CPSC 100: Choose Your Own Adventure

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What is CPSC 100?

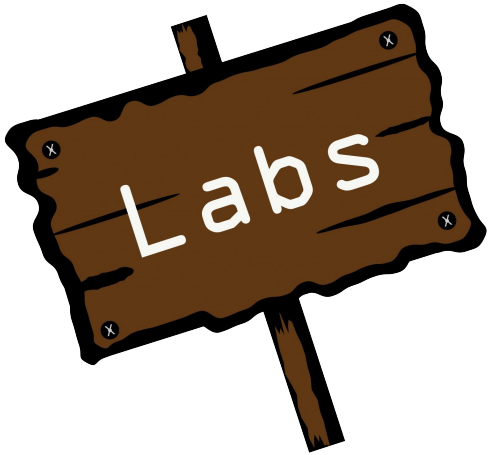
- New course in the Department of Computer Science (started September 2016)
- Focused on teaching computational thinking to non-CS majors (primarily first years)
  - “**Computational Thinking (CT)** is the thought processes involved in formulating a problem and expressing its solution(s) in such a way that a computer—human or machine—can effectively carry out.” -Jeannette Wing

We focus on three aspects of Computational Thinking

- **Computational Thinking Building Blocks:** E.g., how does the Internet work?
- **Computational Thinking Applications:** E.g., how can I tell when I should click on a link?
- **Computational Thinking Impact:** E.g., will robots destroy the earth?

Choose your Own Adventure!

- Three venues for students to direct their own learning
- We provide the freedom for them to explore a topic of their own choosing using lecture concepts



Why Choose Your Own Adventure?

- The focus of the course is not to funnel students into Computer Science. We want them to see how computational thinking fits into **their** lives (academic or otherwise).
- Having everyone pick their own topic would help achieve this goal.

Labs

- Some labs are very open-ended
- Students are asked to think about their topic within the context of the class but can choose whatever topic to focus their attention on
- For example, students can explore the ideas and application of data mining on any topic they choose

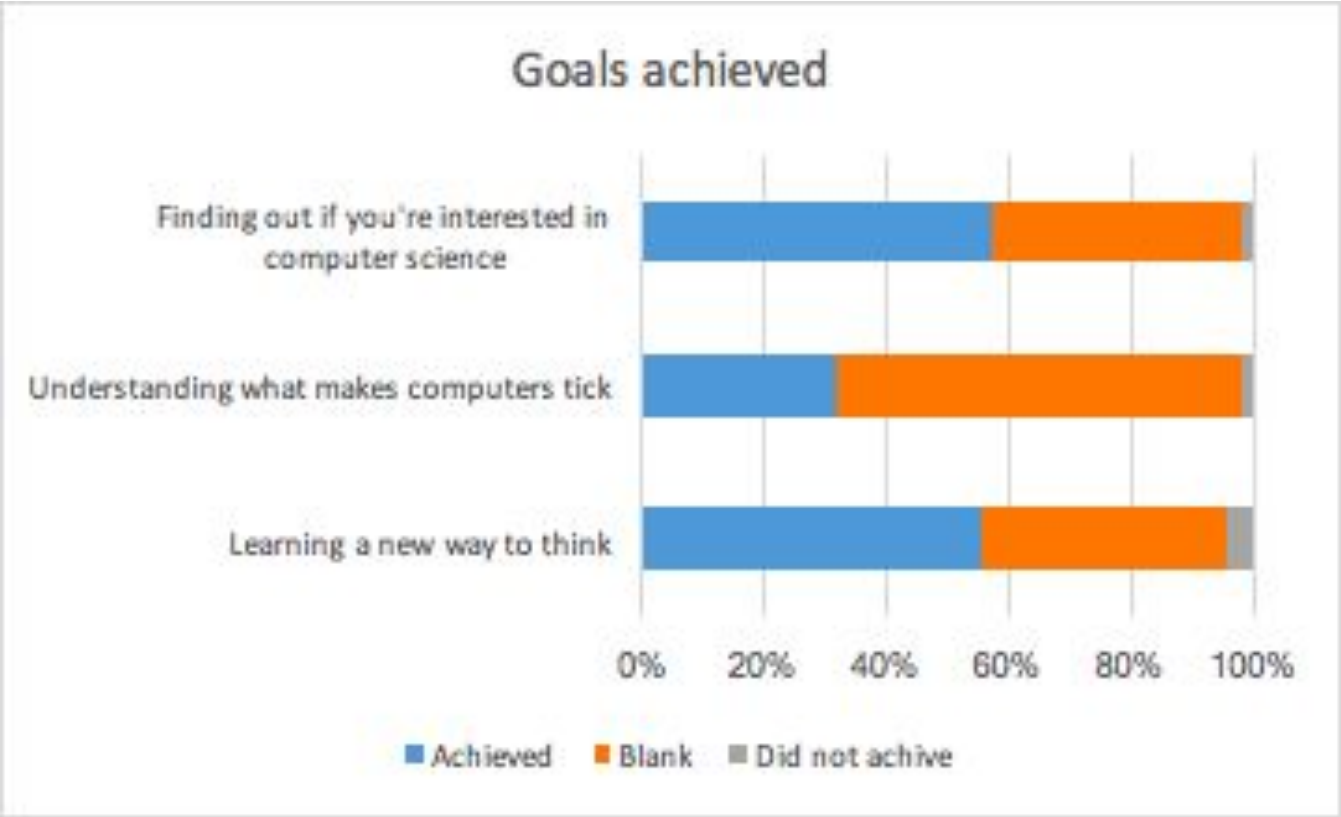
In the News

- Students are required to find news articles that relate to class material
- Articles are posted to Piazza and students comment on other people's posts
- Students are specifically seeking posts that are related to class topics as opposed to articles that relate to computing in general
- Interesting articles that students post are incorporated into lecture

