ECE 2220: System Programming Concepts **Fall 2016**
Problem Set 2 **Due: in class, Monday, September 19**

Assigned reading: Hoover, Chapter 3. Each problem is worth 10 points

From Chapter 3, starting on page 94

1. Number 1
2. Number 3
3. Number 4
4. Number 5
5. Number 6
6. Number 7
7. Number 10
8. Number 12

9. Masks and Shifts.
   9.1 Write one C instruction to write bits 5 – 11 of **`int a`** (**`a`** has bits 0 to 31) into bits 9 – 15 of **`int b`**, without changing any other bits of **`b`**.
   9.2 Write one C instruction to set **`int a`** to 12 if bits 3 – 7 of **`int b`** are 1 and bits 8 – 12 of **`b`** are 0.

10. Write a program which uses bit masking to create a 32-bit integer, **`n`**, from 8 hex characters. Your program should input eight ASCII characters that are valid hexadecimal symbols (**`'0'`**, **`'1'`**, …,**`'9'`**, **`'A'`**,…,**`'F'`**) into a character array, and then use each of those characters to create a 32-bit number, **`n`**. The first character entered should be the least significant nibble, and the last character entered should be the most significant nibble. For example, if the input is these eight characters: **`1234ABCD`**, the resulting value of **`n`** should be **`0xDCBA4321`**. Your program should then print out **`n`** as a hex number. (Your program does NOT have to insure the inputs are valid hex characters nor that the correct number of characters have been entered.)

```
  // the last line must be:  printf("n = 0x%X\n", n);
int main(void)
{
  int i;
  char c[80];
  int n=0;
  printf("Input> ");
  fgets(c, sizeof(c), stdin);
```

Turn in a paper copy of your solutions in class. Do not submit electronically. While we have a policy for late submission of programming assignments, late submission of homework assignments will not be accepted.