

# Competitive Sport Programming and Open Source Technologies

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**What is competitive sport programming? What are all the various competitions that happen all over the world?**

# Various Global Programming Competitions:

- ACM-ICPC ( International Collegiate Programming Contest )
- Google Codejam
- Facebook Hackercup
- Codechef Snackdown and many more...

# ACM-ICPC:

## Intro:

- The [ACM ICPC](#) is considered as the "Olympics of Programming Competitions". It is quite simply, the oldest, largest, and most prestigious programming contest in the world.
- The ACM-ICPC (Association for Computing Machinery - International Collegiate Programming Contest) is a multi-tier, team-based, programming competition. Headquartered at Baylor University, Texas, it operates according to the rules and regulations formulated by the ACM. The contest participants come from over 2,000 universities that are spread across 80 countries and six continents.

## Contest Structure:

- **Online Round**
- **ICPC Regional Round** ( Regional Sites: Amritapuri, Chennai, Kolkata, Kharagpur, Gwalior in India )
- **ICPC World Finals**

# ACM-ICPC:

## Eligibility:

- Enrolled in a degree program at an institution.

## Contest Format:

- It is a team contest.
- Each team should have three members and one reserve (3 + 1).
- Each team must be headed by a coach, who must be a university faculty or staff member.
- The contest can have several problems (8 to 10 in general), of varying difficulty levels and mostly being algorithmic in nature.

## More Information:

- <https://www.codechef.com/icpc>

# Google Codejam:

## Intro:

- Code Jam calls on programmers around the world to put their skills to the test by solving multiple rounds of algorithmic puzzles. The online rounds conclude in the World Finals, which rotates globally.

## Contest Structure:

- **Qualification Round**
- **Online Round 1: Sub-Round A, Sub-Round B, Sub-Round C** ( Top 1000 advance to next round )
- **Online Round 2** ( Top 500 advance to next round )
- **Online Round 3** ( Top 25 advance to Onsite Finals )
- **Onsite Finals**

# Google Codejam:

## Eligibility:

- Anyone with above 18 years can participate.

## Contest Format:

- It is a single member contest.
- The online rounds has 3 problems with two subtasks each, of varying difficulty levels and mostly being algorithmic in nature.
- The onsite finals has 5 problems with two subtasks each.

## More Information:

- <https://code.google.com/codejam/>

# Facebook Hackercup:

## Intro:

- The Facebook Hacker Cup is an annual worldwide programming competition where hackers compete against each other for fame, fortune, glory and a shot at the coveted Hacker Cup.

## Contest Structure:

- **Qualification Round**
- **Online Round 1:** ( Scoring above a certain no of pointsf )
- **Online Round 2** ( Top 200 advance to next round )
- **Online Round 3** ( Top 25 advance to Onsite Finals )
- **Onsite Finals**



# Facebook Hackercup:

## Eligibility:

- Anyone with above 18 years can participate.

## Contest Format:

- It is a single member contest.
- The online rounds has 4 problems, of varying difficulty levels and mostly being algorithmic in nature.
- The onsite finals has 6 problems.

## More Information:

- <https://www.facebook.com/hackercup/>

# Codechef Snackdown:

## Intro:

- SnackDown is a multi round programming competition open to anyone with a knack for programming. Hosted by CodeChef, the competition was started in the year 2009.
- The aim with SnackDown is to pit the finest computer programming brains from different parts of the globe against each other, under one roof in India.

## Contest Structure:

- **Online Qualifier**
- **Online Pre-Elimination Round A** ( Top 1000 advance to Elimination round )
- **Online Pre-Elimination Round B** ( Top 1000 advance to Elimination round )
- **Online Elimination** ( Top 57 advance to Onsite Finals )
- **Onsite Finals**

# Codechef Snackdown:

## Eligibility:

- Anyone with above 18 years can participate.

## Contest Format:

- It is a team competition with a maximum of 2 members in a team.
- The online rounds has 6-9 problems, of varying difficulty levels and mostly being algorithmic in nature.
- The onsite finals has 10 problems.

## More Information:

- <https://www.codechef.com/snackdown/>

**So, how do we prepare for  
such huge competitions?**

# Various Online Judges:

- Codeforces ( <http://codeforces.com/> )
- Codechef ( <https://www.codechef.com/snackdown/> )
- Topcoder ( <https://www.topcoder.com/> )
- Hackerrank ( <https://www.hackerrank.com/> )
- SPOJ ( <https://www.spoj.com/> ) and many more...

