

Competitive Programming



Coding Club
IIT Guwahati



Prerequisites

We will be organizing a contest on Hackerrank, so make sure you have created an account on the same. Apart from that you also need to have a firm grip over any programming language of your choice. (Recommended language: C++)

C++ STL

You guys are already learning C in your CS101 course. Those who don't know any other programming language, need to learn C++ STL. Basic knowledge of STL is quite handy, and in fact, necessary for competitive programming.

You can learn about C++ Standard Library from the following:

[Video](#)

[Article](#)

Greedy Approach

This is the most commonly used technique in Competitive Programming. Even though it may appear as commonsense, it is sometimes very useful to apply in programs. You may learn about it from this [video](#)



Number Theory

Another important part of CP is number theory, and recently questions based on maths and number theory have become quite frequent. A basic grasp on these topics will be very useful.

We recommend reading Chapter 21 of [Competitive Programmer's Handbook](#)

Binary Search

A very important technique. In order to master this technique, you need to practise a significant number of problems. Watch this [video](#) to learn it

Bit Manipulation

It's really necessary to know different properties of binary representation of numbers and how to perform binary operations. We recommend reading Chapter 10 of [Competitive Programmer's Handbook](#)



Dynamic Programming

A very widely used technique, DP involves a lot of practice.

You may refer the following:

Errichto ([Lecture 1](#) and [Lecture 2](#))

Competitive Programming Handbook (pg 65 to 69)

Graphs

Many programming problems can be solved by modeling the problem as a graph

problem and using an appropriate graph algorithm.

[Graph and its Representation](#)

[Depth First Search](#)

[Breadth First Search \(Optional\)](#)

Note

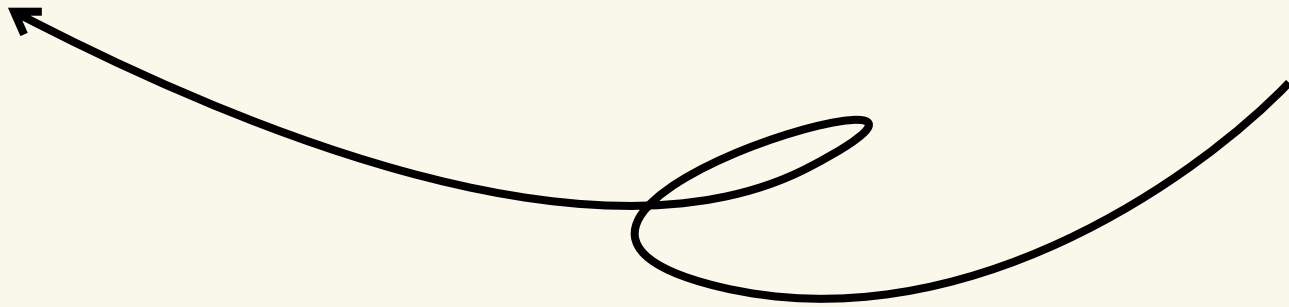
You may refer to CP.begin() if you want to learn more about these topics or solve some problems.

It is mandatory to fill this [form](#), in order to be eligible to participate in the contest



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Make sure to go through the material carefully to ensure that you perform well in the task.



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