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Online C++ Compiler.

Code, Compile, Run and Debug C++ program online.

Write your code in this editor and press "Run" button to compile and execute it.

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#include <iostream>

#include <cmath>

using namespace std;

int main()

{

cout<<endl<<"Implementing Simpson one Third rule.......................";

cout<<endl<<"Enter the function f(x): value";

int numdegree,dendegree;

int numerator[50],denominator[50];

cout<<endl<<"Enter numerator degree:";

cin>>numdegree;

cout<<endl<<"Enter denominator degree:";

cin>>dendegree;

cout<<endl<<"Enter coeffecients of numerator polynomial:";

int i=numdegree;

while(i>=0)

{

cout<<endl<<"Enter coeffecient for power(x) "<<i<<" :";

cin>>numerator[i];

i--;

}

cout<<endl<<"Enter coeffecients of denominator polynomial:";

i=dendegree;

while(i>=0)

{

cout<<endl<<"Enter coeffecient for power(x) "<<i<<" :";

cin>>denominator[i];

i--;

}

int ul,ll,interval;

cout<<endl<<"Enter upper limit:";

cin>>ul;

cout<<endl<<"Enter lower limit:";

cin>>ll;

cout<<endl<<"Enter interval value(default value is 10/Press 0 for default value):";

cin>>interval;

cout<<endl<<"Working 1........";

if(interval==0)

{

interval=10;

}

cout<<endl<<"Working 2........";

int h=(ul-ll)/interval;

int val[]={0,0};

int functionvalue[10];

int h1=h;

for(int i=0;i<interval;i++)

{

for(int t1=numdegree;numdegree-t1>=0;t1--)

{

val[0]=val[0]+(pow(h1,t1)\*numerator[t1]);

}

for(int t2=dendegree;dendegree-t2>=0;t2--)

{

val[1]=val[1]+(pow(h1,t2)\*denominator[t2]);

}

functionvalue[i]=(val[0]/val[1]);

h1=h1+h;

}

cout<<endl<<"According to Simpson One Third rule................ ";

cout<<endl<<"Formula: h/3[(y0+yn)+4\*(y1+y3+......yn-1)+2\*(y2+y4+............+yn-2)]";

int total=0,total1=0,total2=0;

total=h\*((functionvalue[0]+functionvalue[interval-1])/3);

for(int i=1;i<=interval-2;i+=2)

{

total1=functionvalue[i]+total1;

}

total1=(total1\*4\*h)/3;

for(int i=2;i<=interval-2;i+=2)

{

total2=functionvalue[i]+total1;

}

total2=(total2\*2\*h)/3;

total1=(total1\*h)/3;

total=total+total1+total2;

cout<<endl<<"Final Value is:"<<total;

cout<<endl<<"Integration Complete.......................................";

return 0;

}