**Homework 5**

**IM/2019/066**

**G.W.S.Hasarinda**

**Q1)**

//function integerPower( base, exponent ) that returns the value of base^exponent

#include<iostream>

using namespace std;

int intergerPower(int base, int expo); //function declaration

int main()

{

int base;

int expo; //exponenet

cout<<"Input base:";

cin>>base;

cout<<"Input positive Integer for Exponent:";

cin>>expo;

while(expo <= 0)

{

cout<<"Invalid Input, input non zero positive integer again : ";

cin>>expo;

}

int val=1; //vallue of base^exponent

int integerPower(int base, int expo);

for(int i=1; expo>=i; i++)

{

val=val\*base;

}

cout<<base<<"^"<<expo<<"="<<val<<endl;

return 0;

}

**Q2)**

#include<iostream>

using namespace std;

int timedif(int totsec[]) //function declaration

{

}

int main()

{

int h; //hours

int m; //minutes

int s; //seconds

int i=1;

int time;

int totsec[3];

while(i<=2)

{

cout<<"Enter the hours time "<<i<<":";

cin>>h;

if(h > 12 || h < 0)

{

cout<<"Invalid hours.Please Enter again hours : ";

cin>>h;

}

cout<<"Enter the minutes time "<<i<<":";

cin>>m;

if(m > 60 || m < 0)

{

cout<<"Invalid minutes.Please Enter again minutes : ";

cin>>m;

}

cout<<"Enter the seconds time "<<i<<":";

cin>>s;

if(s > 60 || s < 0)

{

cout<<"Invalid seconds.Please Enter again seconds : ";

cin>>s;

}

time = (h\*60\*60 + m\*60 + s);

totsec[i] = time;

i++;

}

int secdif = 0; //Seconds between time 1 and 2

secdif = totsec[1]-totsec[2];

if(secdif <= 0)

{

secdif = secdif \* -1; //negative seconds turn to positive seconds

}

cout<<"Seconds between time 1 and 2:"<<secdif;

return 0;

}

**Q3)**

cin>>x1;

cout<<"Input Y1 : "; //point y1

cin>>y1;

cout<<"Input X2 : "; //point x2

cin>>x2;

cout<<"Input Y2 : "; //point y2

cin>>y2;

d=Distance(x1,y1,x2,y2);

cout<<"Distance Between Two Points : "<<d; //output the distance between points

return 0;

}

double Distance(double x1, double y1, double x2, double y2) //function call

{

double val;

val=sqrt((pow(x2-x1,2))+(pow(y2-y1,2)));

return val;

}

**Q4)**

//outputs the first N elements of the Fibonacci series.

#include<iostream>

using namespace std;

//recursive function

int recursive(int N) //First number of elements

{

int n1=0; //1st number

int n2=1; //2nd number

int nxtnum; //next number in the series

int i = 0; //iteration

cout<<n1<<", "<<n2;

nxtnum = n1 + n2;

while (i < N-2)

{

cout<<", "<<nxtnum; //hard code ","

n1 = n2;

n2 = nxtnum;

nxtnum = n1 + n2;

i++;

}

return 0;

}

//main function

int main()

{

int N;

cout<<"Enter the number : ";

cin>>N; //Input first number of elements of the fibonacci series

recursive(N);

}