Revision Questions for Section D.3 - Program Development

D.3.1   Terms

D.3.2   Links: Class | Identifier | Primitive | Instance Variable | Parameter | Local Variable

D.3.3   Links: Method | Accessor | Mutator | Constructor | Signature | Return value

Links: Private | Protected | Public | Extends | Static

a. Define **each** term and give **one** example of each: *class, identifier, primitive, instance variable, parameter, local variable.*

b. Define **each** term and give **one** example of each: *method, accessor, mutator, constructor, signature, return value.*

c. Define **each** term and give **one** example of each: *private, protected, public, extends, static.*

d. Label **examples** of each term on an object's class printout.

D.3.4   Data Types

Links: Primitive Data Types | Strings | Types and Literals | Built-in Subroutines & Functions

a. Name the **primitive** data types in Java.

b. Give **three** examples of data that could be stored in these data types: int, long, double, char, Boolean

c. Explain why the **String** class is not a primitive data type.

d. Give **three** example of String data and **three** methods that could be applied to them.

D.3.5   Code

Links: Bicycle Class

a. Construct **code** for a "Car" class that illustrates all the terms in D.3.1 - D.3.4

D.3.6   Selection Code

Links: if-then / if-then-else | the if statement | the switch statement

a. Construct code using selection statements to assign a grade from 1 to 7 depending on results in a test.

b. Construct code using selection statements to sort three numbers into ascending order.

D.3.7   Repetition Code

Links: while / do-while | the while and do-while statements | the for statement

a. Construct code using repetition statements to input 10 numbers and find the total sum.

b. Change the code so that it terminates when the number 0 is entered.

c. Change the code so that it terminates when the total is greater than 100.

D.3.8   Static Array Code

Links: Arrays | Programming with Arrays

a. Construct **code** using a static array that inputs ten names into the array.

b. Construct **code** that will determine if a particular name is in the array.

c. Construct **code** that will count the number of names longer than 6 characters.

D.3.9   Internationalization
         Links: Internationalization | ASCII | UNICODE

a. Compare the **ASCII** and **UNICODE** character sets.
b. Discuss how the use of the UNICODE character set enables **internationalization**.
c. Discuss any other **features** of modern programming languages that help internationalization.

D.3.10 Ethical / Moral Obligations
         Links: Ethical Guidelines | OSS | Free Software Foundation | Writing Correct Programs

a. Discuss the **ethical** and **moral** obligations of programmers, with regards to testing of new
   software and copyright.
b. Describe the main aims of the **Open Source** software movement.
c. Research the **Free Software Foundation** organisation and find out **five** key facts about them.