CGS1100, Spring 2004: Study Guide for Exam 3

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Relevant Topics:

1. Reading Assignment for Units 11A (Operating Systems)

2. Contents covered in class (all slides, units 11A, 12A, 13A). Please keep in mind that for units 12A and 13A, the main content was explained in class!

Make sure you UNDERSTAND the concepts covered! Don't just learn by heart the definitions etc. Ask in class if some concepts are unclear!

How to Prepare for the Exam:

1. Re-read your notes for chapters 11 – 13 (excluding MS-Excel / PowerPoint)

2. Review the slides for units 11A, 12A, and 13A, and make sure you remember what they describe.

3. Make sure you understand the review questions shown below.

Self-Assessment:

Make sure you know the answers to the following questions. A huge portion of these questions will be part of the exam, either in the exact way listed below or similar questions!

1. What is the advantage of having the operating system control all hardware devices? (Think of the printer driver example – one would need one printer driver for each software application!)

2. Can computers have more than one processor?

3. Name the for types of operating systems and explain the differences.

4. Name two operating systems that are not from Microsoft.

5. Is the operating system also responsible for the user interface?

6. Name the four types of computer risks with regard to malicious software.

7. What is a computer virus? How does it work?

8. What is a Trojan horse?

9. How can viruses spread around? How do they reproduce themselves?

10. Name all possible paths that viruses might use to infect other files.

11. What is a computer worm?

12. What is a firewall?

13. Against which types of attacks can a firewall protect your computer?

14. What is spyware?

15. Name and explain the five ways to protect your computer and your data (backups, anti-virus, etc.).

16. Why is it important to combine those five things?

17. What is a Hoax? How can you protect yourself and your friends?

18. How does a anti-virus software work?

19. Which are the three basic methods that can be used to verify the sender of a message? (remember the "Little Red Riding Hood" example – how can she check whether the individual is who he/she claims to be?)

20. Why is it more important to protect your e-mails against unauthorized access as compared to regular USPS mail? (-> open network, man-in-the-middle)

21. What is encryption? Can it protect your messages from unauthorized readers?

22. What is the problem with simple character substitution as a method of encrypting a document?

23. In which way is asymmetric encryption different from regular (symmetric) encryption? Is there an advantage?

24. Do you have to transmit the private key?

25. How does a digital signature work? Which keys are used by which party?