Assingment-5

Ankit Kumar Patel(MCA)

1. Find the sum of first 10 natural numbers. (Using for loop)

```
#include <stdio.h>
void main()
{
   int  i, sum = 0;
   printf("The first 10 natural number is :\n");
   for (i = 1; i <= 10; i++)
   {
      sum = sum + i;
      printf("%d ",i);
   }
   printf("\nThe Sum is : %d\n", sum);
}
```

Output:

```
The first 10 natural number is :

1 2 3 4 5 6 7 8 9 10

The Sum is : 55
```

2. Display the multiplication table of a given integer (Using while loop)

```
#include <stdio.h>
void main()
{
  int i=0,n;
  printf("Input the number (Table to be calculated) : ");
  scanf("%d",&n);
  printf("\n");
  while(i<10)
  {
     i++;
   printf("%d X %d = %d \n",n,i,n*i);
  }
}
```

Output:

```
Input the number (Table to be calculated) : 10




10 X 1 = 10

10 X 2 = 20

10 X 3 = 30
```

```
10 X 4 = 40
10 X 5 = 50


10 X 6 = 60


10 X 7 = 70


10 X 8 = 80


10 X 9 = 90


10 X 10 = 100
```

3.Display the n terms of odd natural number and their sum (Using do…while loop)

```
#include <stdio.h>

void main()

{

  int i=1,n,sum=0;


  printf("Input number of terms : ");

  scanf("%d",&n);

  printf("\nThe odd numbers are :");

  do{
```

```
    printf("%d ",2*i-1);
    sum+=2*i-1;
    i++;
  }
  while(i<n);
  printf("\nThe Sum of odd Natural Number upto %d terms : %d
\n",n,sum);
}
```

Output:

```
Input number of terms : 10




The odd numbers are :1 3 5 7 9 11 13 15 17

The Sum of odd Natural Number upto 10 terms : 81
```

4.display the pattern like right angle triangles. (Using for loop)

```
*
**
***
****
#include <stdio.h>
```

```
int main()
{
  int Rows, i, j;
  for ( i = 1 ; i <= 4; i++ )
  {
     for ( j = 1 ; j <= i; j++ )
     {
        printf("* ");
     }
     printf("\n");
  }
  return 0;
}
```

5. Display the pattern like right angle triangles. (Using while loop) 1

```
2 3
4 5 6
7 8 9 10

#include <stdio.h>

int main()
{
        int i, j,k=1;
        i = 1;
        while ( i <= 4)
        {
```

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

6. Make such a pattern like a pyramid with numbers (Using do…while loop)

```
    1
   2 3
  4 5 6
 7 8 9 10
```

```
#include <stdio.h>
void main()
{
  int i,j,spc,k,t=1;

  spc=4+4-1;
  for(i=1;i<=4;i++)
  {
```

```
            for(k=spc;k>=1;k--)
              {
                printf(" ");
              }
               for(j=1;j<=i;j++)
               printf("%d ",t++);
             printf("\n");
        spc--;
       }
     }
```

7. Display Pascal's triangle. (Using for loop)

```
      1
     1  1
    1  2  1
   1  3  3  1
  1  4  6  4  1
```

8. Display the first n terms of Fibonacci series. (Using for loop)

```
#include <stdio.h>
int main() {
    int i, n, t1 = 0, t2 = 1, nextTerm;
```

```
    printf("Enter the number of terms: ");
    scanf("%d", &n);
    printf("Fibonacci Series: ");

    for (i = 1; i <= n; ++i) {
        printf("%d, ", t1);
        nextTerm = t1 + t2;
        t1 = t2;
        t2 = nextTerm;
    }

    return 0;
}
```

Output:

```
Enter the number of terms: 10

Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34,
```

9. Check whether a given number is a perfect number or not. (Using while loop)

```
#include<stdio.h>
```

```
int main()
{
    int num, count = 1, sum = 0;

    printf("Enter a number\n");
    scanf("%d", &num);

    while(count < num)
    {
        if(num%count == 0)
        {
            sum = sum + count;
        }
        count++;
    }

    if(sum == num)
    {
        printf("\n%d is a perfect number\n", num);
```

```
    }
    else
    {
        printf("\n%d is not a perfect number\n", num);
    }

    return 0;
}
```

Output:

```
Enter a number

6



6 is a perfect number
```

10. Find the Armstrong number for a given range of number. (Using while loop)

```
#include <stdio.h>
void main()
{
```

```
int num,r,sum,temp;
int stno,enno;

printf("Input starting number of range: ");
scanf("%d",&stno);

printf("Input ending number of range : ");
scanf("%d",&enno);

printf("Armstrong numbers in given range are: ");
for(num=stno;num<=enno;num++){
    temp=num;
    sum = 0;

    while(temp!=0){
        r=temp % 10;
        temp=temp/10;
        sum=sum+(r*r*r);
    }
    if(sum==num)
```

```
        printf("%d ",num);
    }
printf("\n");
}
```

Output:

```
Input starting number of range: 100

Input ending number of range : 500

Armstrong numbers in given range are: 153 370 371 407
```

11. Determine whether a given number is prime or not. (Using do…while loop)

```
#include<stdio.h>
int main()
{
    int num,i=1,c=0;
    printf("Enter a Number : ");
    scanf("%d",&num);
```

```
    do
    {
        if(num%i==0)
        c++;
        i++;
    }
     while(i<=num);{
    if(c==2)
        printf("\n%d is Prime Number",num);
    else
        printf("\n%d is Not Prime Number",num);
     }
    return 0;
}
```

Output:

```
Enter a Number : 97



97 is Prime Number
```

12. Display the number in reverse order. (Using do…while loop)

```
#include <stdio.h>
int main() {
   int n, rev = 0, remainder;
   printf("Enter an integer: ");
   scanf("%d", &n);
   do
   {
      remainder = n % 10;
      rev = rev * 10 + remainder;
      n /= 10;


   }
   while (n != 0);
   {
   printf("Reversed number = %d", rev);
   }
   return 0;
}
```

Output:

```
Enter an integer: 54321


Reversed number = 12345
```

13. Display the sum of the series [9 + 99 + 999 + 9999 ...] (Using for loop)

```
#include <stdio.h>


void main()
{   long int n,i,t=9;
        int sum =0;
        printf("Input the number or terms :");
        scanf("%ld",&n);
        for (i=1;i<=n;i++)
        { sum +=t;
          printf("%ld   ",t);
          t=t*10+9;
        }
        printf("\nThe sum of the series = %d \n",sum);
}
```

Output:

```
Input the number or terms :5

9   99   999   9999   99999

The sum of the series = 111105
```