LAB #3

Marks: 1%
Due: Week 4, before lab class.

Bitwise Operators

Write a program that will do the following:

1. Ask a user to enter a Hexadecimal number → variable **number1**.
2. Multiply **number1** with 2 using applicable Bitwise operation. Display a result on the screen.
3. Divide **number1** by 2 using applicable Bitwise operation. Display a result on the screen.
4. Create a **mask** with the fifth bit set to one (1) and the rest of bits zero (0) → 0001 0000
5. Conduct Bitwise AND, Bitwise OR, and Bitwise XOR operations between **number1** and a **mask**. Display all results on the screen using the Hexadecimal format. An example of the output of your program could be as follows:

```
number1 & mask = ……
number1 | mask = ……
number1 ^ mask = …….
```

6. Display **number1** on the screen using the decimal format.
7. Display **number1** on the screen using the Hexadecimal format.
8. Display **number1** as a binary number. Use a mask and an applicable Bitwise operation. An example of the output of your program could be as follows:

```
number1 = 17 (Decimal)
number1 =  11 (Hex)
number1 = 00010001 (Binary)
```

Tips:

- Use the **unsigned** data type where applicable.
- Format specifier for Hexadecimal numbers is **%x** . Format specifier for unsigned integer numbers is **%u**.

PLEASE NOTE THAT ALL YOUR PRG255 LABS SHOULD BE SHOWN IN THE CLASS AND SUBMITTED ELECTRONICALLY ON THE BLACKBOARD (i.e. LABx.C file attached/submitted).