Lab Assignment 6

Pattern Creation

CSE110: Programming Language I

No of Tasks			Points to Score
Classwork	**Evaluation**	**Homework**	**Homework** **7*10 = 70**
4	**2**	**7**	**Assessment** **2*10 = 20**

The students must complete the classwork tasks in the lab class to obtain the lab performance marks. They will also be marked based on the assessment tasks. The lab instructors may show/explain a few of the classwork tasks to the students if necessary. Any plagiarism in classwork or homework will lead to the student getting zero in the entire assignment. A random viva may take place.

You must not hard code any of the tasks, which means your code should work for any valid user input.

Classwork

1. Take the length and width of a **rectangle** from the user and create the rectangle according to the output below. Your output should match the specified output.

Sample Input #1	**Sample Input #2**
4 6	3 5
Output 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4	**Output** 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3

2. Take the height of a **left-justified right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1	**Sample Input #2**
4	3
Output 1 1 2 1 2 3 1 2 3 4	**Output** 1 1 2 1 2 3

3. Take the height of a **right-justified right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3
Output 4 3 4 2 3 4 1 2 3 4	**Output** 3 2 3 1 2 3

4. Take the height of an **isosceles triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3
Output 1 1 2 3 1 2 3 4 5 1 2 3 4 5 6 7	**Output** 1 1 2 3 1 2 3 4 5

Evaluation

1. Take the length of a **square** from the user and create the square according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3
Output 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4	**Output** 1 2 3 1 2 3 1 2 3

2. Take the height of a **right-justified right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3

Output
  1
  1 2
  1 2 3
1 2 3 4
	Output
	  1
	  1 2
	1 2 3

Homework

1. Take the length and width of a **rectangle** from the user and create a rectangle according to the output below. Your output should match the specified output.

Sample Input #1	**Sample Input #2**
4 6	3 5
Output 4 3 2 1 4 3 2 1 4 3 2 1 4 3 2 1 4 3 2 1 4 3 2 1	**Output** 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1

2. Take the height of a **palindromic isosceles triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1	**Sample Input #2**
4	3
Output 1 1 2 1 1 2 3 2 1 1 2 3 4 3 2 1	**Output** 1 1 2 1 1 2 3 2 1

3. Take the length and width of a **hollow rectangle** from the user and create the rectangle according to the output below. Your output should match the specified output.

Sample Input #1 6 4	**Sample Input #2** 3 5
Output 1 2 3 4 5 6 1 6 1 6 1 2 3 4 5 6	**Output** 1 2 3 1 3 1 3 1 3 1 2 3

4. Take the height of a **left-justified hollow right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

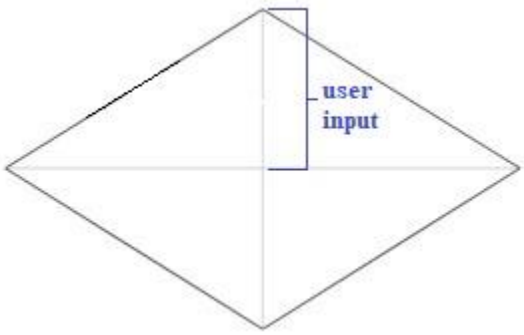
Sample Input #1 4	**Sample Input #2** 5	**Sample Input #3** 3
Output 1 1 2 1 3 1 2 3 4	**Output** 1 1 2 1 3 1 4 1 2 3 4 5	**Output** 1 1 2 1 2 3

5. Take the height of a **hollow isosceles triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3	**Sample Input #2** 2
Output 1 1 3	**Output** 1 1 3	**Output** 1 1 2 3

1 5 1 2 3 4 5 6 7	1 2 3 4 5	

Follow the diagram of a rhombus below to answer questions 6 and 7. For these questions, you will be taking the length of the blue marked area (user input).



6. Take the vertical diagonal length of a **rhombus** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3
Output 1 1 2 3 1 2 3 4 5 1 2 3 4 5 6 7 1 2 3 4 5 1 2 3 1	**Output** 1 1 2 3 1 2 3 4 5 1 2 3 1

7. Take the vertical diagonal length of a **hollow rhombus** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3
Output 1 1 3 1 5 1 7 1 5 1 3 1	**Output** 1 1 3 1 5 1 3 1