Assignment-5

1. **find the sum of first 10 natural numbers.**

```
#include <stdio.h>
void main()
{
   int  i, sum = 0;

   printf("The sum of first 10 natural no is :\n");

   for (i = 1; i <= 10; i++)
   {
      sum = sum + i;
      printf("%d ",i);
   }
   printf("\nThe Sum is : %d\n", sum);
}
```

```
The sum of first 10 natural no is
1 2 3 4 5 6 7 8 9 10
The Sum is : 55
PS C:\Users\l\Desktop\soom\cc++>
```

2. **display the multiplication table of a given integer**

```
#include <stdio.h>
int main()
{
  int n, i;

   printf("Enter a Number ");
   scanf("%d",&n);
   i=1;
```

```
    while(i<=10){

        printf("%d * %d = %d \n", n, i, n*i);
        ++i;
    }
     return 0;

}
```

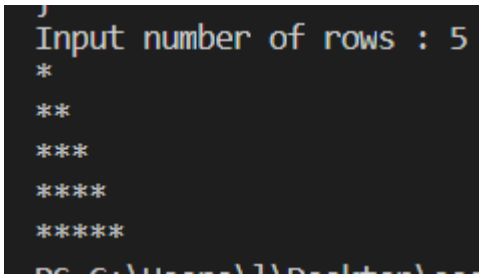
```
Enter a Number 5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

3. display the n terms of odd natural number and their sum

```
#include <stdio.h>
int main(){
    int n,i=1,sum;
    printf("Enter the number for n:");
    scanf("%d",&n);
        do {
            if(i%2!=0){
                sum=sum+i;
            }
            i++;
        }
        while(i<=n);
    printf("The sum of  odd number is:%d\n",sum);
    return 0;
}
```

4.**display the pattern like right angle triangles.**

```
#include <stdio.h>
void main()
{
  int i,j,rows;
  printf("Input number of rows : ");
  scanf("%d",&rows);
  for(i=1;i<=rows;i++)
  {
          for(j=1;j<=i;j++)
            printf("*");
          printf("\n");
  }
}
```



5. **display the pattern like right angle triangles**.

```
#include <stdio.h>

int main()
{
  int Rows, i = 1, j,k=1;

  printf("Please Enter the Number of Rows:  ");
  scanf("%d", &Rows);
  while ( i <= Rows)
  {
```

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

```
Please Enter the Number of Rows:
1
12
123
1234
12345
123456
PS C:\Users\l\Desktop\soom\cc++>
```

6. make such a pattern like a pyramid with numbers

```
#include <stdio.h>
int main(){
   int i=1,j,k,n,t=1,g;
   printf("Enter the value for n:");
   scanf("%d",&n);
   g=n+4-1;
   do
   {
      for(k=g;k>=1;k--){
         printf(" ");
      }
      for(j=1;j<=i;j++)
         printf("%d",t++);
```

```
    printf("\n");
    g--;
    i++;
  }
  while(i<=n);
  return 0;
}
```

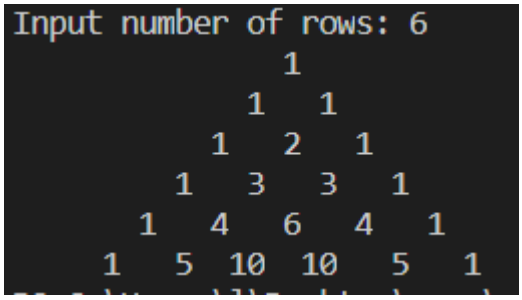
```
Enter the value for n:4
       1
      23
     456
    78910
PS C:\Users\l\Desktop\so
```

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

