TRƯỜNG ĐẠI HỌC BÁCH KHOA HÀ NỘI

VIỆN ĐIỆN TỬ - VIỄN THÔNG

BÁO CÁO THÍ NGHIỆM NGÔN NGỮ LẬP TRÌNH

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Lớp: Điện tử 03 K60

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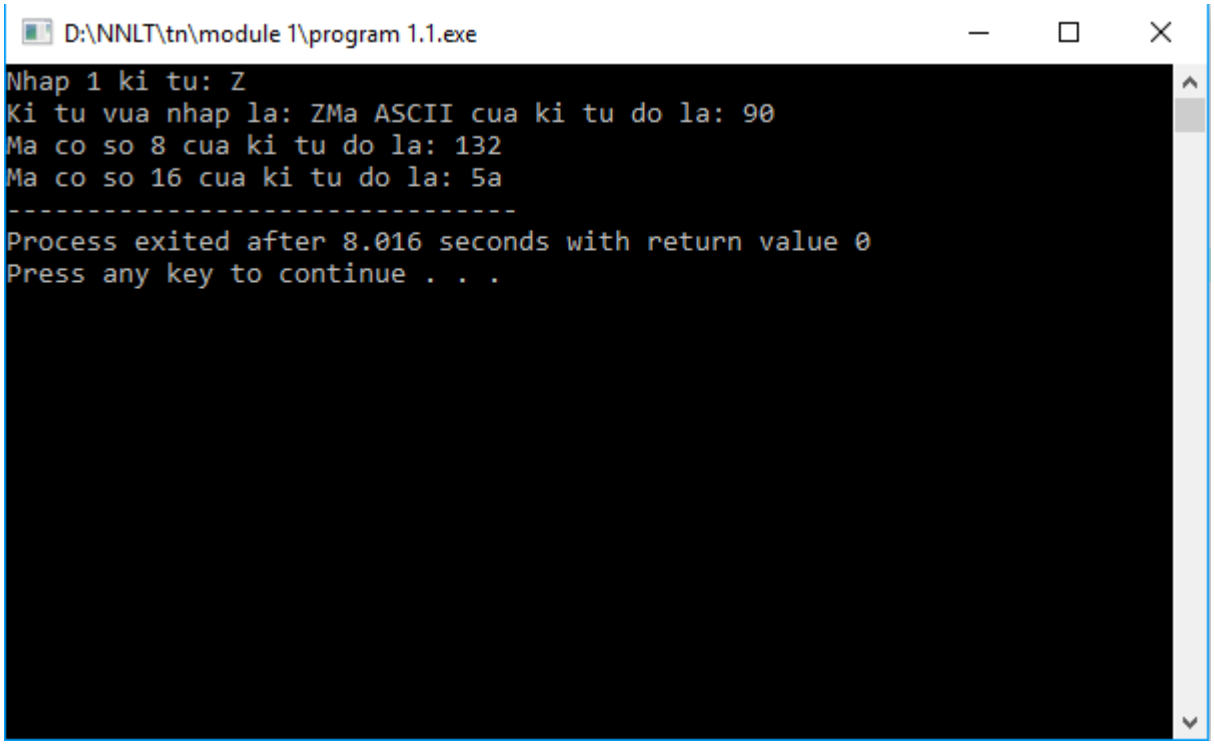
MODULE 1

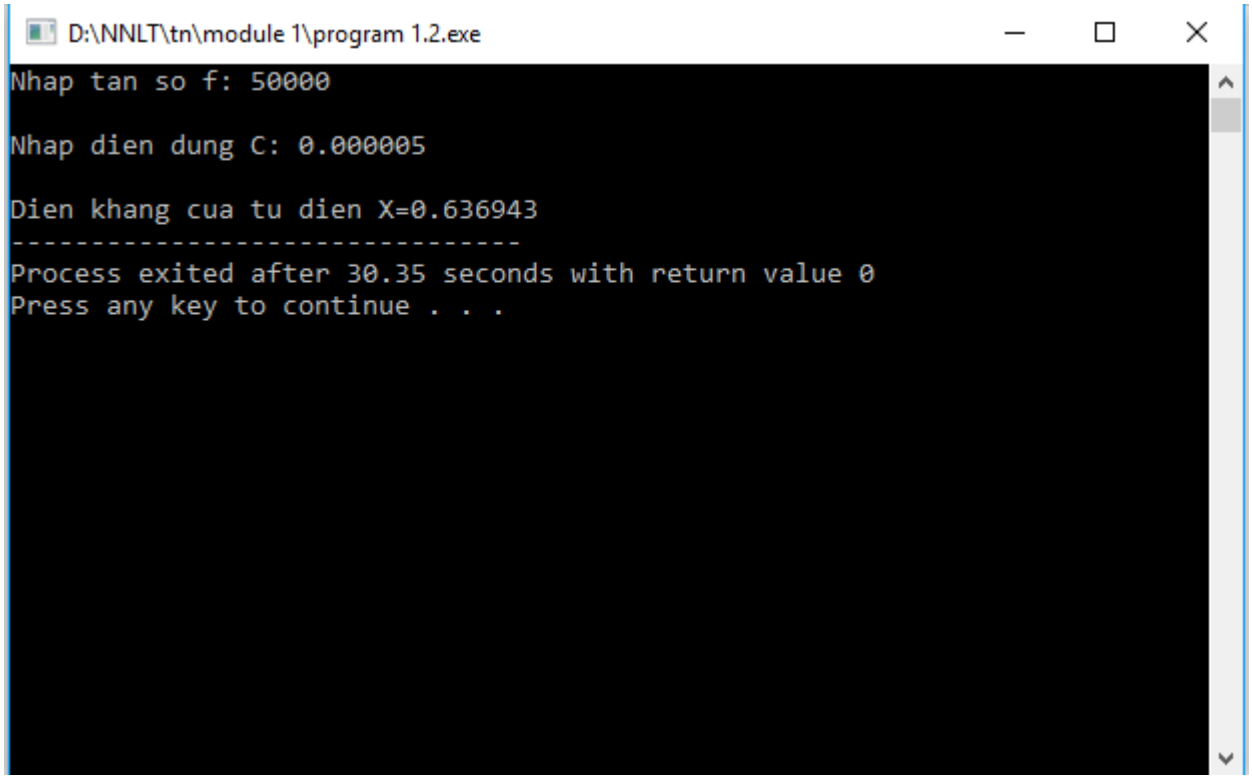
Program 1.1

```
#include<iostream>
using namespace std;

int main(){
char ch;
cout<<"Nhap 1 ki tu: ";
cin>>ch;
cout<<"Ki tu vua nhap la: "<<ch<<endl;
cout<<"Ma ASCII cua ki tu do la: "<<(int)(ch)<<endl;
cout<<"Ma co so 8 cua ki tu do la: "<<oct<<(int)(ch)<<endl;
cout<<"Ma co so 16 cua ki tu do la: "<<hex<<(int)(ch)<<endl;

system("pause");
return 0;
}
```



