What is Competitive Programming?

Compete McGill 2018-19

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What is Competitive Programming?

- Programming that is Competitive.

The End.

What is Competitive Programming?

- A mind sport.
- Problem Solving.
- Given a problem set, quickly come up with efficient programs to solve each problem.

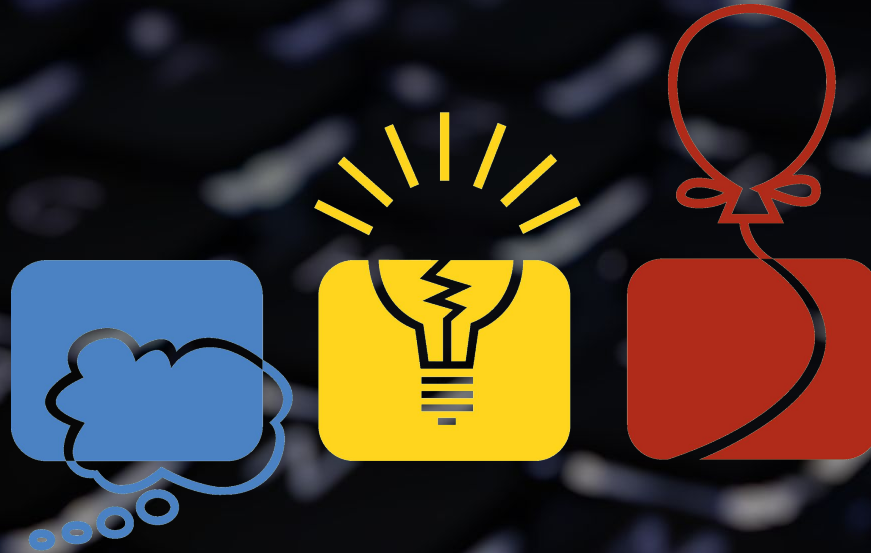# What makes a good Competitive Programmer?

- Logic Skills.
- Syntax Skills.
- Creativity.
- **Dedication!**

Some Popular Competitions

acm **International Collegiate Programming Contest**

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code jam
print "hello, world!"

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Why should I care?

- You have the potential to be **one of the best.**
- Skills learned are extremely important for any future career in CS / SE.
- **Logic Skills** that make you tackle difficult problems.
- **Syntax Skills** that make you write up programs at speeds that will make your employers say "WTF"
- **Perseverance** that will allow you to grind through extremely difficult problems in your academic and professional careers.

What should I know?

- Knowledge of one OOP language (Java, C++, [Python]) - COMP 202.
- Basic Algorithm Knowledge - what is big O, basic data structures - COMP 250.
- Intention of improving your algorithmic knowledge - taken / taking COMP 251.

How does it work?

General Member

You're casual by all meanings of the word. You want to improve your Data Structure & Algorithm skills but don't want the grind. Competing is not really all that interesting to you but simple Interview Prep Sessions are fun enough.

For You:

- Interview Prep Workshops
- Compete Socials
- General Member Newsletter

Division II Member

The thrill of Competing attracts you. You want to improve your Data Structure & Algorithm skills and break your limit! One day you want to represent McGill at the international stage, and you're ready to put in the time to get there.

For You:

- Interview Prep Workshops
- Competition Prep Workshops
- Compete Socials
- Division II Newsletter
- NP Compete (Qualify for Div I!)

Division I Member

You've ranked at the top of NP-Compete. You've shown that you're one of the best your university has to offer. You travel, representing McGill at the ACM-ICPC. Other Universities don't know what's coming.

For You:

- ACM-ICPC Representation
- Specialized Training Sessions
- NP Compete

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NPCOMPETE

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How does it work?

Event	Date
Compete Workshop #1 - Intro, Data Structures & libraries	11/1/2019
Compete workshop #2 - Problem Solving Paradigms	24/1/2019
Compete workshop #3 - Graph Traversal, Minimum Spanning Trees	5/2/2019
NP-Compete Lite	7/2/2019
Compete workshop#4 - Shortest Path, Network Flows, Special Graphs	21/2/2019
Compete Workshop #5 - String Processing	13/3/2019
Compete Workshop #6 - Computational Geometry	21/3/2019

Competitive Programming at McGill

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Rank	Name	Solved	Time	A	B	C	D	E	F	G	H	Total att/solv
1	team3	4	799	2/244	2/156	1/--	0/--	0/--	0/--	1/187	1/212	7/4
2	team9	3	567	2/54	4/251	0/--	0/--	0/--	0/--	0/--	3/262	9/3
3	team8	2	132	1/41	1/91	0/--	0/--	0/--	0/--	2/--	4/--	8/2
4	team5	2	132	2/36	1/96	0/--	0/--	1/--	0/--	0/--	3/--	7/2
5	team4	2	387	9/--	3/238	1/149	0/--	0/--	0/--	1/--	0/--	14/2
6	team6	2	435	6/182	1/253	0/--	0/--	0/--	0/--	0/--	0/--	7/2
7	team11	1	80	1/--	2/80	0/--	0/--	2/--	0/--	0/--	0/--	5/1
8	team15	1	158	1/158	0/--	0/--	0/--	0/--	0/--	0/--	4/--	5/1
9	team16	1	176	2/176	0/--	2/--	0/--	0/--	0/--	0/--	0/--	4/1
10	team10	1	241	7/241	0/--	0/--	0/--	0/--	0/--	0/--	0/--	7/1
11	team7	1	249	1/249	0/--	0/--	0/--	0/--	0/--	0/--	0/--	1/1
12	team2	0	0	3/--	0/--	0/--	0/--	0/--	0/--	0/--	0/--	3/0
12	team12	0	0	0/--	0/--	0/--	0/--	0/--	0/--	0/--	0/--	0/0
12	team13	0	0	8/--	0/--	0/--	0/--	0/--	0/--	0/--	0/--	8/0
12	team14	0	0	4/--	1/--	0/--	0/--	0/--	0/--	0/--	0/--	5/0
	Submitted/1st Yes/Total Yes			49/36/9	15/80/7	4/149/1	0/--/0	3/--/0	0/--/0	4/187/1	15/212/2	90/20

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Resources

- Competitive Programming 3rd Edition - *Steven Halim, Felix Halim*
- Introduction to Algorithms 3rd Edition - *Cormen et. Al*
- Algorithm Design - *Jon Kleinberg, Eva Tardos*
- https://uva.onlinejudge.org
- https://open.kattis.com
- http://codeforces.com/
- https://a2oj.com/
- https://www.hackerrank.com/
- https://leetcode.com/
- https://visualgo.net/en
- https://www.geeksforgeeks.org/