WELCOME TO THE ERINDALE COMPUTER SCIENCE CLUB

By: Ethan Pronev, Andrew Qi Tang

What is Competitive Programming?

Mind sport like chess.

Solves computational problem under constraints.

Generates requires participants program.

Contests

Beaver Computing Contests

CCC Series

ECOO Series

DMPG

Woburn Challenge Series (idk if they're gonna continue)

Many, many, many online contests.

Beaver Computing Contest

Hosted by CEMC (Waterloo Uni)

No past programming experience required.

Gr 9 and 10

3 part multiple choice on a school computer.

Weeks of Nov 4 and Nov 11

Registration deadline: October 23rd

CCC Series

Arguably the most important contest

Hosted by Waterloo

Two Divisions Junior/Senior

5 problems for each division worth 15 pts each

Around top 20-30 get invited to CCO

Sometime in February

ECOO Series

Team Competition

Out of school competition

Teams of 4 people

4-5 problems

3 stages (Boardwide, Regional, Provincial)

Top teams win money at Provincials

Boardwide starting in April

DMPG

Can work with a pair or solo

Out of school competition

3 Divisions (Bronze, Silver, Gold)

6 problems

Sometime in May

Online Contests

There's lots, lots and lots.

Write at home.

On an online judge (website)

Example: DMOJ, Codeforces.

Archives of thousands of problems.

Basics of Competitive Programming

Given a problem (similar to a math contest problem)

Write a program that takes the problem variables as input, and output the correct answer

Multiple test cases for each problem with different variable values each time

Example

Problem statement:

A and B are two integers with $0 \le A,B \le 100$.

Given the value of A and B, output A+B.

```
1  int A, B;   #define the variable you will use
2
3  input(A);   #take the variable as input
4  input(B);
5
6  print(A + B);   #output the sum
```

Example Problem

Your friend is thinking of an integer between 1 and 63 (inclusive).

They offer to give you money if you guess the integer are thinking of.

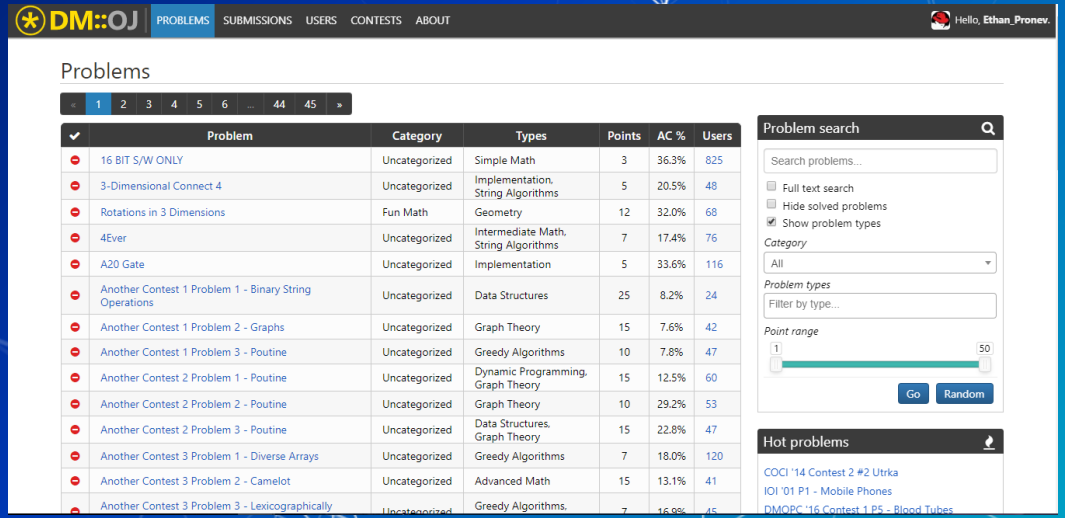
Every guess will tell you whether your guess was above or below the integer they were thinking of.

Find a strategy that uses the minimum number of guesses before you know the answer with certainty.

