



#16
DAY

C++ COMPLETE BOOTCAMP

INSPIRE CLUB, MANIT BHOPAL

D
BRINGS

C++

Complete
Bootcamp



Learn How To Apply Problem Solving Skills

Hello CPPBuddies

DAY-16

Welcome
To
C++ COMPLETE BOOTCAMP
Your Guide To A Solid Foundation in C++
Let us begin

LAST CLASS: Pointers & Memory



RECAP

DISCUSSED: POINTERS & DOUBLE POINTERS

Problem No.1

Write a C++ program that inputs
a number and prints its its
location in the memory.

Problem No. 2

Write a program to swap two
numbers

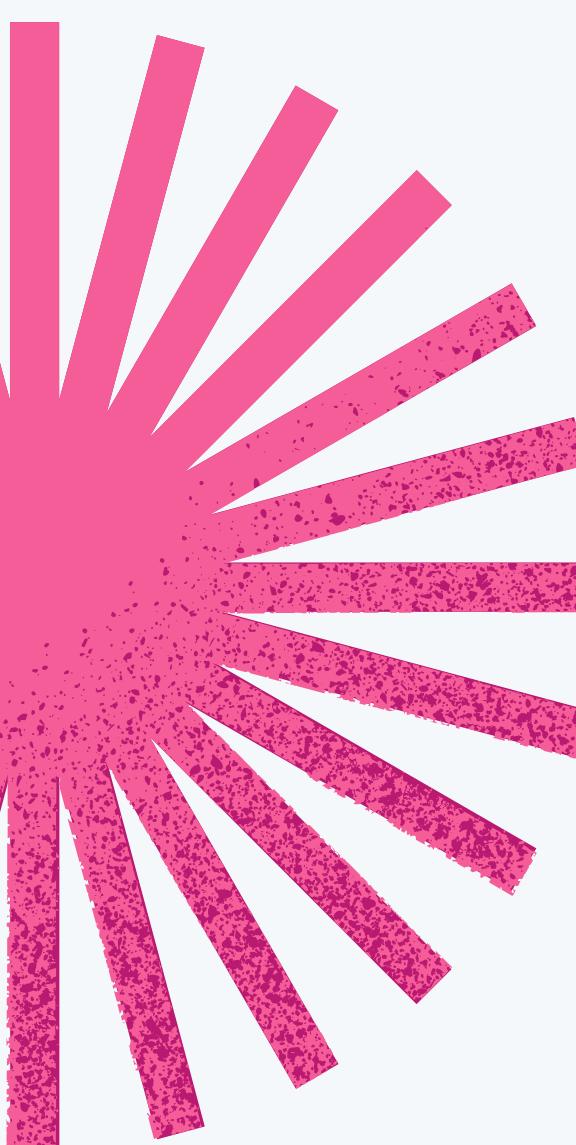
(without using pointers)

Problem No. 3

Write a program to swap two
numbers
(with pointers)

