

Please note that, your programs should include adequate user interactive messages.  
Write an OOP program to solve the following problems:

1. To print the following pattern till n number of user input:

```
1
22
333
4444
.....
```

2. To print Floyd's Triangle:

```
0
01
101
0101
10101
```

3. To read a matrix of size m\*n from the keyboard and display the same on the screen using function.
4. Rewrite the previous problem to make the row parameter of the matrix as a default argument.
5. For a given set of non-negative integers and a value sum, the task is to check if there is a subset of the given set whose sum is equal to the given sum.

Example:

Input set[] = {5, 129, 6, 10, 45, 7, 9},

Sum = 11

Output: True (Explanation: There is a subset {5,6} with sum 11)

Input set[] = {5, 129, 6, 10, 45, 7, 9},

Sum = 450

Output: False (Explanation: There is no such subset with sum 450)

6. To find a prime number within a range.

Input number for starting range: 1

Input number for ending range: 100

The prime numbers between 1 and 100 are:

2,3,5,7,11,13,17,19,23,29,31,37,41,43,47,53,59,61,67,71,73,79,83,89,97.

The total number of prime numbers between 1 to 100 is: 25.