Lab 7

Rules:

- You are not allowed to use any **array** or **String**
- One only line where the word "**String**" may appear is in public static void main(**String** [] args) {
- The word "**char**" must not be anywhere in your solution

Overall hint: Imagine all outputs as a matrix of space and star. Then count spaces and stars to find out the trend of increment or decrement of number of stars/spaces. Utilize several **IF statement** to control when '**star**' will be printed, when '**space**' will be printed and when '**enter**' will be printed.

PROBLEM 1) Number Line
Sample input:
6
Sample output
```
123456
```

PROBLEM 2) Star Line
Print as many stars as given in input
Sample input:
6
Sample output
```
******
```

PROBLEM 3) Rectangle
Sample input:
4
6
Sample output
```
******
******
******
******
```

Hint: 4 and 6 means 4 lines of stars having 6 stars in each line.

PROBLEM 4) Rectangle
Sample input:
4
6
Sample output
```
123456
123456
123456
123456
```

Hint: 4 and 6 means 4 lines of numbers having 1..6 in each line.

PROBLEM 5) Triangle - Left Justified
Draw right angled triangle of given height
Sample input:
4
Sample output

```
*
**
***
****
```

Hint: One loop for lines, another loop for printing i number of starts when it is line i.

PROBLEM 6) Triangle - Left Justified
Draw right angled triangle of given height
Sample input:
4
Sample output

```
1
12
123
1234
```

PROBLEM 7) Triangle - Right Justified
Draw right angled triangle of given height
Sample input:
4
Sample output

```
   *
  **
 ***
****
```

Hint: Count and print appropriate number of spaces in front of stars. Notice that there is one less space and one more star in each line.

PROBLEM 8) Triangle - Right Justified
Draw right angled triangle of given height
Sample input:
4
Sample output

```
   1
  12
 123
1234
```

PROBLEM 9) Triangle - Isosceles
Draw triangle of given height
Sample input 1:
3
Sample output 1:

```
   *
  ***
*****
```

Sample input 2:
4
Sample output 2:

```
    *
   ***
  *****
*******
```

PROBLEM 10) Triangle - Isosceles
Draw triangle of given height
Sample input 1:
3
Sample output 1:

```
   1
  123
12345
```

Sample input 2:
4
Sample output 2:

```
    1
   123
  12345
1234567
```

PROBLEM 11) Triangle - Right Justified
Draw right angled triangle of given height
Sample input:
4
Sample output

```
    4
   34
  234
1234
```

PROBLEM 12) Rhombus
Just draw the image of the above triangle once. And then, the opposite, once.
Sample input:
3
Sample output

```
  *
 ***
*****
 ***
  *
```

PROBLEM 13) Rhombus
Just draw the image of the above triangle once. And then, the opposite, once.
Sample input:
3
Sample output

```
  1
 123
12345
 123
  1
```

PROBLEM 14) Hollow Rectangle
Display a rectangle of given length and width.
Sample input:
4
5
Sample output

```
*****
*   *
*   *
*****
```

Hint 1: Print the character space (‘ ‘) in the middle.
Hint 2: You can re-use your solution to PROBLEM 2 and use if condition to selectively print first and last star of each line and all stars of first and last line.

PROBLEM 15) Hollow Rectangle
Display a rectangle of given length and width.
Sample input:
4
5
Sample output

```
12345
1   5
1   5
12345
```

PROBLEM 16) Hollow Triangle - Left Justified
Draw right angled triangle of given height
Sample input:
5
Sample output

```
*
**
* *
*  *
*****
```

PROBLEM 17) Hollow Triangle - Left Justified
Draw right angled triangle of given height
Sample input:
5
Sample output

```
1
12
1 3
1  4
12345
```

PROBLEM 18) Hollow Triangle
Draw right angled triangle of given height
Sample input:
5
Sample output

```
    *
   **
  * *
 *  *
*****
```

PROBLEM 19) Hollow Triangle - Right Justified
Draw right angled triangle of given height
Sample input:
5
Sample output

```
    5
   45
  3 5
 2  5
12345
```

PROBLEM 20) Hollow Triangle
Draw triangle of given height
Sample input 1:
3
Sample output 1:

```
   *
  * *
*****
```

Sample input 2:
4
Sample output 2:

```
    *
   * *
  *   *
*******
```

PROBLEM 21) Hollow Triangle – Isosceles
Draw triangle of given height
Sample input 1:
3
Sample output 1:

```
   1
  1 3
12345
```

Sample input 2:
4
Sample output 2:

```
    1
   1 3
  1   5
1234567
```

PROBLEM 22) Hollow Rhombus
Just draw the image of the above triangle once. And then, the opposite, once.
Sample input:
3
Sample output

```
   *
  * *
*   *
  * *
   *
```

PROBLEM 23) Hollow Rhombus
Just draw the image of the above triangle once. And then, the opposite, once.
Sample input:
3
Sample output

```
  1
 1 3
1   5
 1 3
  1
```

PROBLEM 24) Palindrome
Sample input:
5
Sample output
123454321

PROBLEM 25) Palindromic Triangle
Sample input:
5
Sample output

```
    1
   121
  12321
 1234321
123454321
```