In this assignment, you will be dealing with loops and bit-wise operations.

In this assignment, you will program in assembly, a program that will match the following pseudocode:

```
int x and y = get_input_from_switches; // see note below
for(i=0; i<x; i++) {
    for(j=0; j<y; j++) {
        print_on_red_leds i and j; // see format below
    }
}
```

Input:

When getting X and Y from the switches, you will be getting both X and Y at the same time, in parallel, because X will come from bits SW[9..6] and Y will come from SW[3..0]. Switches SW[5..4] will be unused. So for example, if the user intends X = 14 and Y = 11, then the switches would be set to:

1 1 1 0 0 0 1 0 1 1

You will have to figure out how to separate this one value into two separate variables X and Y, so that you can save (and use) these values independently in your program. You will probably want to make use of bit-wise operators such as AND/OR and shifts to accomplish the separation of the numbers.

Output:

When printing i and j on the red leds (there are 10 of them), I want the bit pattern to be as follows:

I want "i" to be printed on LEDR[9..6] and "j" to be on LEDR[3..0]. The two bits in the middle (LEDR[5..4]) should always be off. They will represent a space between the two numbers to make it easier to read the values.

So, for example, if (i=10 and j= 8), then what is printed on LEDR[9..0] would be:

1 0 1 0 0 0 1 0 0 0

You will have to devise a way to get "i" and "j" encoded into a single 10-bit number. This will involve bit-wise operations like shift and AND and/or OR.

Since x and y (and by extension i and j) can only be 4 bits each, then the range of possible values that can be input in the switches would only be from 0 to 15 for each. These would be unsigned numbers.

Submission: (no late work accepted, under any circumstances)

Also, prior to the due date and time (see the date specified on Moodle), **upload your project into Moodle**. This will be a zip file that contains the **entire project directory structure**. It will be named userid-210-HW05.zip, where userid is your userid. **Make sure you check two things afterwards:**
1. That the file was actually uploaded correctly to Moodle.
2. **That when you download your submission from Moodle, that you can save it in a temporary location on your laptop, and actually unzip, load, and execute it on the Altera DE0-CV board. (if I can't do this with the zip file you submit for ANY reason, you will loose significant credit for the assignment.)**