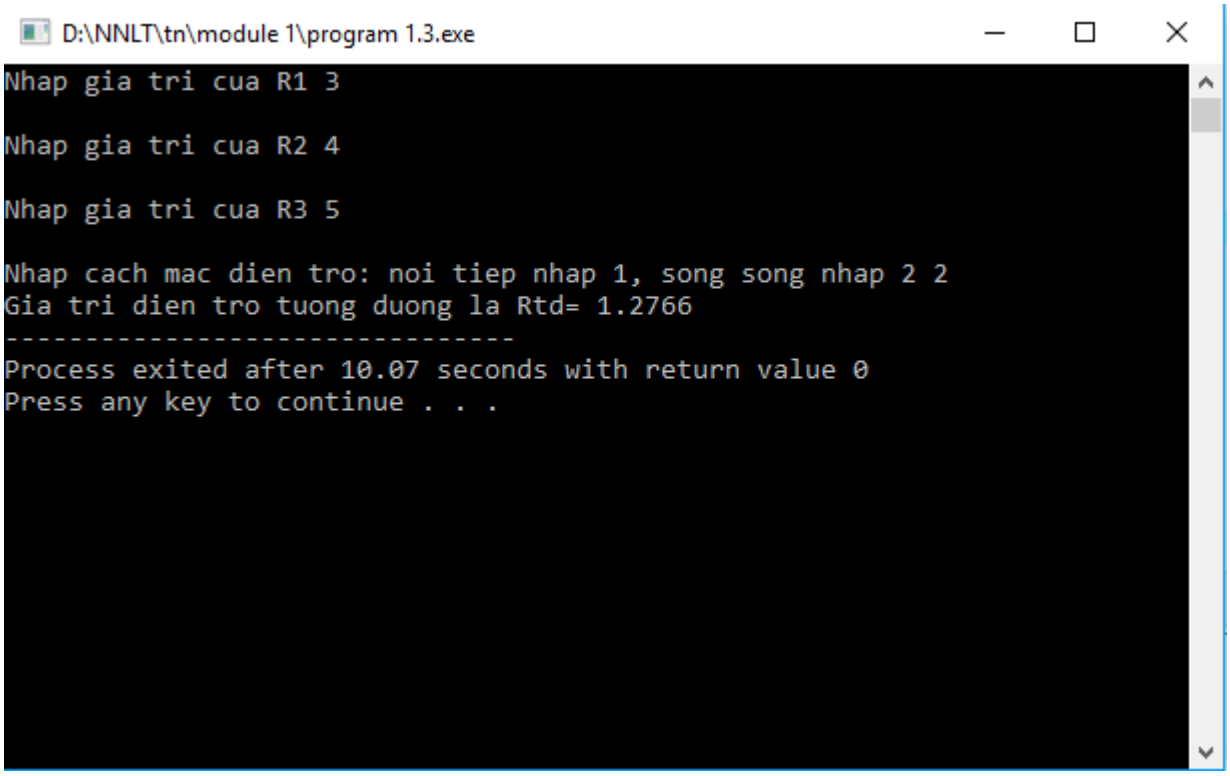
Program 1.2

```
#include<iostream>
#define PI 3.14
using namespace std;

int main(){
double f,C,X;
cout<<"Nhap tan so f: ";
cin>>f;
cout<<"\nNhap dien dung C: ";
cin>>C;
X=1/(2*PI*f*C);
cout<<"Dien khang cua tu dien X="<<X<<endl;

system("pause");
return 0;
}
```



