Declare and Diagram Arrays

In Main Memory - there is a stack for your process that has room for variables to be stored

25	b	.	2	5	8	12	16	

n ch1 numList [0] [1] [2] [3] [4]

numList is a **pointer** pointing at the head (beginning, first element, first slot) of the array. It contains the memory address of numList[0].
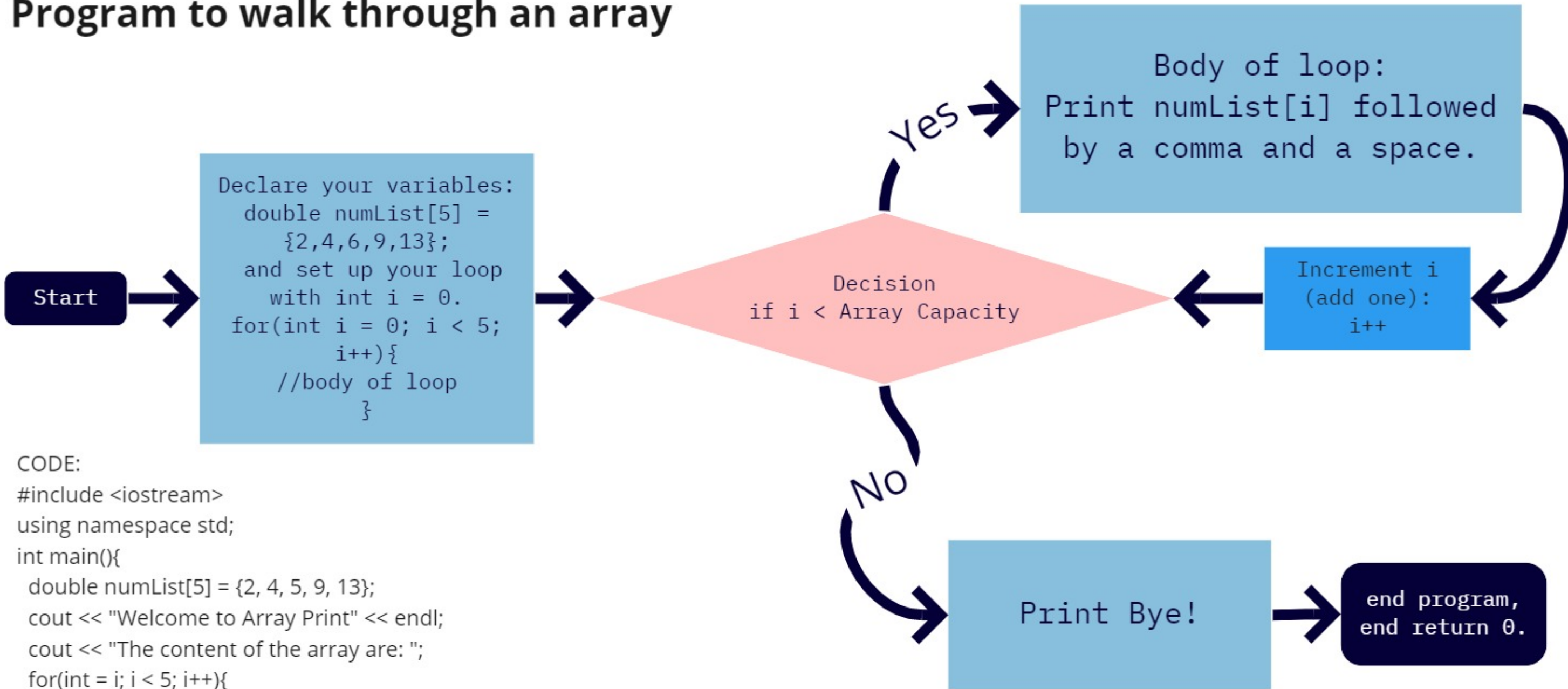
An Array is a list where each elements is the same type.
1. You have to decide the capacity (maximum size) ahead of time, but you can leave some space empty.
2. The elements/slots/spaces are accessed using [ ], starting with 0 to capacity -1.
For Example: numList[0] contains 2 and numList [4] contains 16.
3. NOTE: numList[5] is not part of the array, it is the next space AFTER the array. Because C and C++ gives YOU the control, you can print or try to assign data to locations outside the array and will be allowed (unless you are trying to access memory assigned to another process). This is called Walking on Memory.

int n = 25;

char ch1 = 'b'

double numList[5] = {2, 5, 8, 12, 16}; //an array

miro

Program to walk through an array

Start

Declare your variables:
double numList[5] =
{2,4,6,9,13};
and set up your loop
with int i = 0.
for(int i = 0; i < 5;
i++){
//body of loop
}

Decision
if i < Array Capacity

Yes → Body of loop:
Print numList[i] followed
by a comma and a space.

Increment i
(add one):
i++

No → Print Bye!

end program,
end return 0.

CODE:
```
#include <iostream>
using namespace std;
int main(){
  double numList[5] = {2, 4, 5, 9, 13};
  cout << "Welcome to Array Print" << endl;
  cout << "The content of the array are: ";
  for(int = i; i < 5; i++){
    cout << numList[i] << ", " ;
  }
  cout << endl << "Bye!" << endl;
  return 0;
}
```