0. Which prereq did you take and when? CS2110 CS2130
   Fall Spring Summer 98 98 99 00 01 02 03 04 05 06 07 08

1. Are you planning on taking courses for which CS 2200 is a prerequisite:
   X Networking   __ Operating Systems   __ Hardware Arch.

2. Write a function in C called swap that will swap two ints:

   It will be called like this:

   int a = 42;
   int b = 78;
   /* Call to swap goes here */
   printf("%d %d\n", a, b);

   The output would be: 78 42

   Note: a and b are not global variables. That is your function
   must be able to be called with different pairs of variables.
   Write swap here:

```
function swap (*int a, *int b) {
    int temp = *a;
    *a = *b;
    *b = temp;
}
```

3. What does "make" do? Your answer should include three major
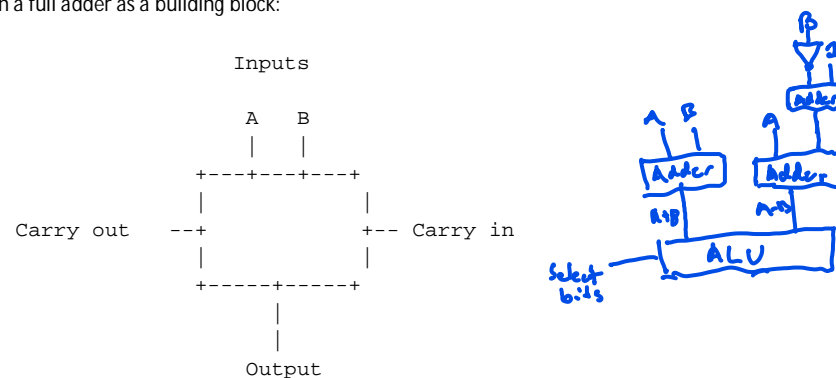   items.

   a. Unsure

   b.

   c.

4. Write 42 in binary and in hexadecimal

   binary: _101 0 1010_

   hexidecimal: _2 A_

   Write 42.25 in binary   (Not IEEE Floating Point) binary: _101010.01_

5. Given a full adder as a building block:

```
                    Inputs

                  A    B
                  |    |
            +---+---+---+
            |           |
Carry out  --+           +-- Carry in
            |           |
            +-----+-----+
                  |
                  |
               Output
```

   Design a 4 bit arithmetic functional unit which will
   implement addition (A+B) and 2's complement subtraction
   (A-B)

   Extra credit: Provide for overflow detection.   (Use the back of the paper for your answer)

6. What do you suppose this does:

```
load   r1, #2
load   r2, #3
add    r3, r1, r2
store  r3, result
```

   result: word   0

   **Load values at two memory locations into r1 and r2,
   add them and stores the sum at r3, and then stores the sum
   at the memory location that result occupies.**

7. What do you think about this:

```
Plan* createNewSelectionNode(
   Cond* condition,
   char* relation)
{
  Plan* newNode;
  newNode=(Plan*)malloc(sizeof(Plan));
  newNode->op=SELECTION;
  newNode->condParams[0]=condition;
  newNode->tableP1=NULL;
  newNode->tableP2=NULL;
  newNode->table1=relation;
  free(newNode);
  return newNode;
}
```

   **There is an error here. The memory
   location of the object we are returning
   has been freed by free().**