

The North American Online Practice Contests

<http://naipc.uchicago.edu/practices>

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Practicing for a contest

There are many ways in which ICPC teams can prepare for a contest, including *practice contests*.

Running a practice contest on-site can be non-trivial and typically requires in-house expertise that new coaches/teams usually lack.

This can result in new teams not getting enough preparation to do well in real contests, which in turn may discourage them from sticking with ICPC.

The North American regions have been running online practice contests on Kattis since 2015 to address this issue.



The NA Online Practice Contests

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What is the NAIPC?

Yearly ICPC-style programming contest for the teams in the North American super-region. Takes place roughly a month before the World Finals. NAIPC 2018 took place a few weeks ago: <http://naipc.uchicago.edu/2018>

Run by volunteer ICPC-ers in North America. Hosted by the University of Chicago.

Has been running since 2012 (as an on-site contest from 2012 to 2014, online contest since 2015). Contest itself is run with Kattis.



What is the NAIPC?

One of the goals of the NAIPC is to help the top North American teams prepare for the World Finals, but also to provide a training opportunity to all North American teams.

Three divisions:

- **Invitational Division:** The top five schools in each of the eleven North American regions is invited to participate.
- **Open Division (USA + Canada):** Open to anyone in North America.
- **Open Division (Rest of the World):** Open to anyone in the world.



NAIPC Practice Contests

Consistent with wanting to provide more training opportunities to North American teams, the NAIPC ran weekly practice contests on Kattis in the weekends leading up to NAIPC 2015, using existing problem sets on Kattis.

These were well received, and we decided to run similar practices during the 2015/16 ICPC cycle, including before the North American regionals. These became the North American Practice Contests.



The North American Practice Contests

These practice contests have been running since 2015.

The scope of the practices has broadened:

They were originally intended to prepare advanced teams for the NAIPC.

Now serve as a training resource before the regionals, specially for newcomers to ICPC.



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Structure and Organization

The online practice contests are held every weekend in:

Late September to early November (before regionals)

Late January to early March/April (before NAIPC)

The take place on Saturdays (and sometimes Sundays) from 12pm to 5pm (Central time).

Run on Kattis. No prior registration is required to join a practice contest.



Structure and Organization

The schedule of practice contests is announced in advance on the following website: <http://naipc.uchicago.edu/practices/>

You can see this year's schedule there, as well as the schedules from previous years.

Contest reminders are sent to a mailing list:

<https://mailman.cs.uchicago.edu/mailman/listinfo/na-icpc-training>

This mailing list is also used to announce a variety of training opportunities to NA coaches and contestants.



Problem sets

Schedule and problem set selection is curated by volunteers, and includes:

- Existing problem sets on Kattis

- “Kattis-ified” problem sets

- Other contests (e.g., North American Qualifier)

The biggest bottleneck for organizing practice contests is problem sets.



Problem sets

To add a problem set to Kattis, it must be in the Kattis Problem Format:

<http://problemarchive.com/>

Most contests don't publish their problem sets sources in this format. Converting from arbitrary formats/packagings to the Kattis Problem Format requires considerable effort.

Consider using the Kattis Problem Format in your region! It is compatible with other CCS's and will make it easier for others to use your problem set.



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Participation Data

Number of unique participants: 959

A unique participant is someone who has made at least one submission in any practice contest.

Note: Teams on Kattis usually submit through a single user account, so the actual number of participants is likely higher.