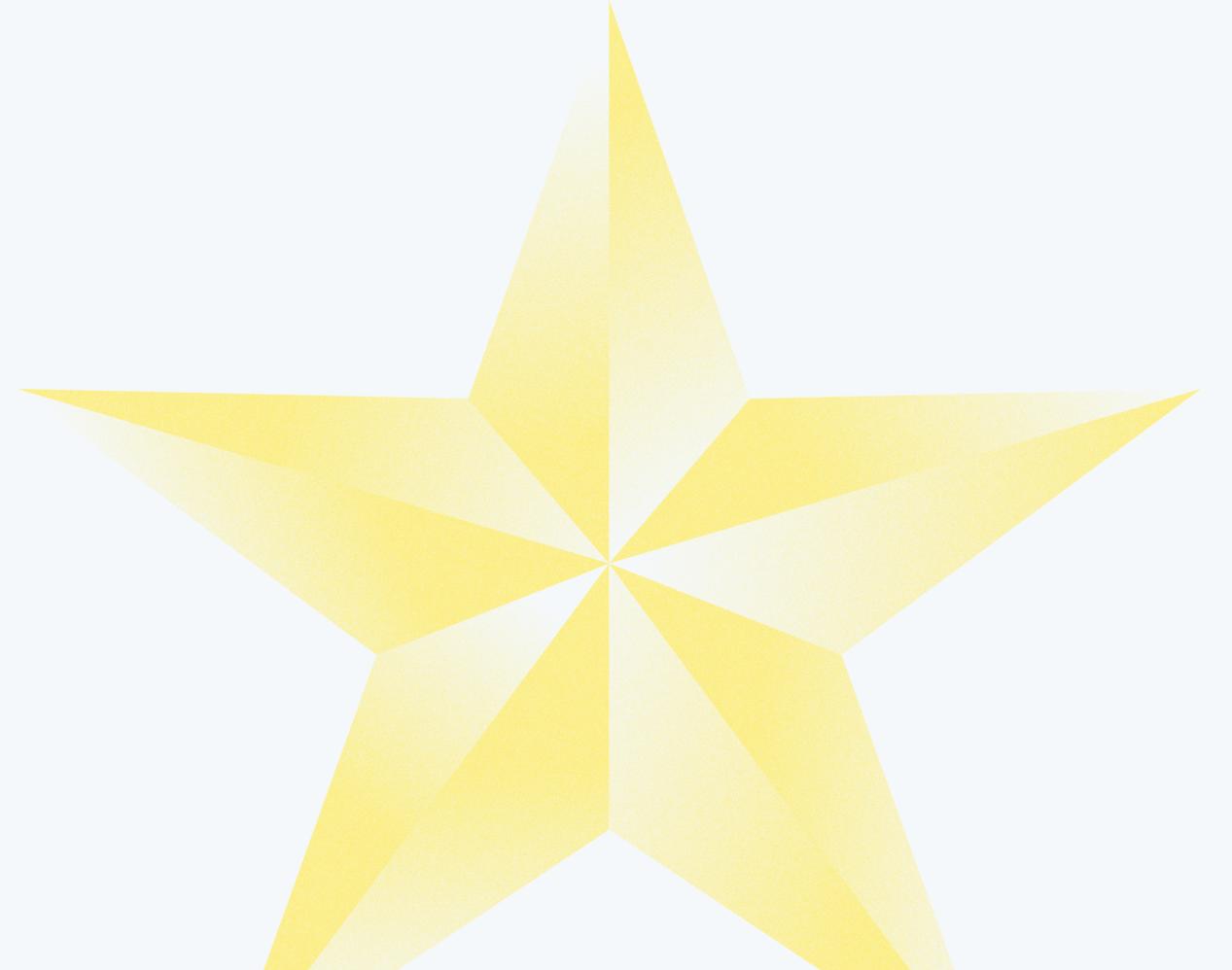
Program No. 4

Write a program to input a number and add 10 to the number using pointers.



ARRAYS

WAY TO STORE MULTIPLE DATA



DATA STRUCTURE

In-built feature of C++

**Array: fixed collection of
similar items in sequential
fashion in the memory.**

C++ provides a **data structure**, the array, which stores a **fixed-size sequential collection** of elements of the same type.

An array is used to **store a collection of data**, but it is often more useful to think of an array as a collection of variables of the same type.

All arrays consist of **contiguous memory locations**.

Declaring Arrays

To declare an array in C++, the programmer specifies the type of the elements and the number of elements required by an array as follows –

type arrayName [arraySize];

string cars[4];

