

Sunday, 31 January  
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# Crux

## Lecture -5

Recursion

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# Doubts from Last Class ?

# Assignments ?

# Recursion

Recursion in computer science is a method where the solution to a problem depends on solutions to smaller instances of the same problem.

# Lets write some code

- Factorial
- Fibonacci
- Check if an array is sorted

## Your Turn

- Write code for a function `power(x,n)` which evaluates  $x^n$ .
- Given an array
  - Check if it contains 7
  - Find First Index of 7
  - Find Last Index of 7
  - Return an array containing all indices of 7

## BT : Heaven or Hell

You are standing before two doors. One of the path leads to heaven and the other one leads to hell. There are two guardians, one by each door. You know one of them always tells the truth and the other always lies, but you don't know who is the honest one and who is the liar. You can only ask one question to one of them in order to find the way to heaven.

## BT : Red and Blue Marbles

You have two jars, 50 red marbles and 50 blue marbles. You need to place all the marbles into the jars such that when you blindly pick one marble out of one jar, you maximize the chances that it will be red. When picking, you'll first randomly pick a jar, and then randomly pick a marble out of that jar. You can arrange the marbles however you like, but each marble must be in a jar.





# Thank You!

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