#include<iostream>

using namespace std;

void main()

{

int a = 999; // a is an integer

int\* aPtr = 0; // aPtr is pointer to an integer

// aPtr is a null pointer now...Pointing to nothing...check with aPtr = nullptr; as well

cout<<"\n\n\nAfter Initialization...\n\n";

cout<<"a =\t"<<a<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

//Pointing to specific data

aPtr = &a;

cout<<"\n\n\nAfter pointing to a ...\n\n";

cout<<"Address of a =\t"<<&a<<endl;

cout<<"Address of aPtr:\t"<<&aPtr<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

cout<<"a =\t"<<a<<endl;

cout<<"\*aPtr =\t"<<\*aPtr<<endl;

//Change the data of a and check what happens

a = 10;

cout<<"\n\n\nAfter changing a's data ...\n\n";

cout<<"Address of a =\t"<<&a<<endl;

cout<<"Address of aPtr:\t"<<&aPtr<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

cout<<"a =\t"<<a<<endl;

cout<<"\*aPtr =\t"<<\*aPtr<<endl;

//Changing data using pointer

\*aPtr = 500;

cout<<"\n\n\nAfter changing a's data using aPtr ...\n\n";

cout<<"Address of a =\t"<<&a<<endl;

cout<<"Address of aPtr:\t"<<&aPtr<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

cout<<"a =\t"<<a<<endl;

cout<<"\*aPtr =\t"<<\*aPtr<<endl;

//Take data from user and then print

cout<<"\n\n\nEnter value in a:\t";

cin>>a;

cout<<"\n\n\nAfter data input in a ...\n\n";

cout<<"Address of a =\t"<<&a<<endl;

cout<<"Address of aPtr:\t"<<&aPtr<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

cout<<"a =\t"<<a<<endl;

cout<<"\*aPtr =\t"<<\*aPtr<<endl;

cout<<"\n\n\nEnter value in \*aPtr:\t";

cin>>\*aPtr;

cout<<"\n\n\nAfter data input in aPtr ...\n\n";

cout<<"Address of a =\t"<<&a<<endl;

cout<<"Address of aPtr:\t"<<&aPtr<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

cout<<"a =\t"<<a<<endl;

cout<<"\*aPtr =\t"<<\*aPtr<<endl;

int b = 100;

//aPtr is going to point b

aPtr = &b;

cout<<"\n\n\nAfter pointing to b ...\n\n";

cout<<"Address of b =\t"<<&b<<endl;

cout<<"Address of aPtr:\t"<<&aPtr<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

cout<<"a =\t"<<a<<endl;

cout<<"b =\t"<<b<<endl;

cout<<"\*aPtr =\t"<<\*aPtr<<endl;

int\* xyzVariable = aPtr;

cout<<"\n\n\n xyzVariable ...\n\n";

cout<<"Address of b =\t"<<&b<<endl;

cout<<"Address of aPtr:\t"<<&aPtr<<endl;

cout<<"Address of xyzVariable:\t"<<&xyzVariable<<endl;

cout<<"value in aPtr =\t"<<aPtr<<endl;

cout<<"value in xyzVariable =\t"<<xyzVariable<<endl;

cout<<"a =\t"<<a<<endl;

cout<<"b =\t"<<b<<endl;

cout<<"\*aPtr =\t"<<\*aPtr<<endl;

cout<<"\*xyzVariable =\t"<<\*xyzVariable<<endl;

}