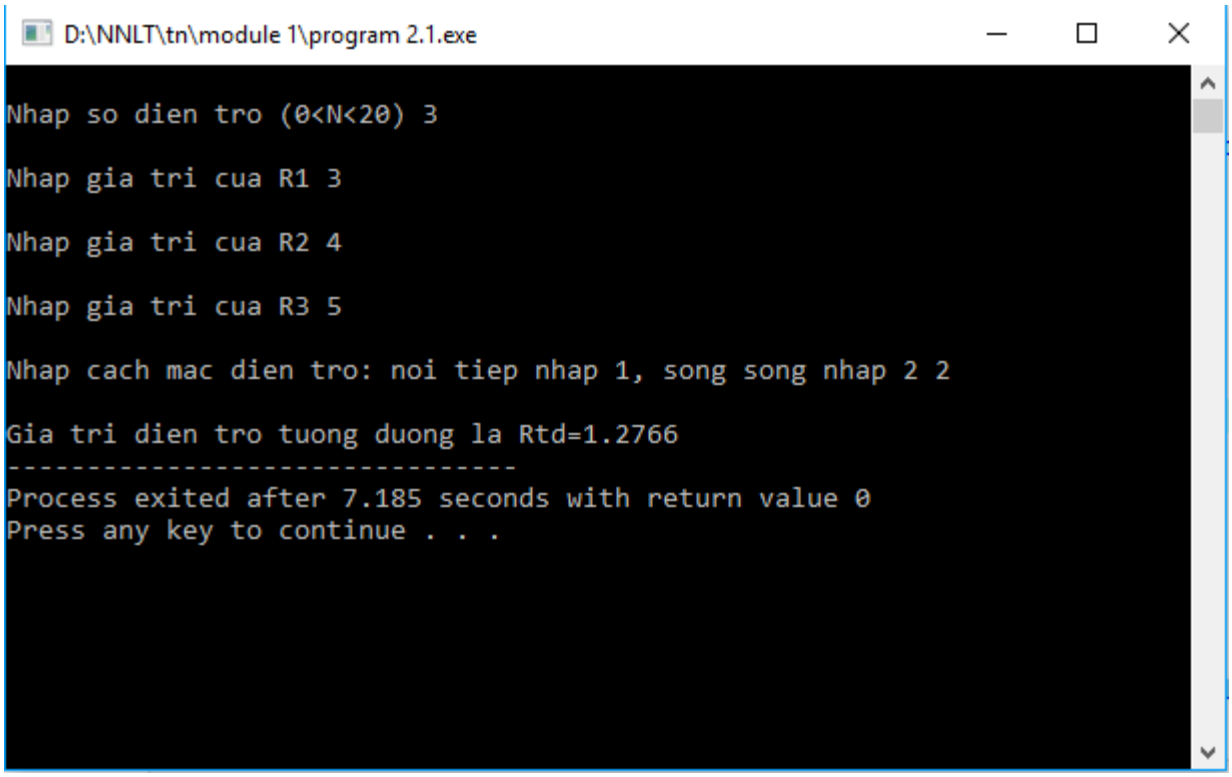
Program 1.3

```
#include<iostream>
using namespace std;

int main(){
double R1,R2,R3,Rtd;
int a;
cout<<"Nhap gia tri R1: ";
cin>>R1;
cout<<"Nhap gia tri cua R2: ";
cin>>R2;
cout<<"Nhap gia tri cua R3: ";
cin>>R3;
cout<<"Nhap cach mac dien tro\nNoi tiep: 1\nSong song: 2 ";
cin>>a;
if (a==1) Rtd=R1+R2+R3;
if (a==2) Rtd=1/(1/R1+1/R2+1/R3);
cout<<"Gia tri dien tro tuong duong la Rtd= "<<Rtd<<endl;

system("pause");
return 0;
}
```



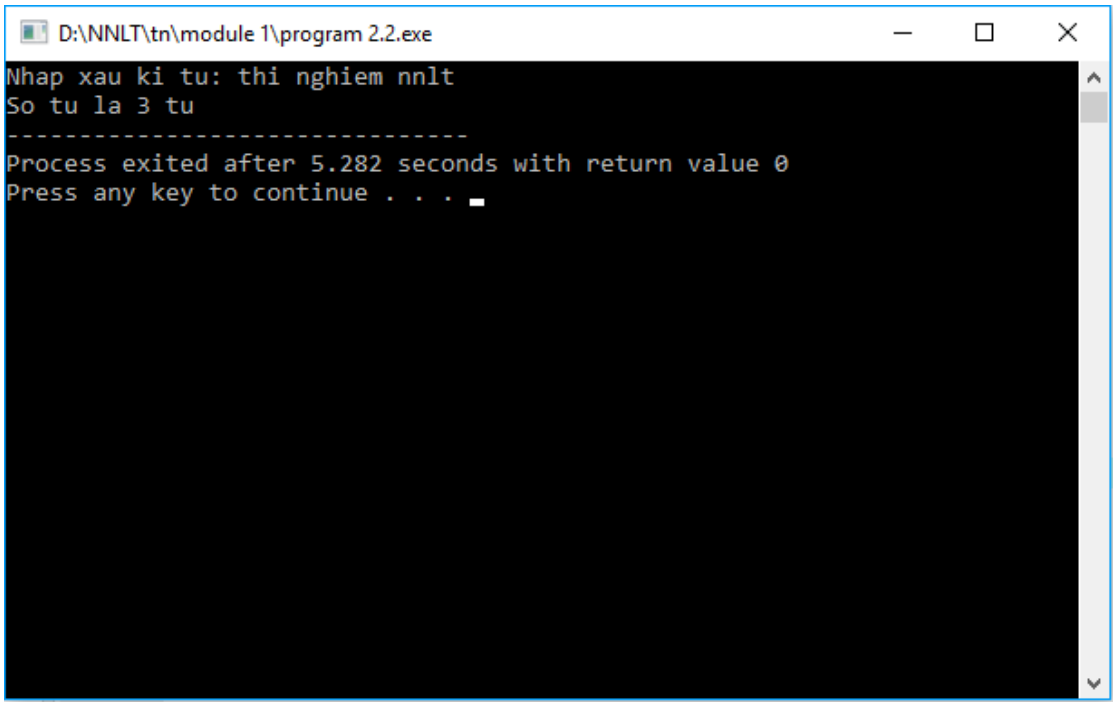
Program 2.1

```
#include<iostream>
using namespace std;

int main(){
double A[19];
int N;
do{
	cout<<"\nNhap so dien tro (0<N<20) ";
	cin>>N;
	if(N>0&&N<20) continue;
	cout<<"\nNhap lai, chi nhap 0<N<20 ";
}while(N<=0||N>=20);
for(int i=0;i<N;i++){
	do{
		cout<<"\nNhap gia tri cua R"<<i+1<<" ";
		cin>>A[i];
		if(A[i]>0) continue;
		cout<<"\nNhap lai gia tri R>0 ";
	}while(A[i]<=0);
}
int a;
do{
	cout<<"Nhap cach mac dien tro\nNoi tiep: 1\nSong song: 2 ";
	cin>>a;
	if(a==1||a==2) continue;
	cout<<"\nNhap lai, chi nhap 1 hoac 2 ";
}while(a!=1&&a!=2);
double Rtd=0, m=0;
if(a==1){
	for(int i=0;i<N;i++)
		Rtd+=A[i];
}
else {
	for(int i=0;i<N;i++){
	m+=(1/A[i]);
	Rtd=1/m;
	}
}
cout<<"\nGia tri dien tro tuong duong la Rtd="<<Rtd<<endl;

system("pause");
return 0;
}
```



