**NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY**

(AN AUTONOMOUS INSTITUTION, AFFILIATED TO VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM, APPROVED BY AICTE & GOVT.OF KARNATAKA



**COURSE PROJECT REPORT**

on

**SERIES SUM CALCULATOR**

*Submitted in partial fulfilment of the requirement for the award of Degree of*

*Bachelor of Engineering*

*in*

*Computer Science and Engineering*

Submitted by:

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**CERTIFICATE**

This is to certify that the Course Project titled “Series Sum Calculator” is an authentic work carried out by **Deepak Trivedi(1NT18CS034) Bhola Nath Sharma(1NT18CS026) Deepak Yadav(1NT18CS035) Dhiraj Kumar(1NT18CS194)**bonafide students of **Nitte Meenakshi Institute of Technology**, Bangalore in partial fulfilment for the award of the degree of ***Bachelor of Engineering*** in COMPUTER SCIENCE AND ENGINEERING of Visvesvaraya Technological University, Belagavi during the academic year ***2019-2020.***

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**Introduction**

Series sum calculator hels a lot to students in their day to day life for solving everyday day to day problems

**Theoretical Concepts**

The code uses the principles and techniques of object oriented programming to achieve the desired result.

**Object Oriented Programming**

It is a programming paradigm based on the concept of “objects” which can contain data, in the form of fields, and code, in the form of procedures. A feature of objects is an object’s procedures that can access and often modify the data fields of the object with which they are associated.

In OOP, computer programs are designed by making them out of objects that interact with one another

**Objects and Classes**

* Classes- The definitions for the data format and available procedures for a given type or class of object; may also contain data and procedures themselves i.e. classes contain the data members and member fucntions.
* Objects- Instances of the classes.

**Features of OOP**

* Encapsulation
* Inheritance
* Polymorphism
* Abstraction

The code in the project uses Inheritance and Encapsulation techniques.

**Inheritance**

The capability of a class to derive properties and characteristics form another class is called inheritance. It is one of the most important features of OOP. It enables reusability of code. The class that inherits properties from another class is called Sub Class or Derived Class.The class whose properties are inherited by sub class is called Super Class or Base Class.

**Encapsulation**

Encapsulation is defined as the wrapping up of data under a single unit. It is the mechanism that binds together code and the data it manipulates. Other way to think about encapsulation is, it is a protective shield that prevents the data from being accessed by the code outside the shield.

**Source Code**

#include<iostream>

#include<conio.h>

#include<math.h>

using namespace std;

class base\_class

{

};

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* SINX \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//sin x=x-x^3/3!+x^5/5!- ---------

class sinx:public base\_class

{

private:

int p,j;

double n,m,sum;

public:

void convert\_1(void);

int fact\_1(int x);

void summation\_1(void);

};

void sinx::convert\_1()

{

cout<<" Please enter the value of degree.: ";

cin>>m;

n=m\*0.017453; //converting degrees to radian

}

int sinx::fact\_1(int a)

{

if(a==1)

return 1;

else

return a\*(a-1);

}

void sinx::summation\_1()

{

int j=1,p=1;

double q,sum=0;

for(;;)

{

q=pow(n,p); // data abstraction

if(q/fact\_1(p)<0.0001)

break;

else

sum=sum+j\*(q/fact\_1(p));

p=p+2;

j=j\*(-1);

}

cout<<"\n The total sum of the series of sinx is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* COSX \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//cos x = 1-x^2/2!+x^4/4!- -----------

class cosx:public base\_class

{

private:

int p,j;

double n,m,sum;

public:

void convert\_2(void);

int fact\_2(int x);

void summation\_2(void);

};

void cosx::convert\_2()

{

cout<<" Please enter the value of degree.: ";

cin>>m;

cout<<" Thanks a lot.";

n=m\*0.017453;

}

int cosx::fact\_2(int a)

{

if(a==1)

return 1;

else

return a\*(a-1);

}

void cosx::summation\_2()

{

int j=-1,p=2;

double q,sum=1;

for(;;)

{

q=pow(n,p);

if(q/fact\_2(p)<0.0001)

break;

sum=sum+j\*(q/fact\_2(p));

p=p+2;

j=j\*(-1);

}

cout<<"\n The total sum of the series of cosx is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* E^X \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//e^x=1+x+x^2/2!+x^3/3!+ -------

class power\_1:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_1(void);

int fact\_3(int x);

void summation\_3(void);

