

Lab 1

Lab conditions:

This lab exercise will be completed by the end of the class. No late submission will be accepted

Work as a group of two students or individually.

Submit a Word document file or a PDF file on D2L @ Activities >> Assignments >> Lab 1.

Make sure your following naming format as listed below:

Last name, First Name: Wang, Zi Zhen (Eddie)

Student ID: A01314144

Questions:

1. Decimal to binary conversion

$$36 = 100100$$

$$36/2 = 0$$

$$18/2 = 0$$

$$9/2 = 1$$

$$4/2 = 0$$

$$2/2 = 0$$

$$1$$

$$15 = 1111$$

$$15/2 = 1$$

$$7/2 = 1$$

$$3/2 = 1$$

$$1$$

2. Decimal to hexadecimal conversion

$$158 =$$

$$158 / 16 = 9 \text{ R } 14$$

$$9 / 16 = 0 \text{ R } 9$$

$$= 9E \text{ base } 16$$

$$216 =$$

$$216 / 16 = 13 \text{ R } 8$$

$$13 / 16 = 0 \text{ R } 13$$

$$= D8 \text{ base } 16$$

3. Binary to hexadecimal conversion

$$1101101 =$$

Split into 2 groups of 4

$$0110 \ 1101 = 6 + 13$$

$$= 6D$$

0101101 = 2D

4. Suppose we are working with 8 bits quantities.

Provide details how -28 and 11 would be expressed in two's complement.

First, we would convert the decimal numbers to binary (1110 0100) and (0000 1011).

Then, we would swap all the numbers (convert 1 to 0 and vice versa) (0001 1011) and (1111 0100)

Then, we add one to the binary number. (0001 1100) and (1111 0101).

Converting (2's complement) to hexadecimal

0001 1100 = 1 + 12 = 1C

1111 0101 = 15 + 5 = F5

5. List out the 10 common system administration tasks.

Troubleshooting issues.

Managing any cloud storage.

Managing system infrastructure.

Maintaining hardware and software.

Helping clients with various problems.

Coding.

Networking.

Managing the security.

Using SQL to manage database.

Managing user accounts.

5. Challenge Questions (Optional)

Suppose we are working with 2 bytes quantities. Provide details how -11 would be expressed in two's complement and convert it to hexadecimal.

11 = 1011

-11 = 11110101

2 byte = 1111111111110101

= FFF5