Assignment - 7 A Job Ready Bootcamp in C++, DSA and IOT

Iterative Control Statements (Part - 2)

1. Write a program to find the Nth term of the Fibonnaci series.

```
#include<stdio.h>
int main()
{
   int n,i,prev=0,cur=1,next=0 ;
   printf("Enter a number ");
   scanf("%d",&n);

   if(n>0)
   {
      if(n==1)
         printf("1");
      else
      {
        for(i=1;i<=n-1;i++)
      {
         next=prev+cur;
         prev=cur;
         cur=next;
      }
      printf("%d ",next);
      }
   }
   else
      printf("Please enter a valid number");

   return 0;
}
```

2. Write a program to print first N terms of Fibonacci series .

```
#include<stdio.h>
int main()
{
   int n,i,prev=0,cur=1,next=0 ;
   printf("Enter a number ");
   scanf("%d",&n);


   if(n>0)
   {
      printf("1 ");
      for(i=1;i<=n-1;i++)
      {
         next=prev+cur;
         printf("%d ",next);
         prev=cur;
         cur=next;
      }
   }
   else
      printf("Non Positive Number");

   return 0;
}
```

3. Write a program to check whether a given number is there in the Fibonacci series or not.

```
#include<stdio.h>
int main()
{
   int n,i,prev=0,cur=1,next=0 ;
   printf("Enter a number ");
   scanf("%d",&n);

   if(n>0)
   {
      if(n==1)
         printf("Fibonacci number");
      else
      {
         for(i=1;i<n;i++)
      {
         next=prev+cur;
         prev=cur;
         cur=next;

         if(next==n)
         {
            printf("Fibonacci number");
            break;
         }
         if(next>n)
          {
            printf("Not a fibonacci number");
            break;
          }
      }

      }
   }
   else
      printf("Please enter a valid number");
   return 0;
}
```

4. Write a program to calculate HCF of two numbers .

```
#include<stdio.h>
int main()
{
   int a,b,hcf=1,i;
   printf("Enter two number ");
   scanf("%d %d",&a,&b);

   int min = a<b?a:b;

   for(i=1; i<=min; i++)
   {
      if((a%i==0) && (b%i==0))
         hcf=i;
   }
   printf("HCF is %d",hcf);
   return 0;
}
```

5. Write a program to check whether two given numbers are co-prime numbers or not.

```
#include<stdio.h>
int main()
{
   int a=7,b=28,hcf,i;

   int min = a<b?a:b;

   for(i=1; i<=min; i++)
   {
      if((a%i==0) && (b%i==0))
         hcf=i;
   }

   if(hcf==1)
    {
      printf("Co-Prime Number");
     }
   else
      printf("Not co prime number");

   return 0;
}
```

6. Write a program to print all Prime numbers under 100.

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

   for(n=1; n<=100; n++)
   {
      flag=0;
      for(i=2;i<=n/2;i++)
      {
         if(n%i==0)
          flag = 1;
      }
      if(flag==0)
         printf("%d ",n);
   }

   return 0;
}
```

7. Write a program to print all Prime numbers between two given numbers .

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

   for(n=2; n<=50; n++)
   {
      flag=0;
      for(i=2;i<=n/2;i++)
      {
         if(n%i==0)
          flag = 1;
      }
      if(flag==0)
         printf("%d ",n);
   }

   return 0;
}
```

8. Write a program to find next Prime number of a given number.

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

   for(n=105;  ; n++)
   {
      flag=0;
      for(i=2;i<=n/2;i++)
      {
         if(n%i==0)
          flag = 1;
      }
      if(flag==0)
      {
         printf("Next prime number is %d \n",n);
         break;
      }

   }

   return 0;
}
```

9. Write a program to check whether a given number is an Armstrong number or not.

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

int main()
{
   int x,t,num,sum=0,rem=0,count=0;
   printf("Enter a number ");
   scanf("%d",&x);

   num=x,t=x;
   while(x!=0)
   {
      x=x/10;
      count++;
   }
   while(t!=0)
   {
      rem=t%10;

      sum=sum+ pow(rem,count);
      t=t/10;
   }
   if(sum==num)
```

```
        printf("Armstrong Number");
    else
        printf("Not");

}
```

10. Write a program to print all Armstrong numbers under 1000.

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

int main()
{
    int x=1000,t,i,num=0,sum=0,rem=0,count=0;

    for(i=1;i<=x;i++)
    {
        sum=0,count=0;
        num=i, t=i;

        while(num!=0)
        {
            num=num/10;
            count++;
        }
        while(t!=0)
        {
            rem=t%10;
            sum=sum+ pow(rem,count);
            t=t/10;
        }
        if(sum==i)
            printf("%d ",sum);
    }
}
```