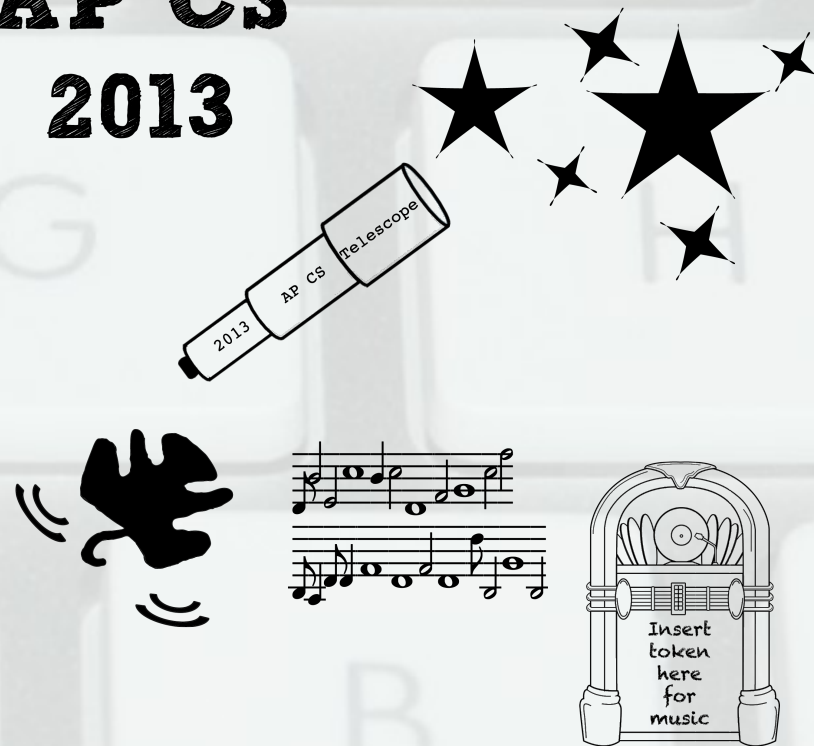


AP CS Toy Night 2013

**AP CS
2013**



Topics

- Recruiting
- Data structures
- Resources - more
- Prime Sieve
- Pedagogy
- Opportunity
- Contests
- Binary Magic
- Alice 3
- Recursion
- Study
- Ouya

Alice 3

- July Release
- OOP instead of object based
- Methods taught/apply to all of class
- Subclassing

Contests

- Picoctf
 - Hacking contest sponsored by the NSA
 - www.picoctf.com
- Master the Mainframe
 - IBM mainframe programming
 - Multiple languages
 - October – December annually

Prime Sieve

- Groups of four students, long tape of numbers, mark off number and its remaining multiples
- Code and timing
- Project Euler #35

Recursion and Fractals

- PBS Movie
 - Life story of Mandelbrot
 - Applications of recursion for real life measurements
 - <http://www.pbs.org/wgbh/nova/physics/hunting-hidden-dimension.html>
 -

Binary Magic

- Figure out the number based on the sheets with values
- Each sheet is a power of two and combine the value of the sheet to get the selected number
- Laminate a magnet between two sheets and it can be done via whiteboard

Ouya

- Android video game console
- Open source development
- Must have free options

Recruiting

- CSTA
 - Computer Science Teachers of America
 - www.csta.org
- NCWIT
 - Lots of supplies for teachers, parents counselors...
 - www.ncwit.org
- CS Ed Week
 - Student created announcements
 - Link with other curricula

Data Structures

- Barrel of Monkeys TM
 - Lists, arrays, trees, and more
 - <http://www.kettering.edu/~jhuggins/papers/fiemonkeys.pdf>
- CS Fairy Tales
 - Jack learns the facts about queues and stacks
 - <http://jonah.cs.elon.edu/sduvall2/CSFairyTales/Welcome.html>
- Algorithm sorting
 - <http://www.youtube.com/user/AlgoRythmics>

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Study

- Online Text resources
 - <http://runestone.org>
 - Live python coding / debug
- Creative Writing and CS
 - Using poetry or short stories to explain concepts of CS
- Crossword puzzles for vocab
 - Puzzlemaker.com and many others

Pedagogy

- Local reviews with other teachers
 - AP Prep
 - Small contests
- Moving quizzes
 - 3x5 cards around room with theme/topic printed
 - Pass out other 3x5's to students and have them go to the best area, discuss with each other to check placement...

Resources

- Toy Night Drop Box
 - <https://www.dropbox.com/sh/rqywx5vfqjh7ev4/FrVHxKqqkF>
- AP Labs
 - http://www.tymann.us/apcs_labs
- Puzzle Night
 - <http://tinyurl.com/APPuzzle5>
- AP CS T-Shirts
 - <http://www.cs.grinnell.edu/~walker/apcs/t-shirts/>

More resources

- Oracle Academy
 - Free online training for teachers and then student resources for Java
 - <http://academy.oracle.com>
- Silly Video
 - SNL Tech Talk
- Student Video activity
 - http://v.youku.com/v_show/id_XNDkwMzg5NzI0.html

Opportunity

- Presenters / Teachers needed in China
 - Contact Yining (Lucy) Liu for more info

Thanks!

- In no particular order:
 - Paul, Lining (Lucy), Chinma, Margaret, Tim, Sandy, Don, Louis, Stefan, Maria, Don, Barb, Jim, Crystal, Scott, Cody and everyone who attended :D