



Object Oriented Programming

Pass Task 1.1: Preparing for Object Oriented Programming

Overview

We have designed this unit assuming that you have already been exposed to some fundamental programming concepts. While we don't expect that you know anything about object oriented programming specifically, we do expect that you have a solid grasp on these pre-requisite concepts.

- Purpose:** Demonstrate that you have the pre-requisite knowledge required for this unit.
- Task:** Answer some basic knowledge questions and write some simple pieces of structured code.
- Time:** This task should be completed as soon as you can.

Submission Details

You must submit the following file:

- A PDF document containing your written answers using the provided template.

Warning: If you are unable to complete this task successfully, you may struggle in this unit. Consider how you can strengthen your knowledge from pre-requisite units if you plan on continuing. Your tutor can help you with suggestions on what areas you could focus on.

Instructions

Note: Use the answer sheet provided in the resources for this task.

1. Explain the terminal instructions **cd**, **ls**, and **pwd**. Provide a screenshot showing these instructions being used correctly.
2. Consider the following kinds of information, and suggest the most appropriate data type to store or represent each:
 - A person's name
 - A person's age in years
 - A phone number
 - A temperature in Celsius
 - The average age of a group of people
 - Whether a person has eaten lunch
3. Aside from the examples already provided in question 2, come up with an example of information that could be stored as:
 - A string data type
 - An integer data type
 - A float data type
 - A boolean data type
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
6			
TRUE			
a	a = 2.5		
1 + 2 * 3			
a and FALSE	a = TRUE		
a or FALSE	a = TRUE		
a + b	a = 1 and b = 2		
2 * a	a = 3		
a * 2 + b	a = 2.5 and b = 2		
a + 2 * b	a = 2.5 and b = 2		

Expression	Given	Value	Data Type
$(a + b) * c$	$a = 1, b = 1, \text{ and } c = 5$		
"Fred" + " Smith"			
$a + \text{" Smith"}$	$a = \text{"Wilma"}$		

5. Using an example, explain the difference between **declaring** and **initialising** a variable.
6. Explain the term **parameter**. Write some code that demonstrates a simple use of a parameter. You should show a procedure or function that uses a parameter, and how you would call that procedure or function.
7. Using an example, describe the term **scope**.
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. Do not use any libraries for calculating the average. You must demonstrate appropriate use of parameters, returning and assigning values, and use of a loop. 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 question.
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 or equal to 10. Otherwise, print the message "Single digits". Provide a screenshot of your program running.