1.1P: Preparing for OOP – Answer Sheet

1. Explain the following terminal instructions:
   1. cd: changes the directory
   2. ls: Lists the files in current directory
   3. Text

      Description automatically generated with medium confidenceGraphical user interface, application

      Description automatically generatedpwd: Shows the current path
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 |

1. 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 |

1. 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 |

1. 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

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

A screenshot of a computer

Description automatically generatedA parameter identify values that get passed into a function

1. 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)

1. In any procedural language you like, write a function called Average, which accepts an array of integers and returns the average of those integers.

Text

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

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1. 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”.

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