};

void power\_1::input\_1()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

int power\_1::fact\_3(int a)

{

if(a==1)

return 1;

else

return a\*(a-1);

}

void power\_1::summation\_3()

{

int j=1,p=1;

double q,sum=1;

for(;;)

{

q=pow(n,p);

if(q/fact\_3(p)>20)

break;

else

sum=sum+j\*(q/fact\_3(p));

p=p+1;

j=j\*1;

}

cout<<"\n The total sum of the series of e^x is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* E^-X \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//e^-x=1-x+x^2/2!-x^3/3!+ ---------

class power\_2:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_2(void);

int fact\_4(int x);

void summation\_4(void);

};

void power\_2::input\_2()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

int power\_2::fact\_4(int a)

{

if(a==1)

return 1;

else

return a\*(a-1);

}

void power\_2::summation\_4()

{

int p=1,j=(-1);

double q,sum=1;

for(;;)

{

q=pow(n,p);

if(q/fact\_4(p)>20)

break;

else

sum=sum+j\*(q/fact\_4(p));

p=p+1;

j=j\*(-1);

}

cout<<"\n The total sum of the series of e^-x is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* LN(1+X) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//ln(1+x)=x-x^2/2+x^3/3- ---------------

class logarithm\_1:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_3(void);

void summation\_5(void);

};

void logarithm\_1::input\_3()

{

cout<<" Please enter the value of x.: ";

cin>>n;

}

void logarithm\_1::summation\_5()

{

int p=1,j=1;

double q,sum=0;

for(;;)

{

q=pow(n,p);

if(q/p>30)

break;

else

sum=sum+j\*(q/p);

p=p+1;

j=j\*(-1);

}

cout<<"\n The total sum of the series of ln(1+x)is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* LN(1-X) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//ln(1-x)=-x-x^2/2-x^3/3- -------------

class logarithm\_2:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_4(void);

void summation\_6(void);

};

void logarithm\_2::input\_4()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void logarithm\_2::summation\_6()

{

int p=1,j=(-1);

double q,sum=0;

for(;;)

{

q=pow(n,p);

if(q/p>20)

break;

else

sum=sum+j\*(q/p);

p=p+1;

j=j\*1;

}

cout<<"\n The total sum of the series of ln(1-x)is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* TAN INVERSE X \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//tan^-1x=x-x^3/3+x^5/5- ------------------

class inverse\_1:public base\_class

{

private:

int p,j;

double n,m,sum;

public:

void convert\_7(void);

void summation\_7(void);

};

void inverse\_1::convert\_7()

{

cout<<" Please enter the value of degree.: ";

cin>>m;

cout<<" Thanks a lot.";

n=m\*0.017453;

}

void inverse\_1::summation\_7()

{

int p=1,j=1;

double q,sum=0;

for(;;)

{

q=pow(n,p);

if(q/p<0.0001)

break;

else

sum=sum+j\*(q/p);

p=p+2;

j=j\*(-1);

}

cout<<"\n The total sum of the series of tan^-1x is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (1-X)^-1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//(1-x)^-1=1+x+x^2+x^3+x^4+ ----------------

class inverse\_2:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_5(void);

void summation\_8(void);

};

void inverse\_2::input\_5()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void inverse\_2::summation\_8()

{

int j=1,p=1;

double q,sum=1;

for(;;)

{

q=pow(n,p);

if(q>100)

break;

else

sum=sum+j\*q;

p=p+1;

j=j\*1;

}

cout<<"\n The total sum of the series of (1-x)^-1is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (1+X)^-1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//(1+x)^-1=1-x+x^2-x^3+ -----------------

class inverse\_3:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_6(void);

void summation\_9(void);

};

void inverse\_3::input\_6()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void inverse\_3::summation\_9()

{

int p=1,j=(-1);

double q,sum=1;

for(;;)

{

q=pow(n,p);

if(q>100)

break;

else

sum=sum+j\*q;

p=p+1;

j=j\*(-1);

}

cout<<"\n The total sum of the series of(1+x)^-1 is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (1-X)^-2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//(1-x)^-2=1+2x+3x^2+4x^3+ ---------------

class inverse\_4:public base\_class

{

private:

int p,j,x,n;

double sum;

public:

void input\_7(void);

void summation\_10(void);

