AP CS A Toy Night 2023!

How to make CS even more fun!

Ray Kotty

Converting numbers from any base. Multiply by the number and add.

$2317_4 \Rightarrow$

64	16	4	1
2	3	1	7

$128 + 48 + 4 + 7 = 187$

$2 \times 4^3 + 3 \times 4^2 + 1 \times 4^1 + 7$

$(2 \times 4^2 + 3 \times 4^1 + 1) 4 + 7$

$[(2 \times 4 + 3) 4 + 1] 4 + 7$

DOUBLE DABBLE

Shoutout to Jim Huggins - Kids toys

Barrel of Monkeys are amazing for lists and arrays

Shape balls for correct <Type> variable

Shoutout to Dave Feinberg: [SandLab](#)

How to make 2D arrays be lots of fun for students. I use this with my students every year as the introduction to 2D arrays.

Sam Black : JuiceMind

This is an online platform that has prebuilt multiple choice and short response Java questions. It is free!

Don Blaheta: Large format cards

Great for sorting algorithms. They can be held by students and seen from across the room

Don Blaheta: Whiteboard Screenshot

Save a picture/screenshot of the board at the end of every day. Posted to the class resources so both you and students know where you left off and what was done.

Stefan

Using AI programming for battleship competitions

Matthew: Gridworld

Great use of the Gridworld case study to introduce Objects and methods easily for Unit 2. Loads of existing resources and tools already made to support Gridworld and students can easily see what is happening to make a more concrete connection.

Solomon: Ayyfunge: Befunge implementation

Using a string/integer based implementation of the Befunge language you can show different ways to do algorithms and languages

Solomon: data validation

Using Scanner with System.in to make sure students can validate boolean, numeric, and String input.

Albert Chan: Pythontutor.com

Allows for visualization of multiple languages and the behind the scenes of logic. Great for tracing algorithms and recursion.

Beth Traub: Array/ArrayList of objects

Students hold dice/dominoes/other small object with properties and they have to call the correct method to examine the property(ies) of the objects to sort and search them.

Beth: Reimplement code

Print out screenshots / samples of common algorithms in other languages besides Java and have students do any of the following:

- Implement in Java
- Write comments explaining what the code does
- Explain the algorithm in English
- Tell another student how to implement in Java

Stefan: Linux treasure hunts

Using various linux tools to search for specific files or parts of files including file size, contents, mapping one file to another.

Integrated into the LMS so that the exact answer is accepted and proceeds to the next question. Hide clues for next question in the file…

Cody: Walk and talk

Take the students around the campus inside/outside and do object/method decomposition examples as you walk around. Use follow-up questions to involve all students and higher order thinking questions as you progress.

Cody: Mobile quizzes

Put topics on papers/post-its on the wall and have students a 3x5 card with a vocab term or definition on it. Students need to gather at the appropriate paper and explain to the others there why they fit that category. Students direct others to the appropriate location if incorrect. Give students new cards and repeat

Presenter : Topic

Details

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Details