Culture Day Lesson B: Student Research Project/Presentation

Learning Objectives

Students will be able to… * Describe in detail the topic of their assigned/chosen computer science related topic * Answer questions about their topic * Explore and analyze the impact on, and impact of, technology in the context of their topic

Possible Topics

- Famous figures in computer science (Donald Knuth, Alan Turing, Kernighan & Ritchie, Mark Zuckerburg, Bill Gates, Elon Musk, Steve Jobs, etc.)
- Famous women figures in computer science (Grace Hopper, Bletchley code breakers, Ada Lovelace, Dorothy Vaughan, Anita Borg, etc)
- Important technologies or algorithms (RSA, Dijstra's Algorithm, RAID, integrated circuits, etc.)
- New and emerging technologies (AI, Machine Learning, robotics, cryptocurrencies, etc.)
- Impact of technology on society (social media, health and lifestyle, screen time, etc.)
- Ethics (privacy, cyberbullying, security, etc.)
- Legal issues from new technology (intellectual property, facial recognition discrimination, etc.)
- Software reliability and limitation (https://www.cigniti.com/blog/37-software-failures-inadequate-software-testing/)

This list should be expanded and updated, from time to time, to be up to date.

Materials/Preparation

- A list of possible topics for research projects
  - Encourage students to research from online and other resources, and keep track of sources
  - Citation generator http://www.easybib.com/k this is a handy way to generate citations (even for websites) that can be included as a Bibliography or References for the project
- Guidelines for projects and/or presentations
  - Presentation Tips https://www.thinkoutsidetheslide.com/top-5-powerpoint-tips-for-student-presentations-in-school/
  - Ideas for giving interesting presentations https://www.powtoon.com/blog/17-killer-presentations-tips-students-stand/

Pacing Guide

Duration	Description
5 minutes	Welcome, attendance, bell work, announcements
15 minutes	Presentation #1
15 minutes	Presentation #2
15 minutes	Presentation #3
5 minutes	Debrief and wrap-up

Instructor's Notes

1. ***Prior to Culture Day***
   - Assign each student one or more topics to research and present to the class on a future day
     - Topics can be assigned, chosen by students from a pre-defined list, or suggested by students and approved by instructors
   - Create a schedule of when culture days will occur and which students will present on each day
   - Depending on how many students are in the class, and how many days you wish to allot for presentations, your pacing guide can be adjusted.
2. Student presentations
   - Each student should give a 5-7 minute presentation on their assigned topic, followed by 8-10 minutes for

Q&A

- Students should have a visual aspect to their project (poster, PowerPoint, prop bag, etc.) as well as giving a verbal presentation
- Use your judgement regarding the level of technical detail expected in the presentation. It is probably not realistic to expect students to become experts in advanced technologies such as RSA, but they should be able to explain, at least at a high level, the details of their topic.
  - Do not allow students to simply read a textbook or online definition of the topic– ensure they can at least explain the subject in their own words.
- Allow classmates to ask questions, but beware of students trying to stump each other.
- Have a few questions for each assigned topic prepared ahead of time for instructors to ask in case classmates do not have questions.

Accommodation/Differentiation

- In smaller classes, each student may be able to present twice in a single semester.
- For classes where students are less experienced with presentations, consider a "science fair"-style event where students produce a display that can be viewed by others to present their topic.