

Intro to Senior Computer Team

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1 Overview

Welcome to Senior Computer Team! We participate in multiple contests, but we focus mainly on algorithmic problem solving, as best example of which being USACO. We welcome people of all levels of experience, talent, and knowledge. It is called Senior Computer Team, underclassmen make up a large part of the team each year. No matter how much you already know, we'll try to help you improve as much as possible.

2 Important Things and People

- Sponsor: Mrs. Kim (nhkim@fcps.edu)
- Captain: Nick Haliday (nick.haliday@gmail.com)
- Co-Captain: Ryan Jian (cheese.and.smarticals@gmail.com)
- Co-Captain: Owen Hoffman (theowenhoffman@gmail.com)
- Statistician: Eric Tao (ericthecmh@gmail.com)

The website is at <https://activities.tjhsst.edu/sct>. There you can find PDFs of the lectures, the grader where you can practice on old problems and also compete in SCT's in-house contests, and a calendar that's not up-to-date right now but will eventually contain a list of competitions and other events. We'll also put up a lecture schedule at some point. We'll post some news on the website, but besides what I've already mentioned, most information will be announced through the mailing list. You can sign up for that at <https://lists.tjhsst.edu/cgi-bin/mailman/listinfo/scteam>. We also have a Facebook group (TJ Senior Computer Team), which is used for announcements that aren't essential or likely to interest most computer team members.

3 Schedule

SCT meets every Friday during B block. The typical meeting will be spent on lectures on USACO and CS-related topics, but we'll occasionally spend a block, going over a contest, solving problems (possibly with candy rewards), or doing something more unusual and fun. We're planning on having more in-house contests this year, and these will be the most common non-lecture activity. Contests will usually start during A or B block Friday and run until 6 PM, including time to discuss problems and eat. We may also have some contests on Mondays to allow for lectures or some other activity during the regular meeting time.

4 Contests

4.1 USACO

The USA Computing Olympiad is by far the most important contest we compete in. The USACO holds 7 online programming competitions held over a weekend each month from October through April and mostly taken at home. Competitors are placed into three divisions (Bronze: beginner, Silver: advanced, and Gold: genius) based on skill level but can work their way up to the elite Gold division by performing well on contests. At the end of the year, top high school competitors in the Gold division are chosen to attend the invitational camp in South Carolina. This is very fun and you get the chance to meet programmers from around the country! You should all aim to qualify for this camp. For these contests, you may use C, C++, Java, or Pascal. Everyone should participate!

- <http://train.usaco.org> Register now! The USACO Training Pages are the best available online resource for learning your algorithms and are great preparation for USACO and computer science in general.
- <http://www.usaco.org> The portal for USACO contests. It got a new interface last year, but the training pages still aren't well integrated into the new website.

4.2 ACM-Style Contests

Both of these contests allow us to send a four-person team, chosen based on US- ACO performance and grader rankings. During the contest the team members work together to solve programming challenges. No person will attend both. Java is the primary language.

- UMD HSPC The University of Maryland High School Programming Contest is a contest to be held on Saturday, April 21st, at UMD.
- VCU HSPC The Virginia Commonwealth University High School Programming Competition is a contest to be held in March, at VCU, on a Friday. TJ also traditionally sends a freshman and intermediate team to this competition.

4.3 NACLO

The North American Computational Linguistics Olympiad is a two-part exam used to select people to represent the United States at the International Olympiad in Informatics. No linguistics knowledge is necessary, and this is similar to a logic tests. The two exams are taken on two school days.

4.4 IDT

A local company, Innovative Defense Technologies, sponsors fun contests for high schoolers related to automated software testing. The previous contest consisted of creating a program to recognize wich windows contained text on a screen. We will let you know when the next contest comes.

4.5 Topcoder and Codeforces

TopCoder (<http://community.topcoder.com/tc>) is a very popular online competition that occurs bi-weekly. Codeforces (<http://www.codeforces.com>) is a similar competition that occurs every Sunday.

4.6 Other

- The Croatian Olympiad in Informatics (<http://www.hsin.hr/coci/>) is like USACO for Croatia.
- CodeCup (<http://www.codecup.nl/intro.php>) involves programming an AI for a special game (different each year).
- Kaggle (<http://www.kaggle.com>) hosts frequent data science competitions incorporating statistics and machine learning to solve any variety of problems, often with big prizes and real-world data.