DMOJ

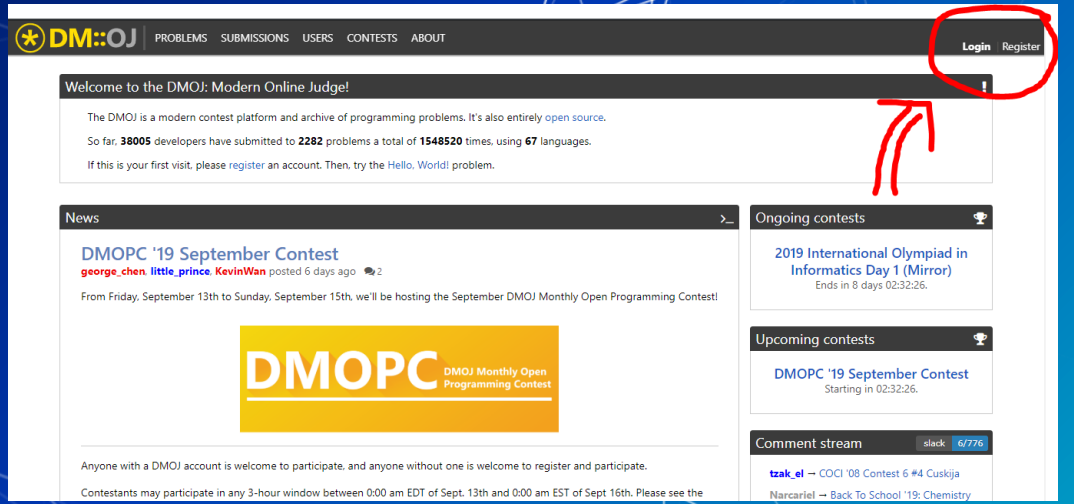
Online judge with many practice problems (including past contests)

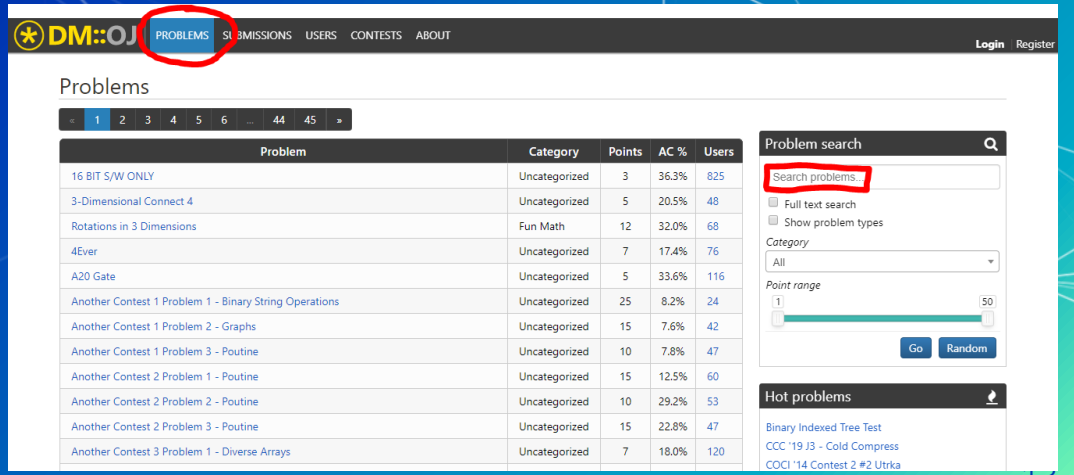
Monthly online contests



DMOJ

- Go to dmoj.ca
- Create an account
- Join Erindale S.S. Organization
- Submit to the problem titled “Hello, World!”





Extra Practice

If you want to practice submitting to dmoj, you can try the following problems.

- A Plus B
- CCC '13 J1 - Next in line
- CCC '14 J1 - Triangle Times

Temporary outline

- What is competitive programming
- Classroom code
- Intro to contests that the club will do
  - What a contest problem looks like (statement & solution)
- Logic riddles (maybe past beaver prob)
- Teach how to output
- DMOJ - how to sign up and submit, etc.
- Submit to Hello, World!
- Hw - other easy problems to practice i/o