



# CRUX



# CODING BLOCKS

## Recursion

- Starting with Recursion
- Mathematical Induction

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# 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



- PrintDecreasing
- PrintIncreasing

# Your turn



- PrintDecreasingIncreasing
- PrintDecreasingIncreasing (odd decreasing, even increasing)

# Lets write some code



- Factorial
- Fibonacci
- Power(x, n)

# Lets do these problems



Given an array

- Check if it is sorted
- Check if it contains a given element
- Find FirstIndex of a given element
- Find LastIndex of a given element
- Return an array containing all indices of a given element

# Your Turn



- Recursive Bubble Sort
- Recursive Selection Sort



# Your Turn

- Recursive Pattern

```
*
*   *
*   *   *
*   *   *   *
*   *   *   *   *
```

- Recursive Pascal Triangle

```
1
1   1
1   2   1
1   3   3   1
1   4   6   4   1
```





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## Thank you

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