};

void inverse\_4::input\_7()

{

cout<<" Please eneter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void inverse\_4::summation\_10()

{

int p=1,j,x=2;

double q,sum=1;

j=x;

for(;;)

{

q=pow(n,p);

if(q>100)

break;

else

sum=sum+j\*q;

p=p+1;

j=x+1;

}

cout<<"\n The total sum of the series of (1-x)^-2 is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (1+X)^-2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//(1+x)^-2=1-2x+3x^2-4x^3+ --------------------

class inverse\_5:public base\_class

{

private:

int p,j,x,n;

double sum;

public:

void input\_8(void);

void summation\_11(void);

};

void inverse\_5::input\_8()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void inverse\_5::summation\_11()

{

int p=1,j,k=-1,x=2;

double q,sum=1;

j=x;

for(;;)

{

k=j\*k;

q=pow(n,p);

if(q>100)

break;

else

sum=sum+k\*q;

p=p+1;

j=x+1;

k=k\*(-1);

}

cout<<"\n The total sum of the series of(1+x)^-2 is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (1-X)^-3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//(1-x)^-3=1+3x+6x^2+10x^3+ -----------------

class inverse\_6:public base\_class

{

private:

int p,j,x,n;

double sum;

public:

void input\_9(void);

void summation\_12(void);

};

void inverse\_6::input\_9()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void inverse\_6::summation\_12()

{

int p=1,j,x=1;

double q,sum=1;

for(;;)

{

j=((x+1)\*(x+2))/2;

q=pow(n,p);

if((j\*q)>500)

break;

else

sum=sum+j\*q;

p=p+1;

x=x+1;

}

cout<<"\n The total sum of the series of(1-x)^-3 is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (1+X)^-3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//(1+x)^-3=1-3x+6x^2-10x^3+ ---------------

class inverse\_7:public base\_class

{

private:

int p,j,x,n;

double sum;

public:

void input\_10(void);

void summation\_13(void);

};

void inverse\_7::input\_10()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void inverse\_7::summation\_13()

{

int p=1,j,l,k=(-1),x=1;

double q,sum=1;

for(;;)

{

j=((x+1)\*(x+2))/2;

l=j\*k;

q=pow(n,p);

if((j\*q)>500)

break;

else

sum=sum+(l\*q);

p=p+1;

x=x+1;

k=k\*(-1);

}

cout<<"\n The total sum of the series of(1+x)^-3 is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (E^X+E^-X) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//e^x+e^-x=2(1+x^2/2!+x^4/4! ---------)

class inverse\_8:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_11(void);

int fact\_14(int x);

void summation\_14(void);

};

void inverse\_8::input\_11()

{

cout<<" Please enter the value of x.:";

cin>>n;

cout<<" Thanks a lot.";

}

int inverse\_8::fact\_14(int a)

{

if(a==1)

return 1;

else

return a\*(a-1);

}

void inverse\_8::summation\_14()

{

int p=2;

double q,sum=1;

for(;;)

{

q=pow(n,p);

if(q/fact\_14(p)>50)

break;

else

sum=sum+(q/fact\_14(p));

p+=2;

}

sum=sum\*2;

cout<<"\n The total sum of the series of(e^x+e^-x)is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* (E^X-E^-X) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//(e^x-e^-x)=2(1+x^3/3!+x^5/5!+ --------

class inverse\_9:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_12(void);

int fact\_15(int x);

void summation\_15(void);

};

void inverse\_9::input\_12()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

int inverse\_9::fact\_15(int a)

{

if(a==1)

return 1;

else

return a\*(a-1);

}

void inverse\_9::summation\_15()

{

int p=3;

double q,sum=1;

for(;;)

{

q=pow(n,p);

if(q/fact\_15(p)>50)

break;

else

sum=sum+(q/fact\_15(p));

p+=2;

}

sum=sum\*2;

cout<<"\n The total sum of the series of(e^x-e^-x)is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* LOG((1+X)/(1-X)) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//log((1+x)/(1-x))=2(x+x^3/3+x^5/5+ -------)

class logarithm\_3:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_13();

void summation\_16();

};

void logarithm\_3::input\_13()

{

cout<<" Please enter the value of x.: ";

cin>>n;

cout<<" Thanks a lot.";

}

void logarithm\_3::summation\_16()

{

int p=1;

double q,sum=0;

for(;;)