Participation Data

Number of unique participants per practice contest

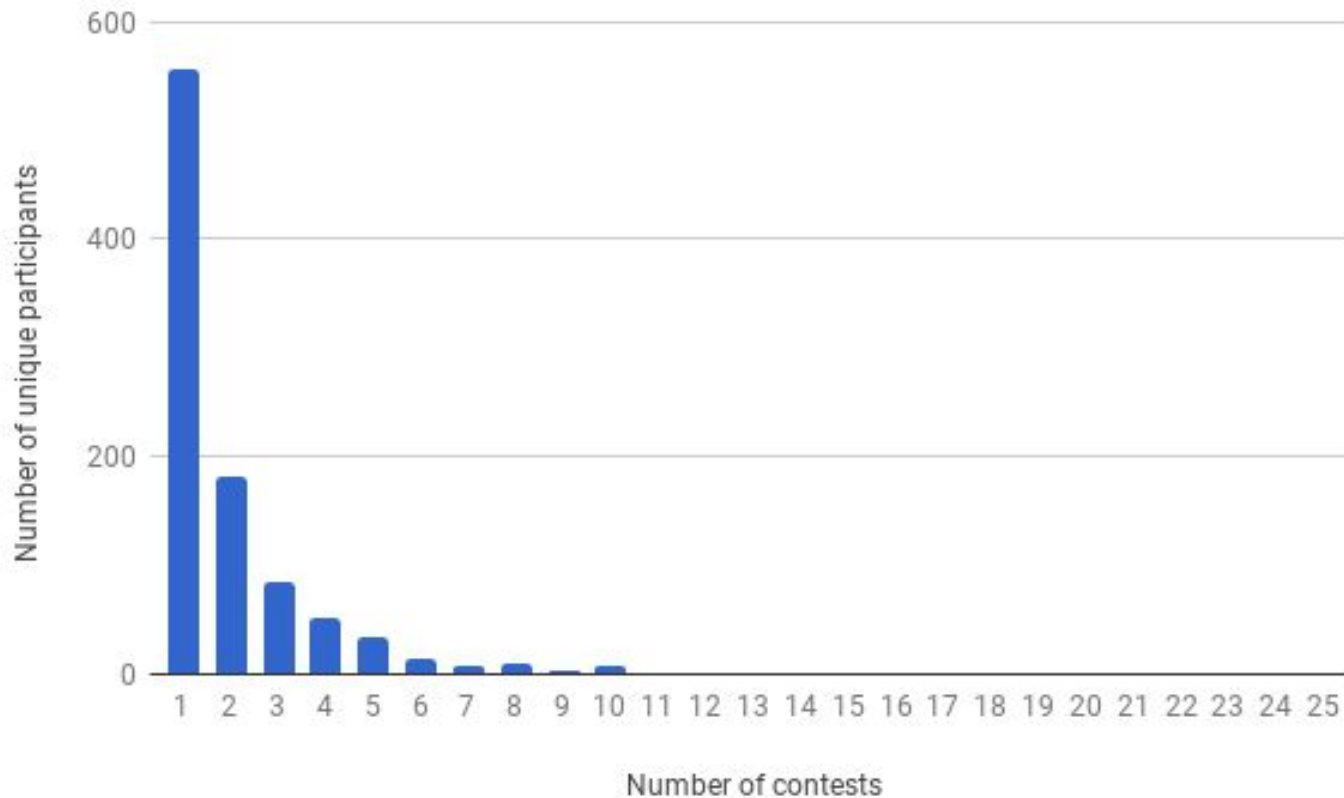
	Regionals 2015	Regionals 2016	Regionals 2017
Max	135	92	99
Upper Q	99	80	72.5
Median	38	39	45.5
Lower Q	27	32.25	22.25

	NAIPC 2016	NAIPC 2017	NAIPC 2018
Max	26	36	17
Upper Q	19	26	12.5
Median	14	10	8
Lower Q	9.5	4	4.5



Participation Data

Number of contestants that participate in N practice contests



Participant Survey

We sent a survey to the NA Training mailing list and, while there are not enough responses to draw hard conclusions, it seems that:

Most respondents find the practice contests useful

Most coaches don't require teams to participate in them, but do encourage their teams to do so.

Anecdotally, we have heard from a number of smaller schools who have told us that they find the practices very useful.



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Lessons Learned

Finding quality problem sets is easy, but converting them to the Kattis Problem Format can take a fair amount of effort.

We will all benefit if more contests publish their problem sets in the Kattis Problem Format.

Even though they originated as a training resource for advanced teams, they turned out to be most useful to beginner teams.

Other regions may want to consider providing similar practice contests as a resource.



What's next?

We have a private GitHub repository with all the Kattis-ified problem sets. We may make it public so that others can use these problem sets in their own CCS's

Figuring out how to encourage discussion of the problems after a practice contest.

It's hard to cater to all levels of experience. One possibility is to have two "divisions" in the practice contests.



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Questions?

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