Program 2.2

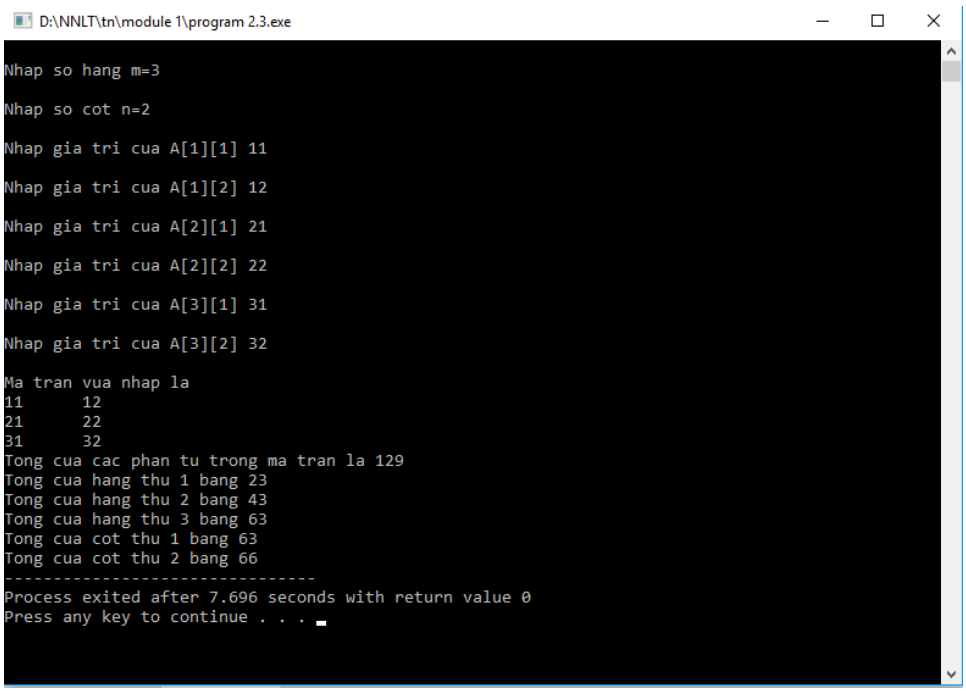
```
#include<iostream>
#include<string.h>
using namespace std;

int sotu(char s[]){
	int dem=0;
	if(s[0]!=' ') dem++;
	for(int i=0;i<strlen(s);i++)
		if(s[i]==' '&&s[i+1]!=' '&&s[i+1]!='\0')
			dem++;
	return dem;
}

int main(){
char s[200];
cout<<"Nhap xau ki tu: ";
cin.ignore();
cin.getline(s,200);
cout<<"So tu la "<<sotu(s)<<" tu"<<endl;

system("pause");
return 0;
}
```



Program 2.3

```
#include<iostream>
using namespace std;

void nhapmatran(double A[][10], int m, int n){
	for(int i=0;i<m;i++)
		for(int j=0;j<n;j++){
			cout<<"Nhap gia tri cua A["<<i+1<<"]["<<j+1<<"] ";
			cin>>A[i][j];
}
}

void inmatran(double A[][10],int m, int n){
cout<<"\nMa tran vua nhap la ";
      for(int i=0;i<m;i++){
          cout<<"\n";
          for(int j=0;j<n;j++)
            cout<<A[i][j]<<"\t";
}
}

double tongmatran(double A[][10], int m, int n){
	double tong=0;
	for(int i=0;i<m;i++)
		for(int j=0;j<n;j++)
			tong+=A[i][j];
	return tong;
}
```