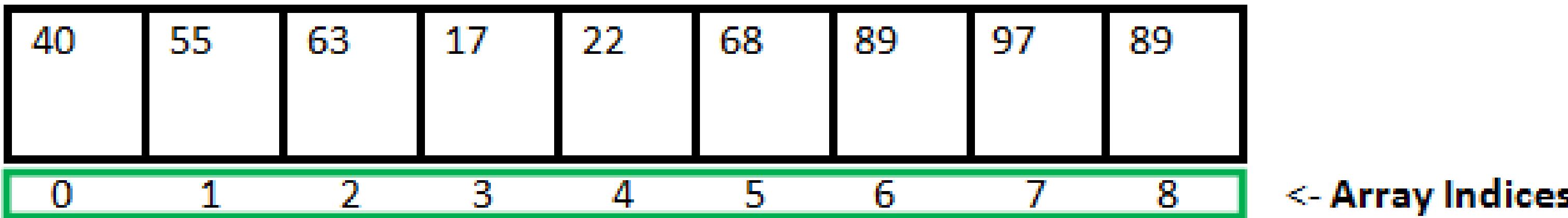
double balance[10];

To declare an array,

- define the variable type,
- specify the name of the array
(followed by square brackets)
- and specify the number of elements it should
store:

How is a 1D Array stored?

- Contiguous fashion
- Sequential
- In a order in the RAM

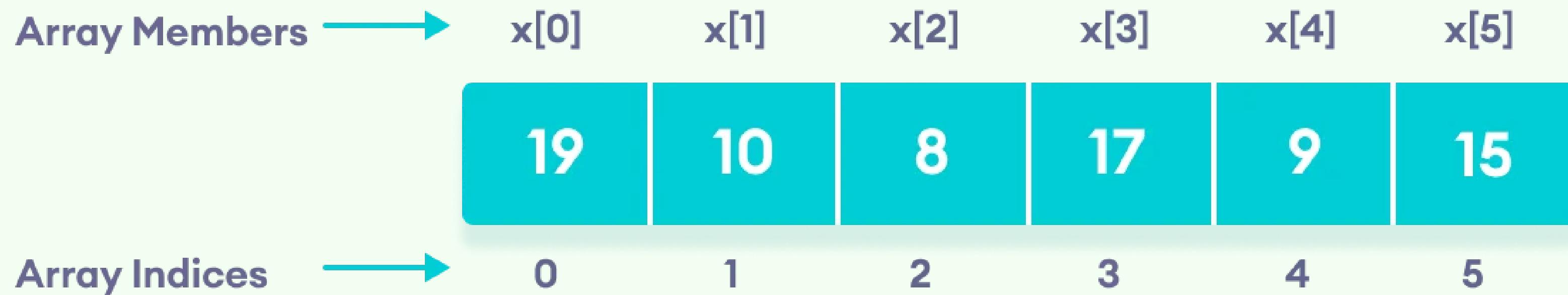


Array Length = 9

First Index = 0

Last Index = 8

Pictorial Representation



Declaration of Array

Syntax: **type name[size]**

- **string names[10];**
- **int ages[10];**
- **double salaries[10];**

Initialization of Array Members

```
string names[3];
```

```
name[0] = "ABC";
```

```
name[1] = "DEF";
```

```
name[2] = "GHI";
```

Arrays are indexed from 0.....(n-1) where n is the size

Declaration + Initialization

```
string cars[4] = {"Volvo", "BMW", "Ford", "Mazda"};
```

```
int myNum[3] = {10, 20, 30};
```

Access the Elements of an Array.

You **access** an array element by referring to the index number.

This statement accesses the value of the first element in cars:

Example

```
string cars[4] = {"Volvo", "BMW", "Ford", "Mazda"};
cout << cars[0];
// Outputs Volvo
```

Change an Array Element

To change the value of a specific element,
refer to the index number:

Example

```
string cars[4] = {"Volvo", "BMW", "Ford", "Mazda"};
cout << cars[0];
cars[0] = "Opel";
cout << cars[0];
```



DEMO

LET US SEE SOME DEMO

Program #1

**WAP to input a number N
and input those many numbers
and print them**

Program #2

**WAP to input a number N
and input those many numbers
and print their average and product.**

**ASK
DOUBTS**



THANK YOU



keep calm,
wear mask,
and
study hard



whoami

AKASH MAJI
[TCS DIGITAL]
Your Mentor