

September 12,
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Launchpad

Lecture – 7

Multi Dimension Arrays
& Strings

Prateek Narang

Any doubts?

2 D Arrays

2 D Arrays Declaration/Initialization

- I. `int array1[2][3];`
- II. `int array2[2][3] = {{1,2,3}, {4,5,6}};`
- III. `Int array[][4] = {{1,2,3,4}, {4,5,6,7}, {8,9,10}};`
- IV. `char array3[3][2] = {{'A','B'}, {'C','D'}, {'E','F'}};`
- V. `char array4[][4] = {"abc", "def", "efg", "hig"};`

Accessing an array

- I. 2-D array can be visualized as a matrix with N rows and M Columns.
- II. First element is 0,0 and last is N-1, M-1
- III. To access jth element of ith row [considering i and j are 0 based] we can use `arr[i][j]` where arr is the name of the array.

Lets write some

- I. Wave Print
- II. Spiral Print.

Time to try?

- I. Write a program that determines which row or column in a 2d array of integers has the largest sum

How is it stored?

Depending on the architecture it could be either stored as:

- I. Column Major Form
- II. Row Major Form – Most common!

Passing 2-D arrays into a function.

- I. `void accept2D(int arr[][5])`
- II. `void accept2D(int (*arr)[5])`

Array of strings!

- I. We simulated a string by a 1-D character array.
- II. Similarly we can simulate a list of strings by 2-D character array.
- III. `char stringlist[10][100];`
- IV. Above can store max 10 strings each of maxlength 100.
- V. And each string can be accessed by `stringlist[i]`.

Initializing array of strings!

Lets see an example.

- I. Given a list of strings and word S. Check if S exists in the list or not.

Time to try?

- I. Write a program to create a matrix of alternate rectangles of O and X

For N = 5;

OOOOO

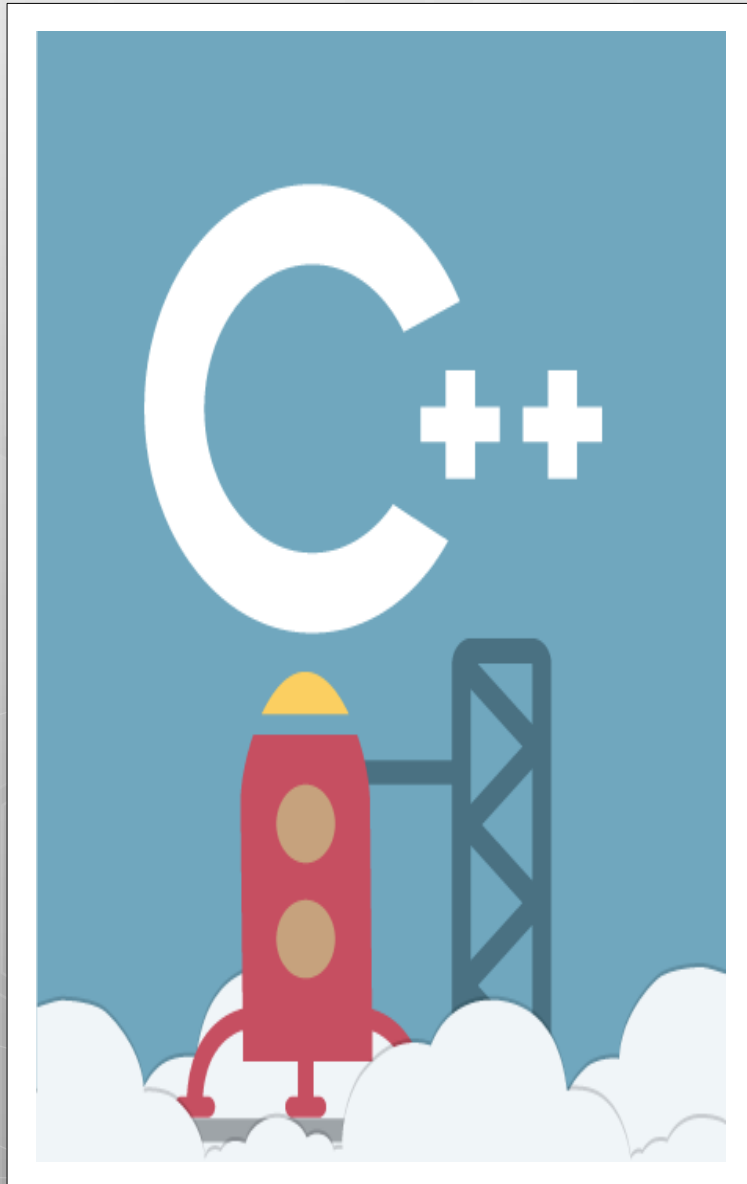
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- II. Read N words and sort them lexicographically.



Thank You!

Prateek Narang

prateek@codingblocks.com
