# Homework2-solutoin

**1 . Answer these questions and Fill in the blanks.**

Open-end answer

**2.Consider the following function [sizeof(int) == 4]**

```
typedef unsigned char byte;
void show_bytes(byte *start, int len) {
     int i;
     for(i = 0; i < len; i++)
        printf("%.2x",start[i]);
}
unsigned int val = 0x1234abcd;
 byte *valp = (byte *) &val;
```

(1) What is the value of valp[4] (if consider it as an array of 4 elements of "byte")?

Little-endian: {valp[0], valp[1], valp[2], valp[3] } = { 0xcd , 0xab , 0x34 , 0x12 }

Big-endian: {valp[0], valp[1], valp[2], valp[3] } = { 0x12 , 0x34 , 0xab, 0xcd }

(2) What is the output of the following call to show_bytes on big-endian and little- endian machines respectively? (You can have a try on your machine!)

| | Little-endian | Big-endian |
|---|---|---|
| show_bytes(valp, 1) | cd | 12 |
| show_bytes(valp, 2) | cdab | 1234 |
| show_bytes(valp, 4) | cdab3412 | 1234abcd |

**3. In C language, if an evaluation expression contains both unsigned and signed values, then signed values will be implicitly casted into unsigned ones before evaluation. Please fill the following table with "<", ">" or "=". (Assume int value is encoded using 16 bits)**

| Constant A | Constant B | A ? B |
|---|---|---|
| -2U | -1U | < |
| -1 | 1 | < |
| -1 | 100U | > |

| | | |
|---|---|---|
| -1 | 65535U | = |
| -32767 | 32768U | > |