ARRAYS IN C

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ABSTRACT:- **C programming language provides a data structure called the array, which can store 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. Arrays in C act to store related data under a single variable name with an index, also known as a subscript. It is easiest to think of an array as simply a list or ordered grouping for variables of the same type.**

Index Terms— sequential collection of elements ,subscript ,fixed size, variables, arrays

I.INTRODUCTION

To declare an array in C the syntax is type arrayName [arraySize];
This is called a *single-dimensional* array. The array Size must be an integer constant greater than zero and type can be any valid C data type. For example, to declare a 10-element array called balance of type double, use this statement:

double balance[10];
Here, *balance* is a variable array which is sufficient to hold up to 10 double numbers.

II.INITIALISING ARRAY

You can initialize array in C either one by one or using a single statement as follows:
double balance[5] = {1000.0, 2.0, 3.4, 7.0, 50.0};
The number of values between braces { } cannot be larger than the number of elements that we declare for the array between square brackets [ ].
If you omit the size of the array, an array just big enough to hold the initialization is created. Therefore, if you write:
double balance[] = {1000.0, 2.0, 3.4, 7.0, 50.0};
You will create exactly the same array as you did in the previous example. Following is an example to assign a single element of the array:
balance[4] = 50.0;

III.ACCESSING ARRAYS ELEMENT

An element is accessed by indexing the array name.

This is done by placing the index of the element within square brackets after the name of the array.
        For example:
double salary = balance[9];
The above statement will take 10th element from the array and assign the value to salary variable.

IV. C ARRAYS IN DETAIL

Concept	Description
Multi-dimensional arrays	**C supports multidimensional arrays. The simplest form of the multidimensional array is the two-dimensional array.**
Passing arrays to functions	**You can pass to the function a pointer to an array by specifying the array's name without an index.**
Return array from a function	**C allows a function to return an array.**
Pointer to an array	**You can generate a pointer to the first element of an array by simply specifying the array name, without any index.**