{

q=pow(n,p);

if(q/p>200)

break;

else

sum=sum+(q/p);

p+=2;

}

sum=sum\*2;

cout<<"\n The total sum of the series of ln((1+x)/(1-x))is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* LOG((1+X)\*(1-X)) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

//log((1+x)\*(1-x))=-2(x^2/2+x^4/4+x^6/6+ --------)

class logarithm\_4:public base\_class

{

private:

int p,j,n;

double sum;

public:

void input\_14();

void summation\_17();

};

void logarithm\_4::input\_14()

{

cout<<" Please enter the value of x.: ";

cin>>n;

}

void logarithm\_4::summation\_17()

{

int p=2;

double q,sum=0;

for(;;)

{

q=pow(n,p);

if(q/p>200)

break;

else

sum=sum+(q/p);

p+=2;

}

sum=sum\*(-2);

cout<<"\n The total sum of the series of ln((1+x)\*(1-x))is : "<<sum;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* MAIN FUNCTION \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

int main()

{

int choice;

sinx v;

cosx u;

power\_1 w;

power\_2 y;

logarithm\_1 z;

logarithm\_2 t;

inverse\_1 o;

inverse\_2 k;

inverse\_3 l;

inverse\_4 a;

inverse\_5 b;

inverse\_6 c;

inverse\_7 d;

inverse\_8 e;

inverse\_9 f;

logarithm\_3 g;

logarithm\_4 h;

do

{

cout<<"\n"<<'\t'<<"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<'\t'<<'\t'<<'\t'<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<" WELCOME TO THE SERIES SUMMATION CALCULATOR. "<<" \*"<<"\n";

cout<<'\t'<<"\*"<<" ----------------------------------------------"<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" series"<<'\t'<<'\t'<<'\t'<<" choice"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<"--------"<<'\t'<<'\t'<<"--------"<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" sinx"<<"----------------------"<<"1"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" cosx"<<"----------------------"<<"2"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" pow(e,x)"<<"------------------"<<"3"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" pow(e,-x)"<<"-----------------"<<"4"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" ln(1+x)"<<"-------------------"<<"5"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" ln(1-x)"<<"-------------------"<<"6"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" tan inverse x"<<"-------------"<<"7"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (1-x)^-1"<<"------------------"<<"8"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (1+x)^-1"<<"------------------"<<"9"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (1-x)^-2"<<"-----------------"<<"10"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (1+x)^-2"<<"-----------------"<<"11"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (1-x)^-3"<<"-----------------"<<"12"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (1+x)^-3"<<"-----------------"<<"13"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (e^x+e^-x)"<<"---------------"<<"14"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" (e^x-e^-x)"<<"---------------"<<"15"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" log((1+x)/(1-x))"<<"---------"<<"16"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" log((1+x)\*(1-x))"<<"---------"<<"17"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<" Exit the program"<<"---------"<<"18"<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*"<<'\t'<<'\t'<<'\t'<<'\t'<<'\t'<<'\t'<<" \*"<<"\n";

cout<<'\t'<<"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"<<"\n";

cout<<"\n Now please enter your choice : ";

cin>>choice;

switch(choice)

{

case 1:

v.convert\_1();

v.summation\_1();

break;

case 2:

u.convert\_2();

u.summation\_2();

break;

case 3:

w.input\_1();

w.summation\_3();

break;

case 4:

y.input\_2();

y.summation\_4();

break;

case 5:

z.input\_3();

z.summation\_5();

break;

case 6:

t.input\_4();

t.summation\_6();

break;

case 7:

o.convert\_7();

o.summation\_7();

break;

case 8:

k.input\_5();

k.summation\_8();

break;

case 9:

l.input\_6();

l.summation\_9();

break;

case 10:

a.input\_7();

a.summation\_10();

break;

case 11:

b.input\_8();

b.summation\_11();

break;

case 12:

c.input\_9();

c.summation\_12();

break;

case 13:

d.input\_10();

d.summation\_13();

break;

case 14:

e.input\_11();

e.summation\_14();

break;

case 15:

f.input\_12();

f.summation\_15();

break;

case 16:

g.input\_13();

g.summation\_16();

break;

case 17:

h.input\_14();

h.summation\_17();

break;

case 18:

break;

default:

cout<<"You are wrong.Please try again.";

}

}

while(choice!=18);

getch();

return 0;

}

OUTPUT







