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

**Iterative Control Statements (Part - 2)**

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

Sol – 1.

#include<stdio.h>

#include<conio.h>

int main()

{

int a=-1,b=1,c,i,n;

printf("Enter a number : ");

scanf("%d",&n);

for(i=1;i<=n;i++)

{

c=a+b;

a=b;

b=c;

}

printf("%d term of fibonacci series is %d",n,c);

getch();

return 0;

}

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

Sol – 2.

#include<stdio.h>

#include<conio.h>

int main()

{

int a=-1,b=1,c,i,n;

printf("Enter a number : ");

scanf("%d",&n);

printf("First %d term of fibonacci series is - \n",n);

for(i=1;i<=n;i++)

{

c=a+b;

a=b;

b=c;

printf("%d\t",c);

}

getch();

return 0;

}

3. Write a program to check whether a given number is there in the Fibonacci

series or not.

Sol – 3.

#include<stdio.h>

#include<conio.h>

int main()

{

int a=1,b=1,c=0,i,n;

printf("Enter a number : ");

scanf("%d",&n);

if(n==0)

printf("0 is there in fibonacci series on 1 position");

else if(n==1)

printf("1 is there in fibonacci series on 2 and 3 position");

else

{

for(i=4;i<=n+2;i++)

{

c=a+b;

a=b;

b=c;

if(n==c)

{

printf("%d is there in fibonacci series on %d position",c,i);

break;

}

}

if(n!=c)

printf("%d is not there in fibonacci series",n);

}

getch();

return 0;

}

4.Write a program to calculate HCF of two numbers

Sol – 4.

#include<stdio.h>

#include<conio.h>

int main()

{

int x,y,i,a;

printf("Enter two numbers : ");

scanf("%d%d",&x,&y);

for(i=1;i<=(x>y?y:x);i++)

{

if(x%i==0&&y%i==0)

a=i;

}

printf("HCF of %d and %d is %d",x,y,a);

getch();

return 0;

}

5. Write a program to check whether two given numbers are co-prime

numbers or not

Sol – 5.

#include<stdio.h>

#include<conio.h>

int main()

{

int x,y,i,a=1;

printf("Enter two numbers : ");

scanf("%d%d",&x,&y);

for(i=2;i<=(x>y?y:x);i++)

{

if(x%i==0&&y%i==0)

{

a=i;

break;

}

}

if(a==1)

printf("%d and %d is a set of coprime no.",x,y);

else

printf("%d and %d is not a set of coprime no.",x,y);

getch();

return 0;

}

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

Sol – 6.

#include<stdio.h>

#include<conio.h>

int main()

{

int n,i;

printf("First Prime numbers under 100 are :\n");

for(n=2;n<=100;n++)

{

for(i=2;i<=n/2;i++)

{

if(n%i==0)

break;

}

if(i>n/2)

printf("%d\n",n);

}

getch();

return 0;

}

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

Sol – 7.

#include<stdio.h>

#include<conio.h>

int main()

{

int x,y,n,i,a;

printf("Enter two numbers : ");

scanf("%d%d",&x,&y);

printf(("Prime numbers between %d and %d : \n",x,y);

for(n=(x>y?y:x)+1;n<(x>y?x:y);n++)

{

for(i=2;i<=n/2;i++)

{

if(n%i==0)

{

break;

}

}

if(i>n/2)

printf("%d\n",n);

}

getch();

return 0;

}

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

Sol – 8.

#include<stdio.h>

#include<conio.h>

int main()

{

int n,i;

printf("Enter a numbers : ");

scanf("%d",&n);

if(n==0)

printf("The next prime number is 2");

else

{

for(n+=1;n<=n\*2;n++)

{

for(i=2;i<=n/2;i++)

{

if(n%i==0)

break;

}

if(i>n/2)

{

printf("The next prime number is %d\n",n);

break;

}

}

}

getch();

return 0;

}

9. Write a program to check whether a given number is an Armstrong number

or not

Sol – 9.

#include<stdio.h>

#include<conio.h>

int main()

{

int n,temp,a,temp1,count=0,sum=0;

printf("Enter a number : ");

scanf("%d",&n);

if(n==0||n==1)

printf("%d is an armstrong number",n);

else

{

temp=n;

while(temp)

{

temp/=10;

count++;

}

temp1=n;

if(count==1||count==2)

printf("%d is not an armstrong number",n);

if(count==3)

{

while(temp1)

{

a=temp1%10;

sum=sum+a\*a\*a;

temp1/=10;

}

if(sum==n)

printf("%d is an armstrong number",n);

else

printf("%d is not an armstrong number",n);

}

if(count==4)

{

while(temp1)

{

a=temp1%10;

sum=sum+a\*a\*a\*a;

temp1/=10;

}

if(sum==n)

printf("%d is an armstrong number",n);

else

printf("%d is not an armstrong number",n);

}

if(count==5)

{

while(temp1)

{

a=temp1%10;

sum=sum+a\*a\*a\*a\*a;

temp1/=10;

}

if(sum==n)

printf("%d is an armstrong number",n);

else

printf("%d is not an armstrong number",n);

}

if(count>=6)

printf("Enter a number less than 6 digit");

}

getch();

return 0;

}

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

Sol – 10.

#include<stdio.h>

#include<conio.h>

int main()

{

int n,temp,a,sum;

printf("Armstrong number under 1000 are\n");

for(n=0;n<=1000;n++)

{

sum=0;

temp=n;

while(temp!=0)

{

a=temp%10;

sum=sum+a\*a\*a;

temp/=10;

}

if(sum==n)

printf("%d\n",n);

}

getch();

return 0;

}