



Beginner's Workshop

UTPC Officers



What is Competitive Programming?

- Contest Structure
 - Range of problems from easy to hard involving implementations, data structures, and algorithms
 - Solve as many as you can while competing against other people
- Why?
 - Good way to practice data structures/algorithms
 - Improve problem-solving abilities
 - Similar skills are tested in interviews



Input/Output

- Java
 - import java.util.Scanner;
 - Scanner in = new Scanner(System.in);
 - in.nextInt(), in.nextLine(), etc.
- Python
 - input().split(" ")
- C++
 - #include <iostream>
 - cin/cout OR scanf/printf

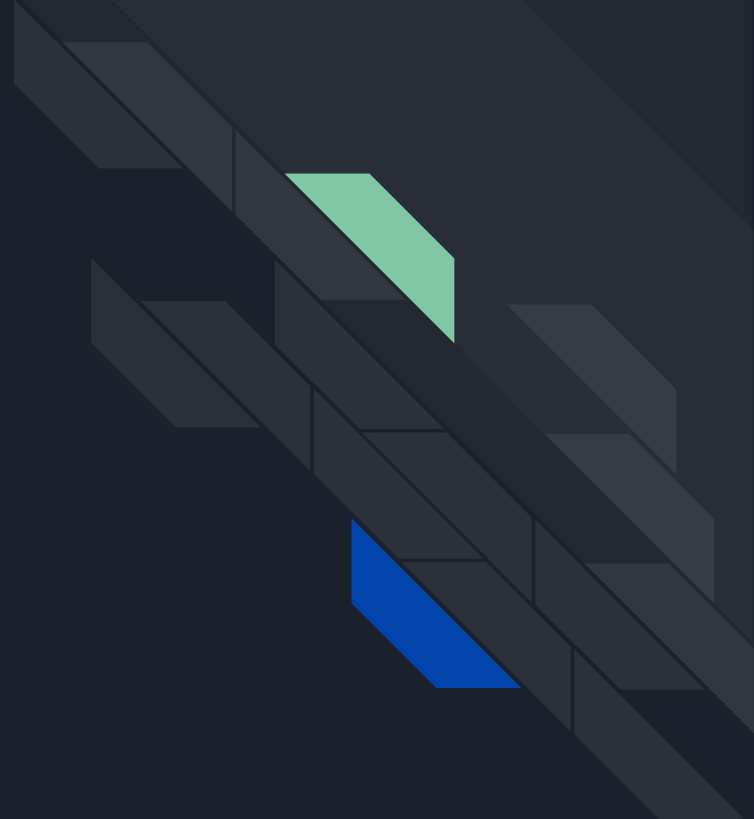
```
Scanner in = new Scanner(System.in);
int n = in.nextInt();
int[] arr = new int[n];
for(int i = 0; i < n; i++)
    arr[i] = in.nextInt();
```

```
n = int(input())
arr = [int(x) for x in input().split(" ") ]
```

```
int n;
cin >> n;
vector<int> arr(n);
for(int i = 0; i < n; i++) {
    cin >> arr[i];
}
```

Sample Problems

- [1351A - A+B \(Trial Problem\)](#)
- [1351B-Square?](#)





Tips & Tricks

- Categorize problem
- Think about bounds and valid solutions
- Feel free to skip around if stuck
- Pick one language and learn it cold
 - Some libraries (Ex. numpy) are forbidden

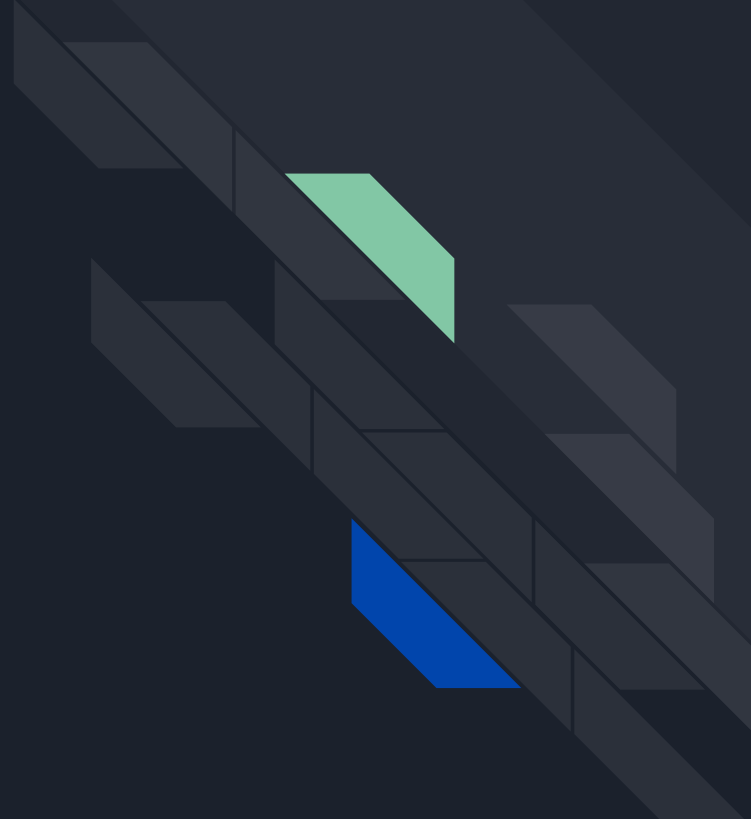


Training Resources

- USACO Problems + Training Gateway
- Hackerrank
- Codeforces
- CS104C
 - [CS104c: Competitive Programming](#)

Questions?

Don't forget to join our discord:
<https://discord.gg/hjQAveZ>.





Code Samples

- <https://pastebin.com/QQpT5hBh>
 - Java example for squares problem
- <https://pastebin.com/WwAPuWMZ>
 - Python example for squares problem
- <https://pastebin.com/Sa3ajN2s>
 - C++ example for adding integers problem