Group Project (3-4 students)

- Students can focus on any aspect of computational thinking (building block, application, or impact)
- Topic and method of presentation is determined by the group
  - E.g., Programming a game to teach children about Internet safety
  - E.g., Research paper exploring the use of algorithms in stock trading
  - E.g., Exploring the evolution of water animation techniques in Disney movies

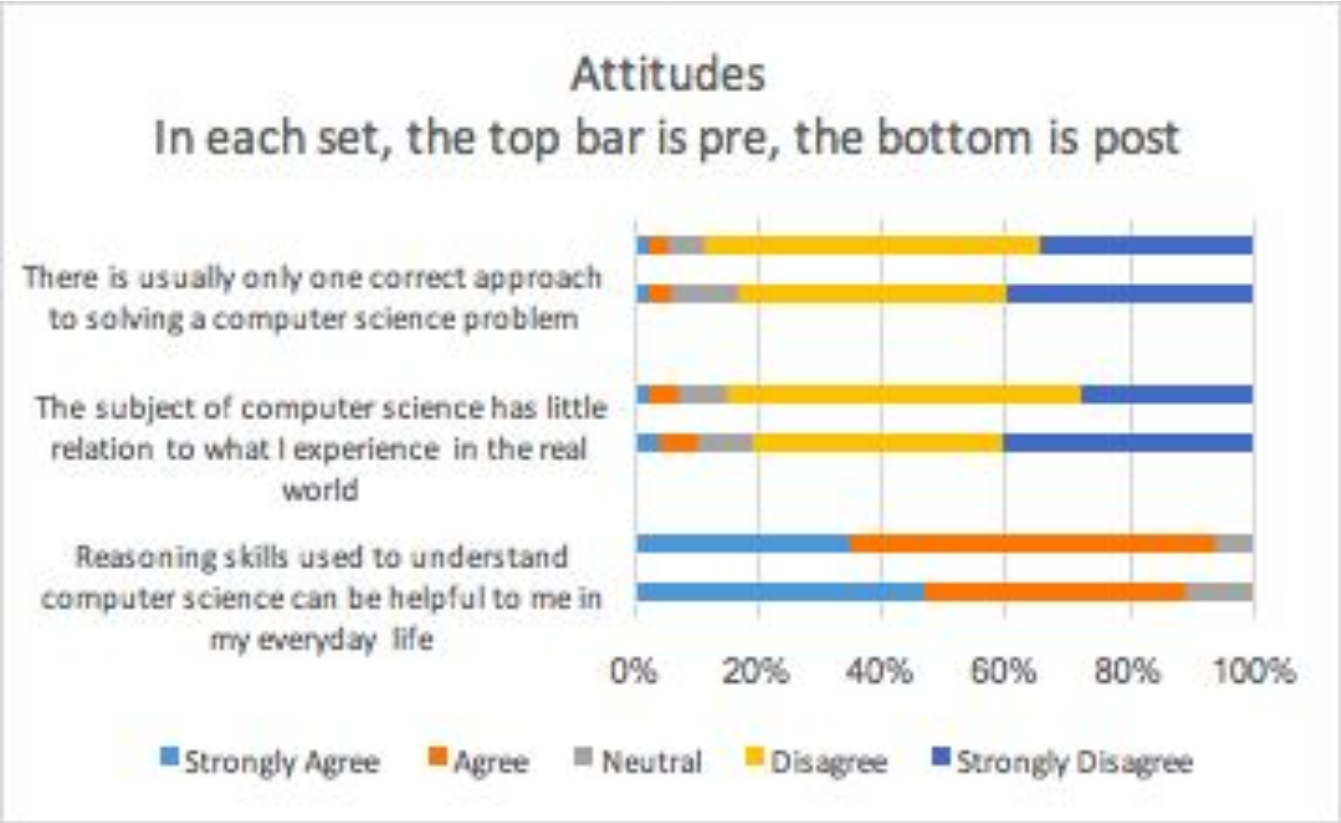
How have students responded? - Goals Achieved



How have students responded? - Goals Achieved

	Percentage (%)		
	Learning a new way to think	**Understanding what makes computers tick**	**Finding out if you're interested in computer science**
Achieved	55	32	57
Blank	40	66	40
Did not achive	4	2	2

How have students responded? - Attitudes



How have students responded? - Attitudes

	Reasoning skills used to understand computer science can be helpful to me in my everyday life		The subject of computer science has little relation to what I experience in the real world		There is usually only one correct approach to solving a computer science problem	
	Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**
Strongly Agree	**34**	**47**	2	4	2	2
Agree	58	43	5	6	3	4
Neutral	6	11	8	9	6	11
Disagree	0	0	58	40	54	43
Strongly Disagree	0	o	**28**	**40**	**34**	**40**

How have students responded? - Skills Learned

How have students responded? - Skills Learned

Attitude	Percentage
Very satisfied	28
Satisfied	62
Neither	6
Unsatisfied	2
Very unsatisfied	2
Not applicable	0