Assessment part 1 – 100 marks in total

For this part of the assessment, you will design multiple programs which will perform the following operations in shell scripts:

Binary to Hex converter – 15 marks - yep

Binary to Oct converter – 15 marks - yep

Binary to Decimal converter (should convert to negative numbers too) – 20 marks -

Hex to Binary – 15 marks - yep

Hex to Oct – 15 marks - yep

Decimal to Binary – 10 marks - YEP

Decimal to Hex – 10 marks - yep

The scripts you create should take one argument ($1). Once this has been inputted, your script should then process that input and echo out the converted value in an appropriate format of your choice.

**Assume that the input will always be an 8-bit binary number – this means you don’t have to think about binary values which have more than eight 1s and 0s.**

Assessment part 2 – 100 marks in total

For this part of the assessment, you will design multiple programs which will convert logic circuits (in the form of formulas) from previous assessments and produce scripts to output a truth table. Open up workshop 4 for this module. You will be constructing 4 scripts for 4 formulas. Below are the formulas:

1. (A.B).!C – 10 marks - yep
2. A+(B+!C) – 10 marks - yep
3. A.(B+C) – 10 marks - yep
4. A.(A+!B) – 10 marks - yep
5. (A+!C).(!A+B) – 10 marks - yep

Your script should take in three arguments apart from question d which only has 2 variables. These arguments should correspond to A, B and C values. For example, if we assume that your arguments are 1, 0, 1 for the question a, your script should print out 0.

The final part of the assessment is to generate a truth table. Using the formulas below, you will create a script which prints out a table exactly like the ones you filled in before for the previous assessment. The print out should show all combinations of A, B and C and the output of the formula. TIP – you will need to use nested for loops for this part.

1. (A.B).C – 10 marks - yep
2. A+(!B+C) – 10 marks - yep
3. !A.(B+C) – 10 marks - yep
4. A.(A+!B) – 10 marks - yep
5. (A+C).(A+B) – 10 marks - yep