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C++ Introduction

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Chapter 1: Computers, People, and Programming Review

1. What is software?
   1. Software is a collection of programs running on some computer
2. Why is software important?
   1. It is used to make hardware useful, solves problems, and makes life easier.
3. Where is software important?
   1. In medicine, engines, research, etc.
4. What could go wrong if software fails? Examples?
   1. Someone could get hurt. For example, an autonomous car fails to brake and crashes.
5. Where does software play an important role? Example?
   1. Software plays an important role in engineering products. For example, in designing new parts via modeling and simulation, as well as CAD.
6. What are some jobs related to software development?
   1. Embedded software, shipping, telecommunications.
7. What is the difference between computer science and programming?
   1. Programming is a tool and computer science is the theoretical field of computation and computing systems.
8. Where is the design, construction, and use of a ship is software?
   1. Design- in CAD/engineering drawing packages
   2. Construction- in welding robots
   3. Use- GPS
9. What is a server farm?
   1. A collection of computers providing web services
10. What kind of queries do you ask online?
    1. “How far is Des Moines from here?”
    2. “How many mL in a cup”
11. What is some software uses in science?
    1. Human genome sequencing, molecular models, data from telescopes.
12. What are some uses of software in medicine>
    1. MRI, CAT scans, calculating blood pressure tools, putting patient details into a database.
13. What are some uses of software in entertainment?
    1. Video editing, software, sound encoders/producing.
14. What general properties do we expect in good software?
    1. Maintainable, correct, reliable, well designed, affordable.
15. What does a software developer look like?
    1. Team player, learns from mistakes, good communicator, diverse background
16. What are the stages of software development?
    1. Analysis, design, programming, test
17. Why can software development be difficult?
    1. Computers are dumber than we think, world is more complex than we think and we don’t always understand the implications of it.
18. What are some uses that make life easier?
    1. Access to the internet to ask any question rather than looking up in a book.
    2. Designing/ making engineering drawings in a program rather than on a drawing board.
    3. Being able to connect with anyone in the world over zoom.
19. What are some uses of software that makes life difficult?
    1. Overwhelming amounts of information that is not always relevant or correct.
    2. Gives anyone the platform to spread misinformation.