Online Judges

- Viraj Chandra

Goal

To understand:

- Online platforms like **Codeforces, Codechef & Leetcode**
- How does a contest look like? (Structure)
- How does **code judgment** work?
- How does **rank calculation** work?
- What do you mean by **rating**?
- Integrated Development Environment (IDEs)
- Discussion on **Newbie** to **Expert**

Online Judges

- **CodeForces**: https://codeforces.com/
  - Problem Set: https://codeforces.com/problemset
- **CodeChef**: http://codechef.com/
- **AtCoder**: https://atcoder.jp/
  - Practice Problems: https://kenkoooo.com/atcoder/#/list/
- **LeetCode**: https://leetcode.com/

NOTE: If you're solving random problems from these platforms, go for the **easiest ones**. Each problem also has a rating. **The lower the rating, the easier the problem is.**

CF

$$Div \, 4 \leq 1400$$

$$Div \, 3 \leq 1600$$

$$Div \, 2 \leq 2100$$

$$Div \, 1 \leq 2800$$

Code Judgements (CF)

- ✓ **AC (Accepted)** - The solution is correct, and all test cases passed.
- ✓ **WA (Wrong Answer)** - The solution produced an incorrect result for at least one test case.
- ✓ **TLE (Time Limit Exceeded)** - The solution exceeded the allowed time limit for at least one test case.
- ✓ **MLE (Memory Limit Exceeded)** - The solution used more memory than allowed for at least one test case.
- ✓ **RTE (Runtime Error)** - The solution encountered an error during execution (e.g., segmentation fault, division by zero).

Code Judgements

- **CE (Compilation Error)** - The code failed to compile.
- **IE (Idleness Limit Exceeded)** - The program performed no ~~Interactive~~ operations for a prolonged period (often due to infinite loops).
- **Skipped** - The submission was skipped due to a higher priority submission being judged (common in contests), or sometimes plagged.
- **Running on Test #** - The system is currently evaluating the solution on a specific test case.

Integrated Development Environment (IDEs)

- Online IDEs:
  - USACO IDE: https://ide.usaco.guide/
  - Repl.it (not private): https://replit.com/
  - Ideone: https://ideone.com/
  - More Online IDEs:
    https://usaco.guide/general/running-code-online?lang=cpp

Integrated Development Environment (IDEs)

- For C++ (Local IDEs) :
  - **Sublime Text** (lightweight, does not have many features)

    Link - https://www.sublimetext.com/download

Integrated Development Environment (IDEs)

- For C++ (Local IDEs) :
  - **VSCode** (has many features and plugins)

    Link - https://code.visualstudio.com/download