```
#include <stdio.h>

void main()
{
   int rows,c=1,m,i,j;
   printf("Input number of rows: ");
   scanf("%d",&rows);
   for(i=0;i<rows;i++)
   {
      for(m=1;m<=rows-i;m++)
      printf("  ");
      for(j=0;j<=i;j++)
      {
         if (j==0||i==0)
            c=1;
         else
           c=c*(i-j+1)/j;
```

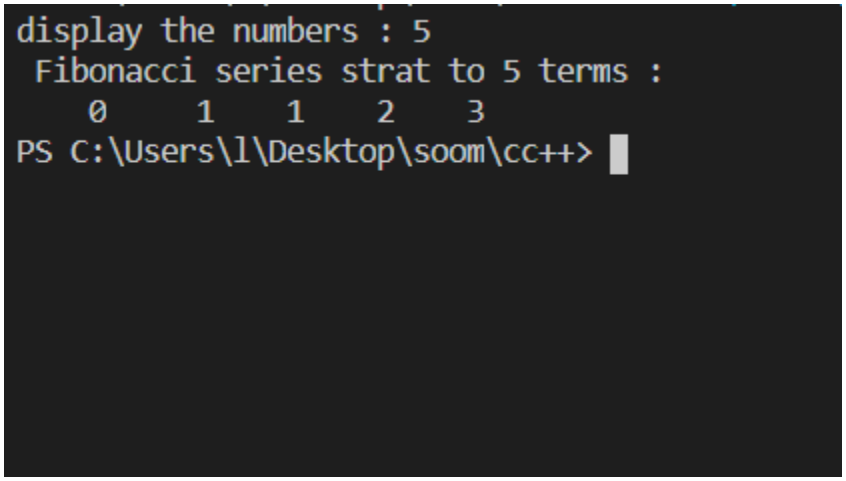
```
        printf("% 4d",c);
      }
      printf("\n");
   }
}
```



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

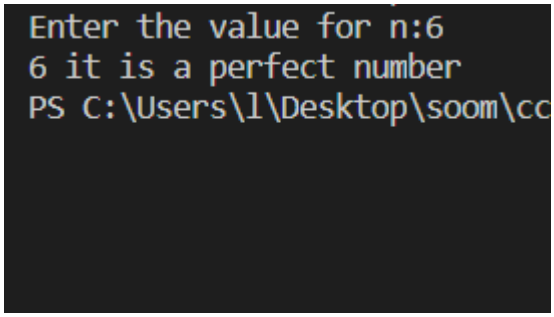
```
#include <stdio.h>
void main()
{
  int a=0,b=1,tem,i,n;
  printf("display the numbers : ");
  scanf("%d",&n);
  printf(" Fibonacci series strat to %d terms : \n",n);
  printf("% 5d % 5d", a,b);

 for(i=3;i<=n;i++)
  {
    tem=a+b;
    printf("% 5d",tem);
    a=b;
    b=tem;
  }
  printf("\n");
}
```



9. check whether a given number is a perfect number or not

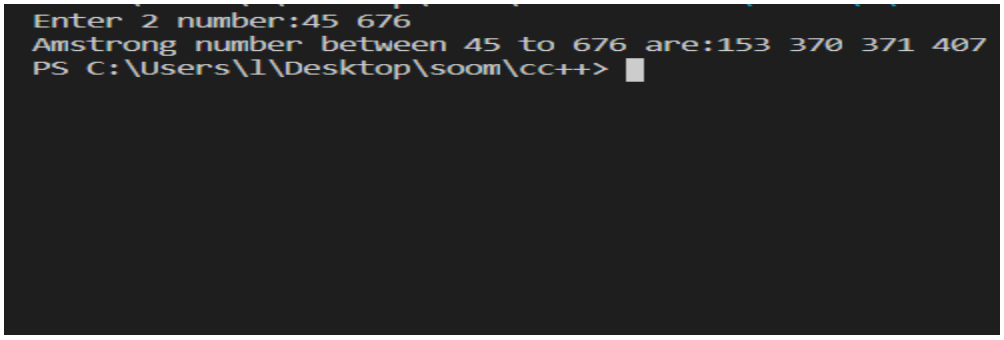
```
#include <stdio.h>
int main() {
   int i=1,n,sum=0;
   printf("Enter the value for n:");
   scanf("%d",&n);
   while(i<=n/2) {
      if(n%i==0) {
         sum=sum+i;
      }
      i++;
   }
   if(sum==n)
      printf("%d it is a perfect number",n);
   else
      printf("%d it is not a perfect number",n);
   return 0;
}
```



10. **find the Armstrong number for a given range of number**.