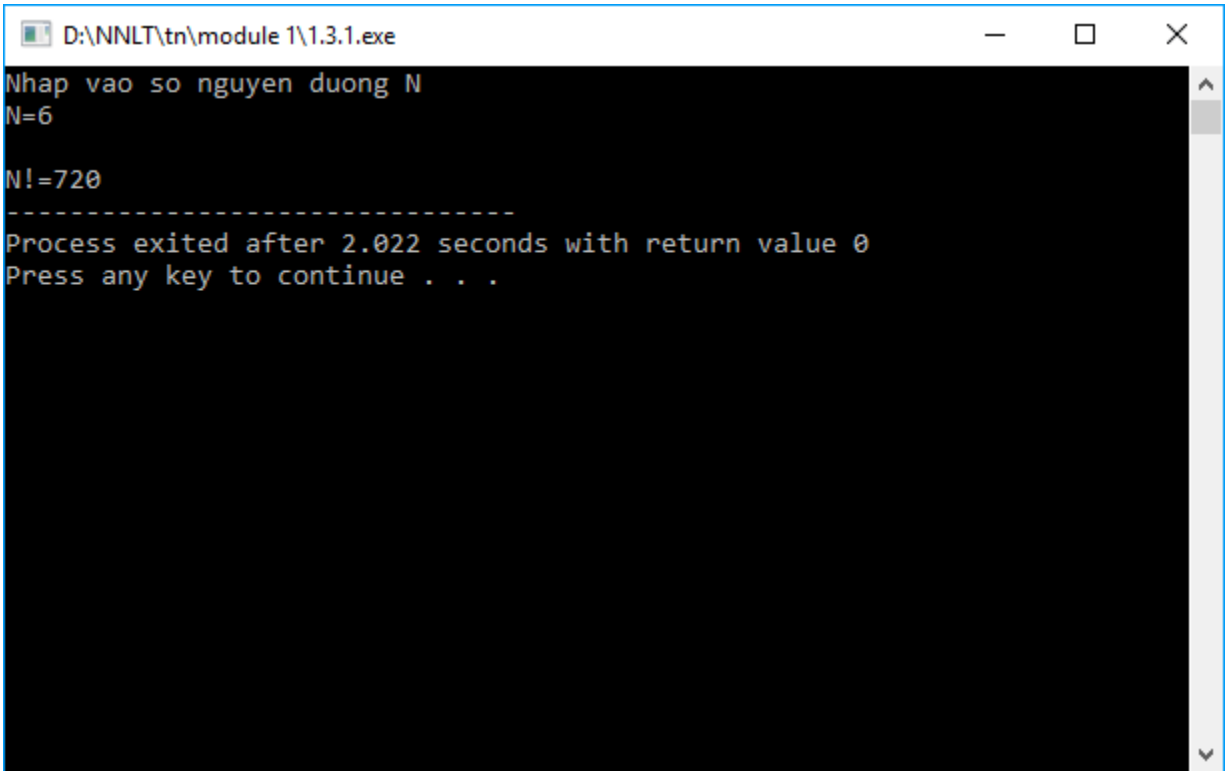
```
void tonghang(double A[][10],int m, int n){
	for(int i=0;i<m;i++){
		double tonghang=0;
		for(int j=0;j<n;j++)
			tonghang+=A[i][j];
			cout<<"\nTong cua hang thu "<<i+1<<" bang "<<tonghang;
}
}

void tongcot(double A[][10],int m, int n){
	for(int j=0;j<n;j++){
		double tongcot=0;
		for(int i=0;i<m;i++)
			tongcot+=A[i][j];
			cout<<"\nTong cua cot thu "<<j+1<<" bang "<<tongcot;
}
}

int main(){
double A[10][10];
int m,n;
cout<<"Nhap so hang m=";cin>>m;
cout<<"Nhap so cot n=";cin>>n;
nhapmatran(A,m,n);
inmatran(A,m,n);
cout<<"\nTong cua cac phan tu trong ma tran la "<<tongmatran(A,m,n);
tonghang(A,m,n);
tongcot(A,m,n);

system("pause");
return 0;
}
```



BÀI VỀ NHÀ

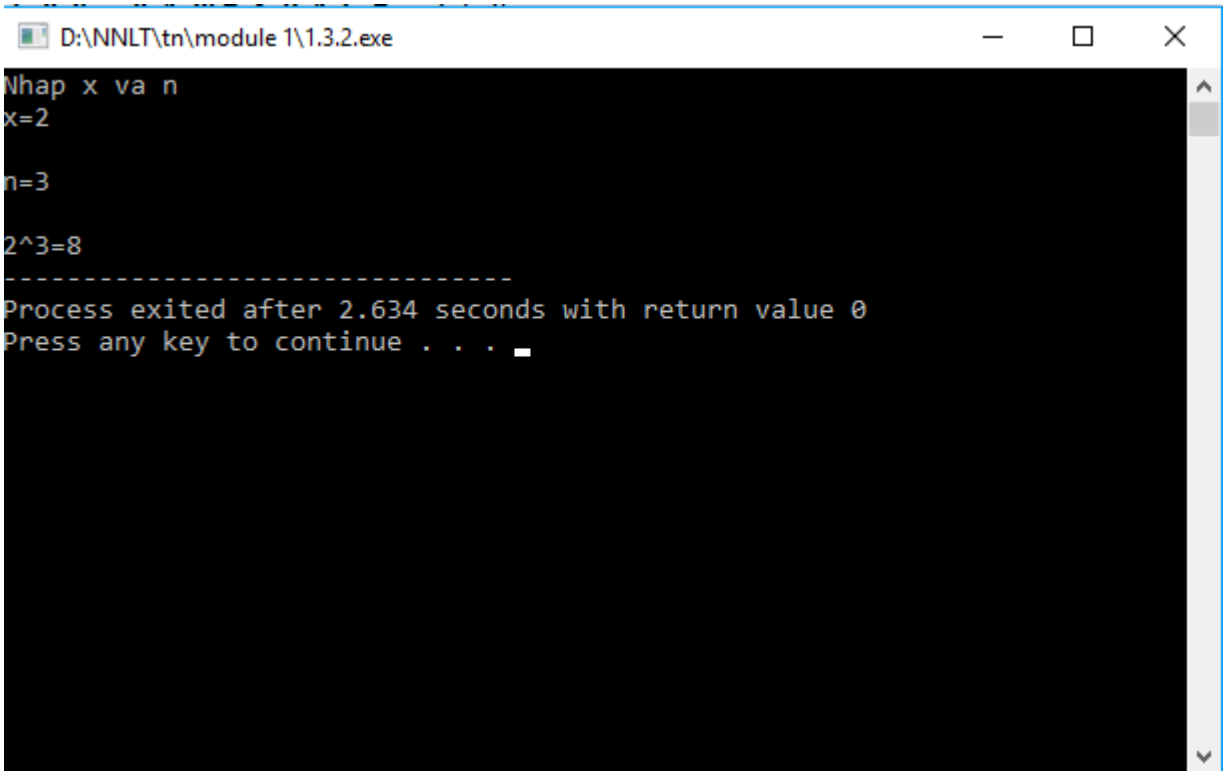
Bài 1

```
#include<iostream>
using namespace std;

int Factorial(int N){
	if(N==0) return 1;
	int gt=1;
	for(int i=0;i<N;i++)
	gt*=(i+1);
	return gt;
}

int main(){
	int N;
	cout<<"Nhap so nguyen duong N: ";
	cin>>N;
	cout<<"N!="<<Factorial(N)<<endl;

	system("pause");
	return 0;
	 }
```



