## Assignments: Python Basics
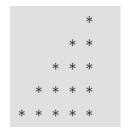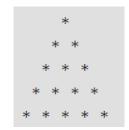
Set-1:

1. Reverse a Given Number
   a) Take the value of the integer and store in a variable.
   b) Using a while loop, get each digit of the number and store the reversed number in another variable.
   c) Print the reverse of the number.
2. Print largest permutation number of a given number
3. Find the number of ones in the binary representation of a number
4. Write a program to print following patterns
   a.

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

   b.

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

   c.

```
A
B B
C C C
D D D D
E E E E E
```

5. Check if two numbers are amicable numbers
   a. Take in both the integers and store it in separate variables.
   b. Find the sum of the proper divisors of both the numbers.
   c. Check if the sum of the proper divisors is equal to the opposite numbers.
   d. If they are equal, they are amicable numbers.

Set-2:
1. Find the cumulative sum of a list where the i-th element is the sum of the first i+1 elements from the original list.
2. Given a list of sorted numbers and a variable K, where K is also a number, write a Python program using binary search to find the number in the list which is closest to the given number K
3. Given a list of tuples, write a Python program to remove all the duplicated tuples from the given list using the concept of set.
4. Given an unsorted list of some elements (may or may not be integers), Find the frequency of each distinct element in the list using a dictionary.
5. Given two words, check whether they are anagrams using dictionary.
6. Find common elements in three sorted lists using sets.
7. Write a python program to find the most occurrence character and its number of occurrences.
8. Find Symmetric Pairs in dictionary using loop.
9. Determine common prefix from a list of strings.

Set-3:

1. Check Whether a String is a Palindrome or not Using Recursion.
2. Find the GCD of two numbers using recursion
3. Count the number of words in a text file
4. Read a text file and print all numbers present in the text file.
5. Count the occurrences of a word in a text file.
6. Print all the .mp3 files of current working directory.
7. Copy each line of one file into another file if the line does not begin with '#'.
8. Find out every common word in the two files