```
#include <stdio.h>
#include<math.h>
int main() {
   int a,b,n,on,m,c=0;
   double num=0.0;
   printf("Enter 2 number:");
   scanf("%d %d", &a,&b);
   printf("Amstrong number between %d to %d are:",a,b);
   for(n=a+1;n<b;++n)
   {
      on=n;
      while(on!=0)
      {
         on=on/10;
         ++c;
      }
      on=n;
      while(on!=0)
      {
         m=on % 10;
         num=num+ pow(m, c);
         on=on/10;
      }
      if(num==n)
         printf("%d ",n);
```

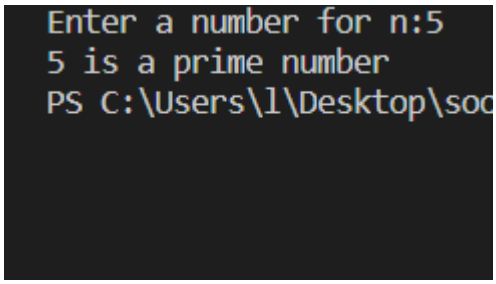
```
    c=0;
    num=0;
  }
  return 0;
}
```



11. determine whether a given number is prime or not

```
#include <stdio.h>
int main() {
  int n,i=2,num=0;
  printf("Enter a number for n:");
  scanf("%d",&n);
  while(i<=n/2) {
    if(n%i==0)  {
      num=1;
      break;
    }
    ++i;
  }
  if(n==1)  {
    printf("1 is neither prime nor composite");
  }
  else
  {
    if(num==0)
      printf("%d is a prime number",n);
```

```
    else
        printf("%d is not a prime number",n);
  }
  return 0;
}
```



12.**display the number in reverse order**

```
#include <stdio.h>
int main() {
  int n,r=0;
  printf("Enter the number:");
  scanf("%d",&n);
  do {
    r=r*10;
    r=r+n%10;
    n=n/10;
  }
  while(n!=0);
  printf("Reverse of the number is:%d\n",r);
  return 0;
}
```

```
Enter the number:4567
Reverse of the number is:7654
PS C:\Users\l\Desktop\soom\cc++>
```

13.**display the sum of the series [9 + 99 + 999 + 9999 ...]**

```
#include <stdio.h>
void main()
{
   long int n,i,t=9;
   int sum=0;
   printf("Enter the value of n:");
   scanf("%d", &n);
   for(i=1;i<=n;i++)
   {
      sum=sum+t;
      printf("%ld ",t);
      t=t*10+9;
   }
   printf("\nsum of the series is:%d\n",sum);
}
```

```
Enter the value of n:5

9 99 999 9999 99999

sum of the series:111105
```

14.**find the sum of the series [1-X^2/2!+X^4/4!- .....].**

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

```
    float x,sum,t,d;
    int i=1,n;
    printf("Enter the value for x:");
    scanf("%f", &x);
    printf("Enter the value for n:");
    scanf("%d",&n);
    sum=1;
    t=1;
    while(i<n)
    {
       d=(2*i)*(2*i-1);
       t=-t*x*x/d;
       sum=sum+t;
       i++;
    }
    printf("the sum= %f\n Value of n= %d\n Value of X=%.2f\n",sum,n,x);
}
```

```
Enter the value for x:2

Enter the value for n:5

the sum= -
0.415873

 Value of n= 5

 Value of X=2.00
```

15.**find the sum of the series [x - x^3 + x^5 + ...].**

```
#include <stdio.h>
#include <math.h>
void main()
{
   int x,sum,ctr,i=1,n,m,mm,nn;
   printf("Enter the value for x:");
```

```
    scanf("%d",&x);
    printf("Enter the value for n:");
    scanf("%d",&n);
    sum=x;
    m=-1;
    printf("The value of the series:\n");
    printf("%d\n",x);
    do
    {
      ctr=(2*i+1);
      mm=pow(x,ctr);
      nn=mm*m;
      printf("%d\n",nn);
      sum=sum+nn;
      m=m*(-1);
      i++;
    }
    while(i<n);
    printf("\n The sum=%d\n",sum);
}
```

```
Enter the value for x:2

Enter the value for n:5

The value of the series:

2

-
8

32

-
128

512
```

```
The sum=410
```