CSE 110 Homework (Section C1)

Submission Date: Next available Lab

Carefully follow the instructions given in the questions.

Rules

1. You can only use the topics taught in class.
2. There are 5 problems. You *must* solve each of them.
3. There is negative marking. If you submit a code that you are not able to explain during examination, you will be negatively marked.
4. Do not copy code. If copying is caught, the copier and the provider both will be marked negatively. You can discuss strategies. But, for your own learning and skill development, try the problems individually.
5. The deadline is strict. During the next sessional class hours, bring all the code. We will examine and score you accordingly. Note that, on that day we will also have an online assignment.

1. Write a code which generates the following shape.

Sample Input: 6
Sample Output:

```
1   2   3   4   5   6
1   2   3   4   5
1   2   3   4
1   2   3
1   2
1
6   5   4   3   2   1
    5   4   3   2   1
        4   3   2   1
            3   2   1
                2   1
                    1
```

Sample Input: 4
Sample Output:

```
1   2   3   4
1   2   3
1   2
1
1
4   3   2   1
    3   2   1
        2   1
            1
            1
```

2. Write a program to find whether a given input year is leap year or not. A year is a leap year if it can be **evenly divided by 4**. However the condition does not hold true for **century years** except if the year is also **evenly divisible by 400**. You can only use `switch-case` to solve the problem. `If-else` or `ternary operator` cannot be used.

Sample Input: 2100   Sample Output: Not a leap year
Sample Input: 2004   Sample Output: Leap year
Sample Input: 1600   Sample Output: Leap year
Sample Input: 1507   Sample Output: Not a leap year

3. Write a program to reverse a number. You must store the result in a variable. Show the reversed number and the result multiplied by the digit in its first decimal place output in following format.

Sample Input: 382   Sample Output: 283, 849
Sample Input: 5106   Sample Output: 6015, 30075

4. Write a program to find the binary to decimal conversion.

Sample Input: 101   Sample Output: 5
Sample Input: 10100   Sample Output: 20

5. Solve the following problem:

http://uva.onlinejudge.org/index.php?option=com_onlinejudge&Itemid=8&page=show_problem&problem=36