**Assignment – 7**

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

**1.** **#include <iostream>**

**using namespace std;**

**int main() {**

**int n, t1 = 0, t2 = 1, nextTerm = 0;**

**cout << "Enter the number of terms: ";**

**cin >> n;**

**cout << "Fibonacci Series: ";**

**for (int i = 1; i <= n; ++i) {**

**if(i == 1) {**

**cout << t1 << ", ";**

**continue;**

**}**

**if(i == 2) {**

**cout << t2 << ", ";**

**continue;**

**}**

**nextTerm = t1 + t2;**

**t1 = t2;**

**t2 = nextTerm;**

**cout << nextTerm << ", ";**

**}**

**return 0;**

**}**

**2.** **#include <iostream>**

**using namespace std;**

**int main() {**

**int n, t1 = 0, t2 = 1, nextTerm = 0;**

**cout << "Enter the number of terms: ";**

**cin >> n;**

**cout << "Fibonacci Series: ";**

**for (int i = 1; i <= n; ++i) {**

**// Prints the first two terms.**

**if(i == 1) {**

**cout << t1 << ", ";**

**continue;**

**}**

**if(i == 2) {**

**cout << t2 << ", ";**

**continue;**

**}**

**nextTerm = t1 + t2;**

**t1 = t2;**

**t2 = nextTerm;**

**cout << nextTerm << ", ";**

**}**

**return 0;**

**}**

**3.** **#include <iostream>**

**using namespace std;**

**int main() {**

**int n, t1 = 0, t2 = 1, nextTerm = 0,k,t=0;**

**cout << "Enter the number of terms and also a number to check if it is in fibo or not: ";**

**cin >> n>>k;**

**cout << "Fibonacci Series: ";**

**for (int i = 1; i <= n; ++i) {**

**// Prints the first two terms.**

**if(i == 1) {**

**cout << t1 << ", ";**

**continue;**

**}**

**if(i == 2) {**

**cout << t2 << ", ";**

**continue;**

**}**

**nextTerm = t1 + t2;**

**t1 = t2;**

**t2 = nextTerm;**

**cout << nextTerm << ", ";**

**}**

**for(int i=0;i<=nextTerm;i++)**

**{**

**if(i==k)**

**t= 1;**

**else**

**t= 0;**

**}**

**if(t==1)**

**cout<<"FOUND";**

**else**

**cout<<"Not Found";**

**}**

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

**int main()**

**{**

**int num1 = 36, num2 = 60, hcf = 1;**

**for(int i = 1; i <= num1 || i <= num2; i++) {**

**if(num1 % i == 0 && num2 % i == 0)**

**hcf = i;**

**}**

**printf("The HCF: %d", hcf);**

**return 0;**

**}**

**5.** **#include<iostream>**

**using namespace std;**

**int main()**

**{**

**int num1, num2, hcf, i;**

**cout<<"Enter two numbers:";**

**cin>>num1>>num2;**

**for(i=1;i<=num1;i++)**

**{**

**if(num1%i==0 && num2%i==0)**

**{**

**hcf = i;**

**}**

**}**

**if(hcf == 1)**

**{**

**cout<<"CO-PRIME NUMBERS."<<num1<<" "<<num2<<endl;**

**}**

**else**

**{**

**cout<<" NOT CO-PRIME NUMBERS."<<num1<<" "<<num2<<endl;**

**}**

**return(0);**

**}**

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

**int main()**

**{**

**int i, a = 1, count;**

**while(a <= 100)**

**{**

**count = 0;**

**i = 2;**

**while(i <= a/2)**

**{**

**if(a%i == 0)**

**{**

**count++;**

**break;**

**}**

**i++;**

**}**

**if(count == 0 && a != 1 )**

**{**

**printf(" %d ", a);**

**}**

**a++;**

**}**

**return 0;**

**}**

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

**int main( )**

**{**

**int beg, end, f, temp, i, j ;**

**printf(" Enter the Begining Number : ") ;**

**scanf("%d ",& beg) ;**

**printf(" \n Enter the last Number : ") ;**

**scanf("%d ",& end) ;**

**printf(" \n Prime Numbers are :\n ") ;**

**for ( j = beg ; j <= end ; j++ ) ;**

**{**

**f = 0 ;**

**for ( i = 2 ; i < end ; i++ );**

**{**

**if ( j % i == 0 )**

**f = f + 1 ;**

**}**

**if ( f == 0 )**

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

**}**

**return ( 0 ) ;**

**}**

**8.** **#include<iostream>**

**using namespace std;**

**bool isPrime(int n)**

**{**

**if (n <= 1) return false;**

**if (n <= 3) return true;**

**if (n%2 == 0 || n%3 == 0)**

**return false;**

**for (int i=5; i\*i<=n; i=i+6)**

**if (n%i == 0 || n%(i+2) == 0)**

**return false;**

**return true;**

**}**

**int nextPrime(int N)**

**{**

**if (N <= 1)**

**return 2;**

**int prime = N;**

**bool found = false;**

**while (!found) {**

**prime++;**

**if (isPrime(prime))**

**found = true;**

**}**

**return prime;**

**}**

**int main()**

**{**

**int N = 3;**

**cout << nextPrime(N);**

**return 0;**

**}**

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

**int main() {**

**int num, originalNum, remainder, result = 0;**

**printf("Enter a three-digit integer: ");**

**scanf("%d", &num);**

**originalNum = num;**

**while (originalNum != 0) {**

**// remainder contains the last digit**

**remainder = originalNum % 10;**

**result += remainder \* remainder \* remainder;**

**// removing last digit from the orignal number**

**originalNum /= 10;**

**}**

**if (result == num)**

**printf("%d is an Armstrong number.", num);**

**else**

**printf("%d is not an Armstrong number.", num);**

**return 0;**

**}**

**10.** **#include <math.h>**

**#include <stdio.h>**

**int main()**

**{**

**int i, sum, num, count = 0;**

**printf(**

**"All Armstrong number between 1 and 1000 are:\n");**

**for (i = 1; i <= 1000; i++) {**

**num = i;**

**while (num != 0) {**

**num /= 10;**

**count++;**

**}**

**num = i;**

**sum = pow(num % 10, count)**

**+ pow((num % 100 - num % 10) / 10, count)**

**+ pow((num % 1000 - num % 100) / 100, count);**

**if (sum == i) {**

**printf("%d ", i);**

**}**

**count = 0;**

**}**

**}**