  
  
**Day-1**

'Beginner' Track

### Introduction to Programming

- User Input

- Output

- Loops

- Conditions

- Data Types

- Etc.

**Note**: Just go through the link, of your preferred language.

* C++: <https://www.w3schools.com/cpp/>   
  (Just go through the "C++ Tutorial" Sub-Section, as of now)
* Java: <https://www.w3schools.com/java/>

(Just go through the "Java Tutorial" Sub-Section, as of now)

* Python: <https://www.w3schools.com/python>/

(Just go through the "Python Tutorial" Sub Section, as of now)

**For running your code:**

* Good Online Editor, that might be useful: [onlinegdb.com](http://onlinegdb.com)
* IDE(s), that can be installed on your PC’s:

- VS Code

- Sublime Text Editor

- Code Blocks

**Note**: Check out Youtube Videos for more details, regarding the installation, etc. of the above IDE’s

What are Competitive Programming (CP) Contests?

CP Contests are time-bounded online individual/team competitions, in which you are given logical, algorithmic, data-structures related problems to solve within the time duration of the contest, using any programming language.

Most used Programming Languages, in Competitive Programming (CP):

C++, Java, Python

General things, in CP (which are a little different from General Programming):

1. **Fast I/O**

It is used to reduce the number of accesses to "input" and "output" streams. - A Problem to justify, why and how Fast I/O can be useful in CP: https://www.spoj.com/ problems/INTEST/

1. **Test Cases**

It is the combination of different inputs, for which you have to give the output of the problem. The different inputs (test cases) are mostly independent (sometimes, dependent) from each other.

### **Topic: 1-Dimensional Arrays**

**What are arrays?**

1. An Array is a collection of finite values/objects of the same data type.
2. Usually, represented using square brackets [ .. ]
3. For eg.:
4. [1,2,3] —> An Integer Array
5. ['a','b','c'] —> A Character Array

// Basic Programming Stuff, that should be tried on "1-D Arrays" or "Arrays"

* Declare the Array, with given Input Size
* Input the Array
* Output the Array
* Accessing a value from Array

**Note**: Just go through the link(s), of your preferred language.

* C++ : <https://www.programiz.com/cpp-programming/arrays>
* Java: <https://www.programiz.com/java-programming/arrays>
* Python: <https://pynative.com/python-accept-list-input-from-user/> ,   
   [https:// www.w3schools.com/python/python\_arrays.asp](http://www.w3schools.com/python/python_arrays.asp)

The above links will browse you through the programming aspects of 1-D arrays.

### **Topic: Strings**

A String is basically an array of characters. (For ex.: String "abc" can be seen as a character array ['a','b','c'])

It is generally bounded by double quotes, when described. (For ex.: string a = "hi") **- // Similar to Arrays**

// Basic Programming Stuff, that should be tried on ***Strings***

* Input the String
* Output the String
* Accessing a character of a String

**Note**: Just go through the link, of your preferred language.

* C++ : <https://www.w3schools.com/cpp/cpp_strings.asp>
* Java : <https://www.w3schools.com/java/java_strings.asp>
* Python : <https://www.w3schools.com/python/python_strings.asp>   
    
  The above links will browse you through the programming aspects of *Strings*.