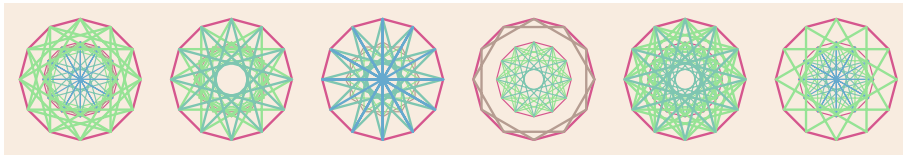


Exercise 0 for Students of Computer Science

Leon Tabak
l.tabak@ieee.org

10 July 2021

This work is licensed under CC BY 4.0. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.



Goal: highlight opportunities and rewards for all.

We want to make the study of computer science appealing to the greatest number of students. We want all to feel welcome in our classrooms. We want to nurture confidence in those who might doubt their own ability to succeed in their study of computer science.

While we acknowledge the challenging aspects of our work, we also highlight the rewards. The study of computer science can open the doors to opportunities to work with bright and creative people. Computer scientists are contributing to the improvement of health and education, to cleaner forms of energy, to safer transportation, and to more responsive and accountable governments.

Computer science can appeal to people with many interests and talents. Many kinds of people can contribute to the software engineering profession.

Computer science is, at least in part, an engineering discipline. Many (but not all) people who study computer science will enroll in the software engineering profession.

Let's look at the culture of engineering.

- Are there some habits or attitudes that distinguish engineers?
- Are there some unflattering characterizations of engineers that circulate widely?
- Are there some much admired qualities that engineers commonly possess?
- How can we give our students a more accurate picture of the culture that exists within our classrooms and laboratories and in software engineering firms?

Assignment: view videos.

The Intel Corporation produced a series of advertisements that celebrate the culture of the engineering profession. The common theme of these advertisements is “our _____ aren't like your _____.”

Find videos from Intel on YouTube that have these tag lines:

- “our big ideas aren't like your big ideas”
- “our doodles aren't like your doodles”
- “our jokes aren't like your jokes”
- “our parties aren't like your parties”
- “our perks aren't like your perks”
- “our rock stars aren't like your rock stars”
- “our teams players aren't like your team players”

View these brief videos.

Questions to begin a discussion.

- How have the engineers decorated their cake?
- What prerequisite (a perquisite is a special benefit) might a programmer of robots create for herself?
- What was the practical joke hidden in a board full of equations?
- Who is the rock star?

- Why might a big idea at a company that makes microprocessors be hard to see?
 - Which position on the team required the greatest courage?
 - Our brains are always working. What is the hand of Intel's Director of Device Technology doing while she chats on the telephone with a friend?
-

- Picture an engineer in your mind's eye. Do Intel's engineers match that picture? In what ways?
- Software engineering is a creative activity. Opportunities to exercise creativity attracts many people to the profession.
 - Did the Intel advertisements suggest creative work?
 - Are you an artist? A musician? Do you enjoy some kind of craft? Can you describe the enjoyment and satisfaction you derive from designing and building beautiful things?
- Software engineering is a team activity. Opportunities to work with bright and committed people on important problems attracts many people to the profession.
 - Did you see teams in the Intel advertisements?
 - Have you trained, competed, or performed with other people? Can you describe the rewards that followed from a successful collaboration?