

Lesson 12

CSC140 Foundations of Computer Science

03 March 2020

1. Who was Robert Noyce?
2. Tom Wolfe said that Robert Noyce brought Grinnell, Iowa with him when he moved to the Silicon Valley. What did he mean?
3. Who are some of the other mid-western and western pioneers of electrical engineering and computing that Tom Wolfe lists?
4. What, in Tom Wolfe's mind, are the distinguishing features of the Congregational Church?
5. How did the engineering profession in the Midwest differ from the engineering profession in the East?
6. What was life like for a 24 year old engineer at Noyce's company in the Silicon Valley?
7. How did the organization of Fairchild Semiconductor (and later Intel) differ from the organization of companies in New York?
8. What was lunch like at Intel?
9. What was a meeting like at Intel?
10. How does the story that Noyce tells us in his essay compare to the stories that you found in your reading about Margaret Hamilton, John Aaron, Katherine Johnson, and Don Eyles?

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1. How does Brooks distinguish between essential and accidental tasks?
 2. How can a software project resemble a monster?

3. What does Brooks mean when he speaks of a “silver bullet?”
4. Brooks compares software engineering to medicine. What was the lesson that medical scientists learned that might now be relevant for those who are trying to improve the state of the art in software engineering?
5. How does progress in software compare to progress with hardware?
6. How does the complexity of software differ from the complexity of tangible products?
7. What is the hope that sustains physicists as they try to understand a complex universe? Why is this same kind of hope unavailable to software engineers?
8. The design of software is often invisible. Software is changeable. In these ways, it differs from other kinds of products that engineers design. Explain. What does “invisible” mean? “Changeable?”
9. List 3 advances that have improved the practice of software engineering.
10. Read the first two paragraphs of Section 5.2 *Requirements Refinement and Rapid Prototyping*. What is the lesson that Brooks wants us to learn?
11. Look at the first sentence or two in Sections 5.2 and 5.3. What other lessons should we take away from Brooks’ essay?