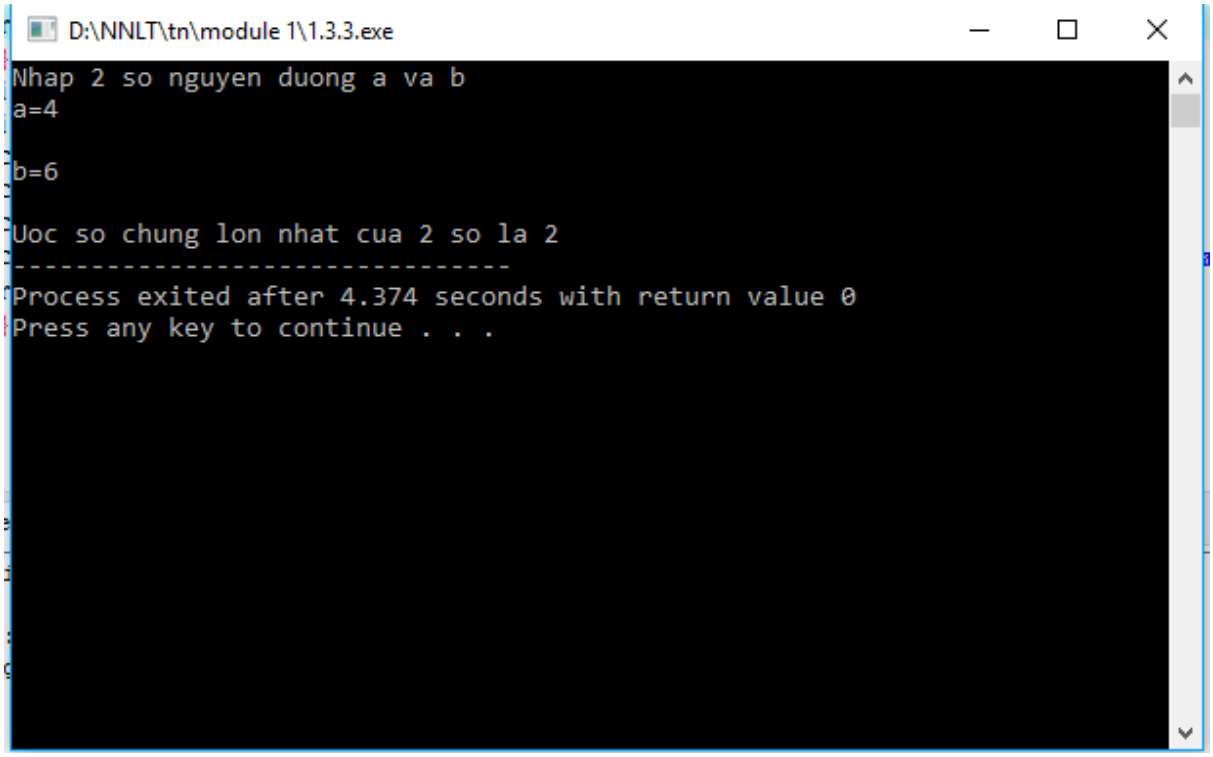
Bài 2

```
#include <iostream>
using namespace std;

double Pow(double x,int n){
if(n==0) return 1;
if (n<0) return 1.0/pow(x, -n);
else return pow(x,n-1)*x;
}

int main (){
double x;
int n;
cout<<"Nhap x: ";
cin>>x;
cout<<"Nhap n: ";
cin>>n;
cout<<x<<"^"<<n<<"="<<Pow(x,n)<<endl;

system("pause");
return 0;
}
```



