1.1P: Preparing for OOP – Answer Sheet

1. Explain the following terminal instructions:
    a. cd: changes the directory
    b. ls: Lists the files in current directory
    c. pwd: Shows the current path

```
PS C:\Users\admin> ls


    Directory: C:\Users\admin


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        2021/04/29     13:33                .atom
d-----        2021/03/01     20:12                .cisco
d-----        2021/08/20     14:21                .dotnet
d-----        2021/03/02     12:44                .gem
d-----        2021/09/25      8:46                .nuget
d-----        2021/08/13     12:42                .redhat
d-----        2020/06/06      0:12                .VirtualBox
d-----        2021/03/12     13:07                .vscode
d-r---        2021/03/13     22:18                3D Objects
d-----        2022/01/10     23:08                Cisco Packet Tracer 7.3.1
d-r---        2021/03/13     22:18                Contacts
d-----        2022/01/21     17:19                Desktop
d-r---        2021/11/20     19:25                Documents
d-r---        2022/03/02      1:00                Downloads
d-r---        2021/03/13     22:18                Favorites
d-r---        2021/03/13     22:18                Links
d-r---        2021/03/13     22:18                Music
dar---        2021/05/20      1:20                OneDrive
```

```
PS C:\Users\admin> pwd

Path
----
C:\Users\admin
```

```
PS C:\Users\admin> cd C:\Users\admin\OneDrive\Desktop\ruby\Resources7.1p
PS C:\Users\admin\OneDrive\Desktop\ruby\Resources7.1p>
```

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	Integer
A temperature in Celsius	Float/double
The average age of a group of people	Float/double
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	My cats dads name

Integer	Number of Bees in the world
Float	How much I weigh
Boolean	Whether I can code

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`	False	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`	5.5	Float

`(a + b) * c`	`a = 1`
	`b = 1`
	`c = 5`
		10	Integer

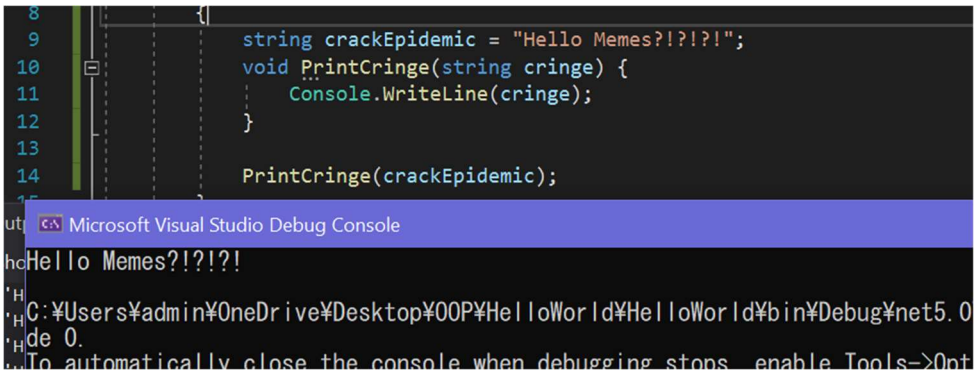
`"Fred" + " Smith"`		Fred Smith	String
`a + " Smith"`	`a = "Wilma"`	Wilma Smith	String

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

The difference between the two is declaring a variable makes the variable exist within the program without any assignment to anything. Initialising is when the variable gets assigned to a value

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

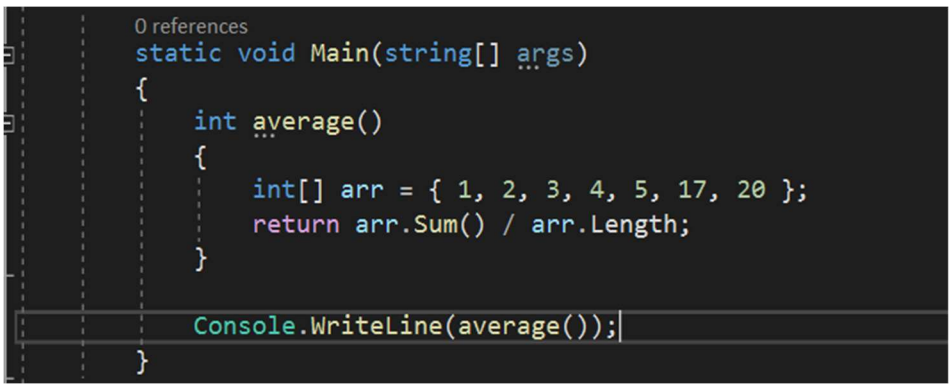
A parameter identify values that get passed into a function



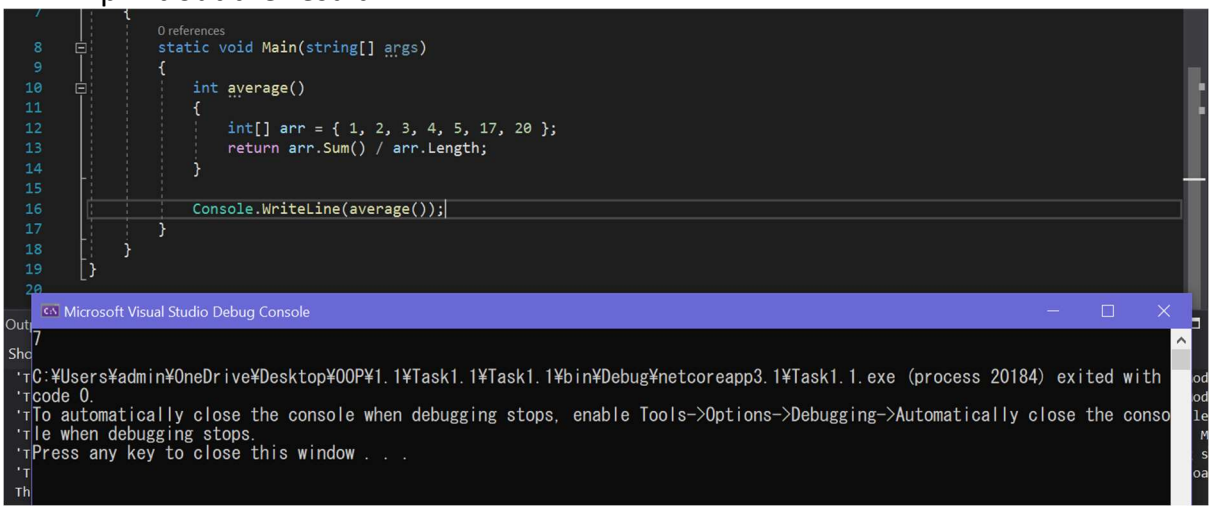
7. Using an example, describe the term **scope**.

Scope describes where variables can be accessed. You cannot access a variable declared in a different function/procedure unless you make variable global (not recommended)

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.



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



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”.