# Codechef:

## Monthly Contests:

- Long Challenge
- Cook-offs
- Lunchtimes

## CCDSAP ( Codechef Certified Data Structure and Algorithms Program):

- This certification is an assessment of proficiency in programming using Data Structures and Algorithms under a proctored environment. The certification can be used for a lifetime as it tests a candidate's grasp on subjects that are very fundamental to the field of computer science and durable; they do not change with technological advancements.

# Codeforces:

## Weekly Competitions:

- Weekly Regular Rounds
- Educational Rounds

## Structure:

- **Division 2 Contest**
- **Division 1 Contest**

## Features:

- Nice Editorials for each competition.
- Problems are categorized well.

**It's always never too early  
to start preparing :P**



**So, what are some local  
contests that will be held in  
and around CEG?**

# Sync & I++

- Intra-College
- CSE Department and IT Department
- One day
- Max 4 competitions
- September

# Abacus, ITrix, Prayatna, Samhita

- Inter-College
- CSE Department and IT Department
- Two days
- 6-8 competitions
- January & February

# K!

- CEG
- 10 Competitions (Including Online)
- Flagship event - Ninja Coding
- Huge Cashprize
- Last Week of January

# Shaastra

- IIT Madras
- 6 Competitions
- Triathlon
- High profile internships
- First Week of January

# Invente

- SSN college of Engineering
- September 21 and 22
- Visit FB page for schedule

**Let us see some of the top  
coders of the world! :D**

## Gennady Korotkevich aka Tourist

- Winner of 2013 and 2015 ACM ICPC World Finals
- Winner of 2014,2015,2016,2017,2018 Google Code Jam
- Winner of 2014 Topcoder Open
- Winner of 2014 and 2015 FB Hacker Cup





## Petr Mitrichev aka Petr

- Winner of 2006 Google Code Jam
- Winner of 2006,2013 and 2015 Topcoder Open
- Winner of 2011,2013 and 2017 FB Hacker Cup
- Won 100+ SRM Matches in TopCoder



## Harsha Suryanarayana aka HumbleFool

- Lord Harsha
- India's First RED coder in TC
- MyCodeSchool
- Took up coaching ACM ICPC Teams



# HUMBLE FOOL MEMORIAL CUP

- Starts in September
- Season ends in March or April
- 1 Local contest each month
- Royal Contest for top programmers from each Local Contest

# Local Contest

- Hosted in Hackerrank
- Normal Leaderboard
- Second week of each month
- Open for everyone

# Royal Contest

- Hosted in Codechef
- ACM ICPC Leaderboard
- End of each month
- Qualification based on Local Contest

# Team

- Ravi Kiran
- Sukin Kumar
- Ganesh
- Saravana Ganesh
- Akshay
- Vikraman

# **Open Source Technologies:**

**What is an open source software or a project?**

# List of open source softwares:

## Open Source Operating Systems:

- Ubuntu
- Debian
- Fedora
- Haiku
- FreeBSD etc...

## Open Source Programming Languages:

- Python
- R
- Java
- PHP
- Perl etc



# List of open source softwares:

## Open Source Browsers:

- Mozilla Firefox
- Chromium
- Waterfox
- Brave etc...

## Open Source Editors:

- Brackets
- Atom
- Visual Studio Code
- Light Table
- Emacs etc... and many more!!!!

**So, how do we ( students )  
can contribute to them?**

# Google Summer of Code:

## Intro:

- Spend your summer break writing code and learning about open source development while earning a stipend! Accepted students work with a mentor and become a part of the open source community. Many become lifetime open source developers!

## Structure and Application Process:

- Beginning of Registration
- Announcement of Results
- Community Bonding Period
- First Coding Period
- Second Coding Period
- Final Coding Period and Evaluations

# Google Summer of Code:

**List of open source organizations that take part in GSoC: ( Around 200 organizations )**

- The Linux Foundation
- CERN
- Python
- Mozilla
- Debian and many more...

## **Eligibility:**

- University Students, age 18 and older.

## **More Information:**

- <https://summerofcode.withgoogle.com/>

**Thank you!**

**Have a wonderful journey at CEG!**