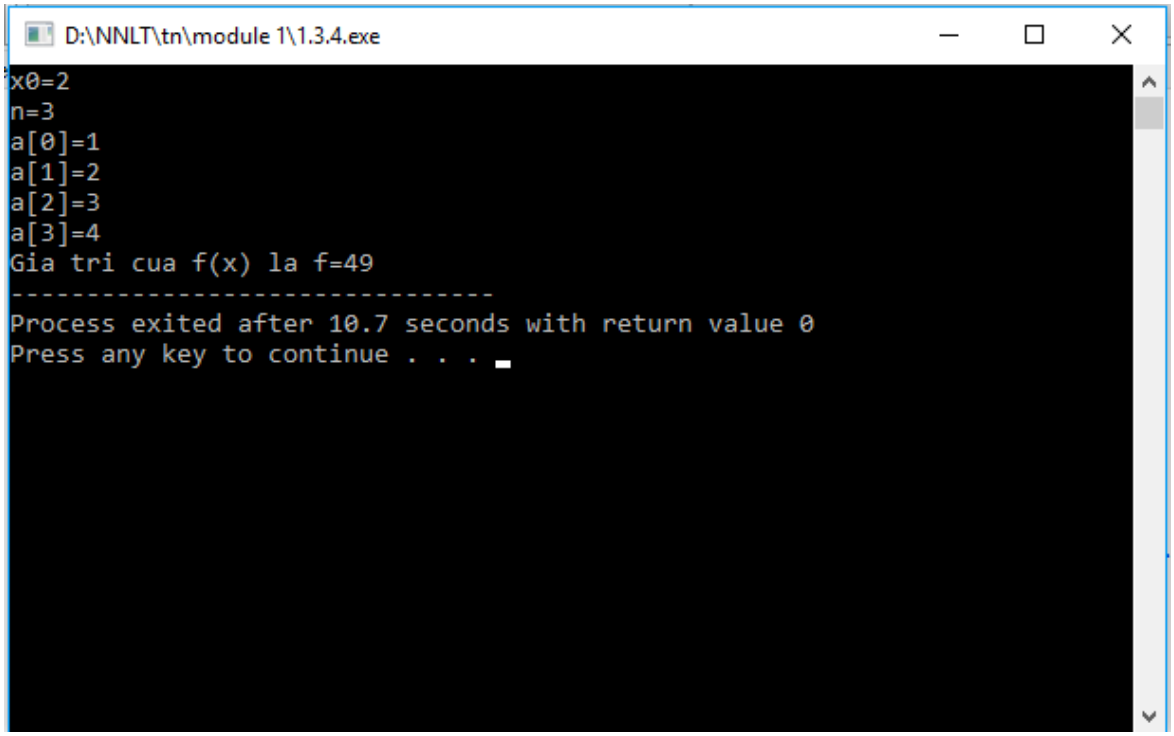
Bài 3

```
#include <iostream>
using namespace std;

int uscln(int a, int b){
if(a<b) swap(a,b);
int u;
do{
	u=a%b;
	a=b;
	b=u;
}while(u!=0);
return a;
}

int main(){
int a,b;
cout<<"Nhap a: ";
cin>>a;
cout<<"Nhap b: ";
cin>>b;
cout<<"UCLN cua 2 so la "<<uscln(a,b)<<endl;

system("pause");
return 0;
}
```



Bài 4

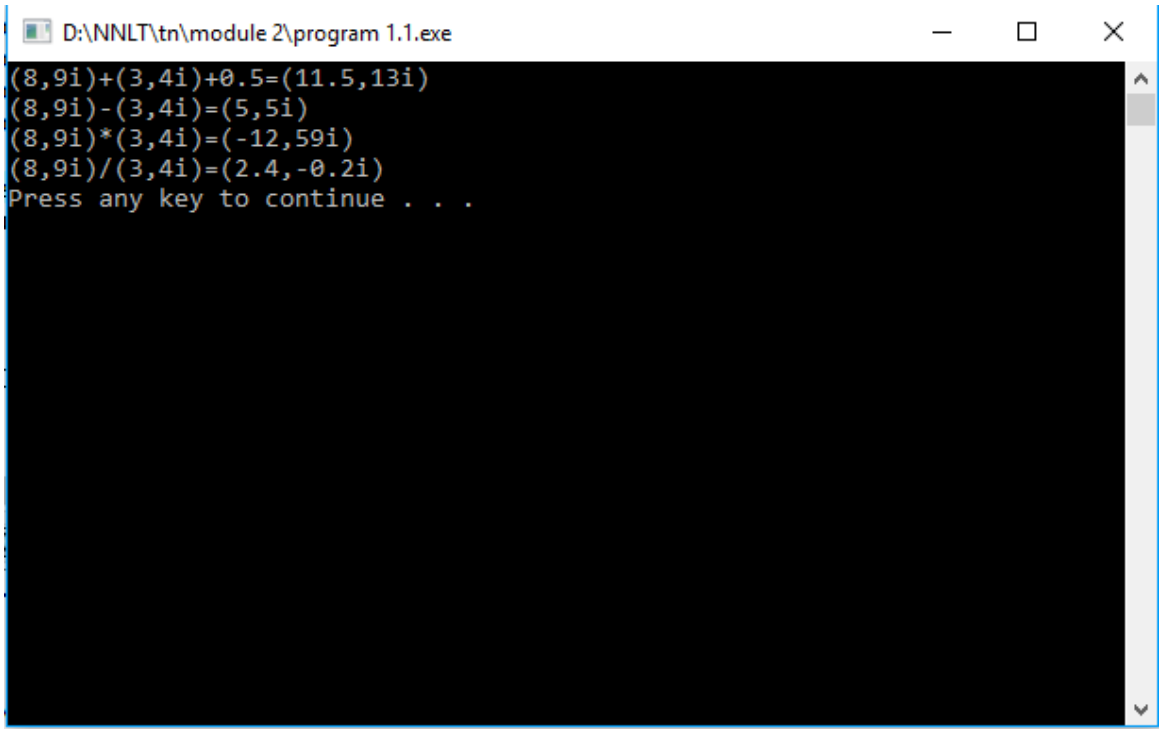
```
#include<iostream>
using namespace std;

double Value(double a[], int n, double x0){
double f=0;
for(int i=0;i<=n;i++)
f+=a[i]*pow(x0,i);
return f;
}

int    main(){
double a[100];
int n;
double x0;
cout<<"x0=";cin>>x0;
if(x0==0){
       cout<<"Gia tri cua f(x) la f=0";
       exit(0);
}
cout<<"n=";cin>>n;
for(int i=0;i<=n;i++){
       cout<<"a["<<i<<"]=";cin>>a[i];
}
cout<<"Gia tri cua f(x) la f="<<Value(a,n,x0)<<endl;

system("pause");
return 0;
}
```



