Iterative Control Statements (Part - 2)

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

```
#include<stdio.h>
int main()
{
   int a=1,b=0,temp,n;
   printf("enter number: ");
   scanf("%d",&n);
   for(int i=0;i<n;i++){
   temp=a+b;
   a=b;
   b=temp;
   }
    printf("%d ",b);
}
```

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

```
#include<stdio.h>
int main()
{
   int a=1,b=0,temp,n;
   printf("enter number: ");
   scanf("%d",&n);
   for(int i=0;i<n;i++){
   temp=a+b;
   a=b;
   b=temp;
    printf("%d ",b);
```

```
    }


}
```

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

```
#include<stdio.h>
int main()
{
   int a=1,b=0,temp,n;
   printf("enter number: ");
   scanf("%d",&n);
   while(b<=n){
   temp=a+b;
   a=b;
   b=temp;
   if(b==n)
   {
      temp=0;
      break;
   }
   }
   if(temp==0)
      printf("given number is in fibonacci series");
   else
    printf("given number is not in fibonacci series");
}
```

4. Write a program to calculate HCF of two numbers

```
#include<stdio.h>
int main()
{
   int a,b,hcf=1,min;
   printf("enter two number: ");
   scanf("%d %d",&a,&b);
   min= a<b? a:b;
   for(int i=1;i<min;i++){
      if(a%i==0 && b%i==0)
      {
         hcf=i;
      }
   }
   printf("hcf is %d",hcf);
}
```

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

```
#include<stdio.h>
int main()
{
   int a,b,hcf=1,min;
   printf("enter two number: ");
   scanf("%d %d",&a,&b);
   min= a<b? a:b;
   for(int i=1;i<min;i++){
      if(a%i==0 && b%i==0)
      {
         hcf=i;
```

```
        if(hcf>1)
        break;
      }
   }
   if(hcf==1)
   printf("given number is co prime ");
   else
   printf("given number is not a co prime ");
}
```

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

```
#include<stdio.h>
int main()
{
   int a=2,factor;
   for(int i=2;i<=100;i++)
   {
      factor=1;
      for(int j=2;j<i;j++)
      {
         if(i%j==0)
         {
            factor=0;
            break;
         }
      }
      if(factor)
      printf("%d\t",i);
   }
}
```

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

```
#include<stdio.h>
int main()
{
   int a,b,factor;
   printf("enter the range: ");
   scanf("%d %d",&a,&b);
   if(b<a)
   {
      factor=b;
      b=a;
      a=factor;
   }
   while(a<=b){
      factor=1;
      for(int i=2;i<a;i++)
      {
         if (a%i==0)
         {
            factor=0;
            break;
         }
      }
      if(factor)
      printf("%d\t",a);
      a++;
   }
}
```

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

```
#include<stdio.h>
int main()
{
   int a,factor;
   printf("enter number: ");
   scanf("%d",&a);
   a++;
   while (1)
   {
      factor=1;
      for(int i=2;i<a;i++)
      {
         if(a%i==0){
           factor=0;
           i++;
         }
      }
      if(factor)
      {
         printf("%d",a);
         break;
      }
      a++;
   }
}
```

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 a,b,c=0;
   printf("enter number: ");
   scanf("%d",&a);
   b=a;
   while(b>0)
   {
      c=c+(b%10)*(b%10)*(b%10);
      b=b/10;
   }
   if(a==c)
   printf("%d is armstrong number",c);
   else
   printf("%d is not armstrong number",c);

}
```

10. Write a program to print all Armstrong numbers under 100

```
#include<stdio.h>
int main()
{
   int a,c;
   for(int i=1;i<1000;i++)
   {
      a=i;
      c=0;
      while (a>0)
      {
         c=c+(a%10)*(a%10)*(a%10);
         a=a/10;
      }
      if(i==c)
      printf("%d\t",i);
   }
}
```