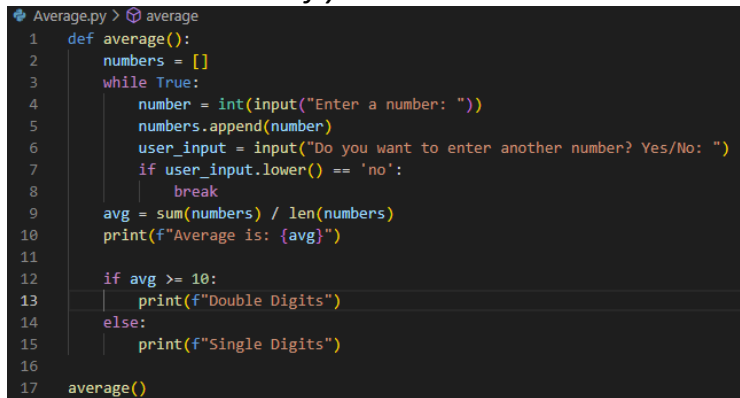
```
Average.py > ...
1  def average():
2      numbers = []
3      while True:
4          number = int(input("Enter a number: "))
5          numbers.append(number)
6          user_input = input("Do you want to enter another number? Yes/No: ")
7          if user_input.lower() == 'no':
8              break
9
10
11  average()
12
```

In the same language, write the code you would need to call that function and print out the result.

```
Average.py > ...
1  def average():
2      numbers = []
3      while True:
4          number = int(input("Enter a number: "))
5          numbers.append(number)
6          user_input = input("Do you want to enter another number? Yes/No: ")
7          if user_input.lower() == 'no':
8              break
9      avg = sum(numbers) / len(numbers)
10     print(f"Average is: {avg}")
11
12  average()
13
```

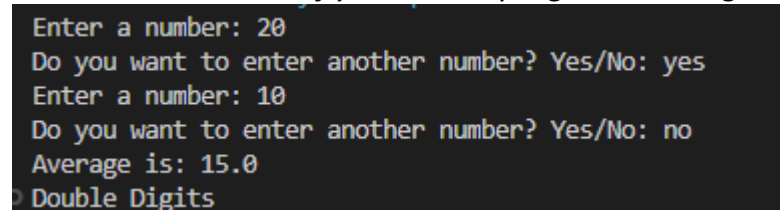
10. To the code from 9, add code to print the message "Double digits" if the average is above 10. Otherwise, print the message "Single digits".

<insert a screenshot of your code here>



```
Average.py > average
1 def average():
2     numbers = []
3     while True:
4         number = int(input("Enter a number: "))
5         numbers.append(number)
6         user_input = input("Do you want to enter another number? Yes/No: ")
7         if user_input.lower() == 'no':
8             break
9     avg = sum(numbers) / len(numbers)
10    print(f"Average is: {avg}")
11
12    if avg >= 10:
13        print(f"Double Digits")
14    else:
15        print(f"Single Digits")
16
17    average()
```

<insert a screenshot of your whole program running here>



```
Enter a number: 20
Do you want to enter another number? Yes/No: yes
Enter a number: 10
Do you want to enter another number? Yes/No: no
Average is: 15.0
Double Digits
```