MODULE 2

Program 1.1

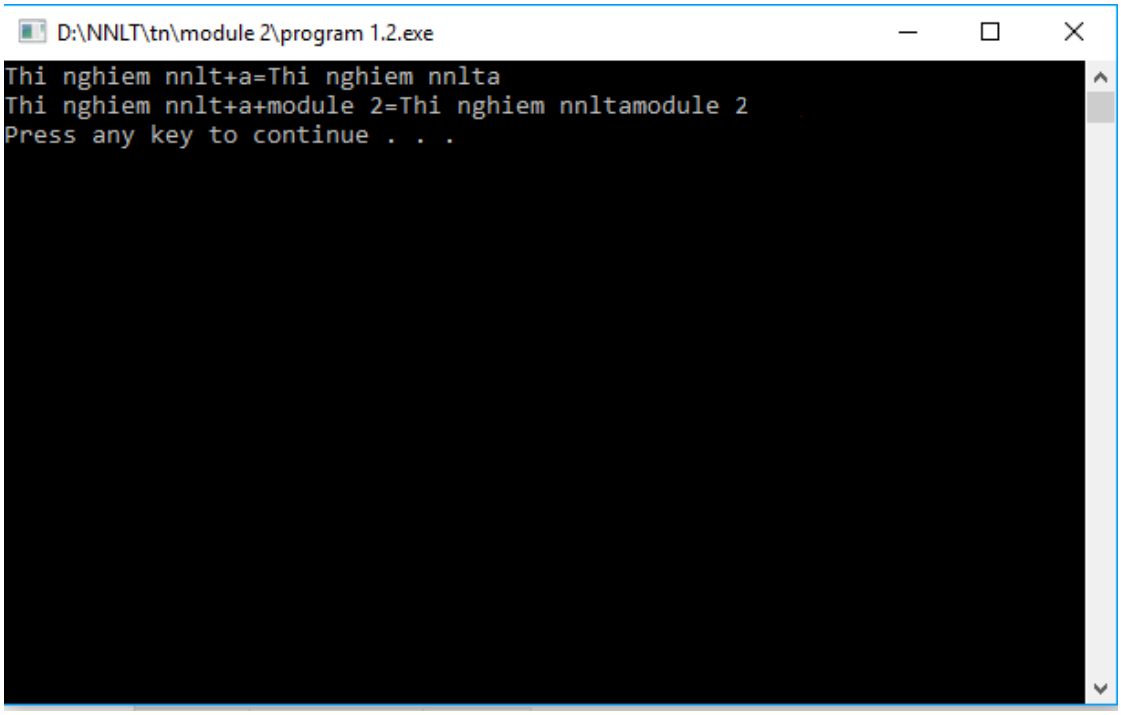
```
#include <iostream>
using namespace std;

class Complex{
private:
	double re,im;
public:
	Complex(double r=0,double i=0):re(r),im(i){}
	Complex(const Complex &c):re(c.re),im(c.im){}
public:
	Complex operator +(Complex c);
	Complex operator -(Complex c);
	Complex operator *(Complex c);
	Complex operator /(Complex c);
public:
    friend ostream& operator<<(ostream &out,Complex c){
    return(out<<'('<<c.re<<","<<c.im<<"i)");
    }
};

Complex Complex::operator+(Complex c){
return Complex(this->re+c.re,this->im+c.im);
}

Complex Complex::operator -(Complex c){
return Complex(this->re-c.re,this->im-c.im);
}

Complex Complex ::operator*(Complex c){
return Complex((this->re*c.re)-(this->im*c.im),(this->re*c.im)+(c.re*this->im));
}

Complex Complex::operator / (Complex c){
double m=c.re*c.re+c.im*c.im;
return Complex((this->re*c.re+this->im*c.im)/m,(-this->re*c.im+this->im*c.re)/m);
}

int main(){
Complex y(8,9),z(3,4);
double a=0.5;
cout<<y<<"+"<<z<<"+"<<a<<"="<<y+z+a<<endl;
cout<<y<<"-"<<z<<"="<<y-z<<endl;
cout<<y<<"*"<<z<<"="<<y*z<<endl;
cout<<y<<"/"<<z<<"="<<y/z<<endl;

system("pause");
return 0;
}
```



Program 1.2

```
#include <iostream>
#include <string.h>

using namespace std;

class String{
private:
	int length;
	char *data;
private:
	String(int length, char *data):length(length),data(data){}
public:
	String():length(0),data(new char[1]){data[0];}
    String(const char* s){
    length= strlen(s);
    data=new char[length +1];
    strcpy(data,s);
    }
    String (const String&s):length(s.length),data(s.data){}
    ~String(){delete[] data;}
public:
    int Compare(String s){
    int r=strcmp(data,s.data);
    if(r>0)return 1;
    if (r<0) return -1;
    return 0;
```

```
    }
public:
    char &operator[](int index){return data[index];}
    String&operator=(String&s);
public:
    String operator + (char c);
    String operator + (String s);
public:
    int operator == (String s);
    int operator != (String s);
    friend ostream&operator<<(ostream&out,const String&s){
    return(out<<s.data);
    }
};

String&String::operator=(String&s){
    delete[] data;
    length=s.length;
    data=new char[length+1];
    strcpy(data,s.data);
    return(*this);
}

String String::operator +(char c){
       int length =this->length +1;
    char *data =new char[length+1];
    strcpy(data,this->data);
    data[this->length]=c;
    data[length]=0;
    return String(length,data);
}

String String::operator +(String s){
    int length=this->length+s.length;
    char *data=new char[length+1];
       strcpy(data,this->data);
    strcat(data,s.data);
    return String(length,data);
}

int String::operator ==(String s){
    return strcmp (data,s.data);
}

int String::operator!=(String s){
    return(!strcmp(data,s.data));
}

int main(){
String s("Thi nghiem nnlt");
char ch='a';
cout<<s<<"+"<<ch<<"="<<s+ch<<endl;
String ss("module 2");
cout<<s<<"+"<<ch<<"+"<<ss<<"="<<s+ch+ss<<endl;

system("pause");
return 0;
}
```



MODULE 3

```
int main(){
int year, day, month;
nhapTen();
nhapNam(year);
namNhuan(year);
canChi(year);
xemThuBatKi(year,month,day);

system("pause");
return 0;
}
```