EXPERIMENT NO. 3

Ques 1 :- Write a program to enter numbers till the user wants. At the end, it should display the count of positive, negative, and Zeroes entered.

```
#include <stdio.h>
int main()
{
   int limit, num, positive = 0, negative = 0, zero = 0;
   printf("Enter the limit of the numbers\n");
   scanf("%d", &limit);
   printf("Enter %d numbers \n", limit);
   while (limit)
   {
      scanf("%d", &num);
      if (num > 0)
      {
         positive++;
      }
      else if (num < 0)
      {
         negative++;
      }
```

```
        else
        {
            zero++;
        }
        limit--;
    }
    printf("Positive Numbers : %d\n", positive);
    printf("Negative Numbers : %d\n", negative);
    printf("Number of zeroes : %d\n", zero);
    return 0;
}
```

Output of the Program :-

```
Enter the limit of the numbers
4
Enter 4 numbers
3
-2
0
1
Positive Numbers : 2
Negative Numbers : 1
Number of zero : 1
PS D:\College Work\C programming\Program 8 August\Assignment given>
```

Ques 2 :- Write a program to print the multiplication table of the number entered by the user. It should be in the correct formatting.

Num * 1 = Num

```
#include <stdio.h>

int main()

{

   int num, i = 1;

   printf("Enter the number : ");

   scanf("%d", &num);

   while (i <= 10)

   {

      printf("%d * %d = %d\n", num, i, num * i);

      i++;

   }

}
```

Output of the Program :-

```
Enter the number : 8
8 * 1 = 8
8 * 2 = 16
8 * 3 = 24
8 * 4 = 32
8 * 5 = 40
8 * 6 = 48
8 * 7 = 56
8 * 8 = 64
8 * 9 = 72
8 * 10 = 80
PS D:\College Work\C programming\Program 8 August\Assignment given>
```

Ques 3 :- Write a program to generate the following set of output.

1

2 3

4 5 6

```
#include <stdio.h>
int main()
{
   int num, temp = 1, temp1 = 1, k;
   printf("Enter number of rows you want to print : ");
   scanf("%d", &num);
   while (temp1 <= num)
```

```
    {
        k = 1;
        while (k <= temp1)
        {
            printf("%d ", temp);
            temp++;
            k++;
        }
        temp1++;
        printf("\n");
    }
    return 0;
}
```

Output of the Program :-

```
Enter number of rows you want to print : 3
1
2 3
4 5 6
PS D:\College Work\C programming\Program 8 August\Assignment given>
```

Ques 4 :- Write a program to generate the following set of output.

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

```
#include <stdio.h>
int main()
{
   int rows, i, j, count;
   printf("Enter the number of rows you want to print : ");
```

```
    scanf("%d", &rows);
    i = 0;
    while (i<rows)
    {
        j = 0;
        while (j<=i)
        {
            if (j==0 || i==0)
                count = 1;
            else
                count = count * (i - j + 1) / j;
            printf("%d ", count);
            j++;
        }
        printf("\n");
        i++;
    }
    return 0;
}
```

Output of the Program :-

```
Enter the number of rows you want to print : 5
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
PS D:\College Work\C programming\Program 8 August\Assignment given>
```

Ques 5 : - The population of a town is 100000. The population has increased steadily at the rate of 10% per year for the last 10 years. Write a program to determine the population at the end of each year in the last decade.

```
#include <stdio.h>

int main()

{

   int population = 100000, i;


   for (i = 1; i <= 10; i++)
```

```
    {
        population = population - (population * 10) / 100;
        printf("%d year population is %d\n", i, population);
    }
}
```

Output of the Program :-

```
1 year population is 90000
2 year population is 81000
3 year population is 72900
4 year population is 65610
5 year population is 59049
6 year population is 53145
7 year population is 47831
8 year population is 43048
9 year population is 38744
10 year population is 34870
PS D:\College Work\C programming\Program 8 August\Assignment given>
```

Ques 6 :- Ramanujan Number is the smallest number that can be expressed as the sum of two cubes in two different ways. WAP to print all such numbers up to a reasonable limit.

```
#include <stdio.h>

int main()
```

```
{
   int num = 5000,i, x, y, count;



   for (i=1; i<num; i++)
   {
      count = 0;
      for (x = 1; x * x * x<i; x++)
      {
         for (y = x + 1; x * x * x + y * y * y<=i; y++)
         {

            if (x * x * x + y * y * y == i)
            {
               count++;
               x++;
            }
         }
      }
```

```
        if (count==2)
        {
            printf("%d\n", i);
        }
    }

    return 0;
}
```

Output of the Program :-