Assignment 6
(**Due date: 12/5/2008/Friday, in class**)

Your name:	Date:

Provide brief answers to the following questions (you may check the textbook Section Questions & Exercises for solutions to some of the questions in the **Chapters 7 (Software Engineering) & 8 (Data Abstraction)**, read the textbook and lecture slides for other questions):

1. What is CASE? What are main CASE tools (S7.1)?

2. What is IDEs? Give an example of IDE.

3. How does the development stage of the software life cycle affect the maintenance stage (7.2.1)?

4. Summarize each of the four stages within the development phase of the software life cycle (7.2.2).

5. What is the role of a software requirements specification document (7.2.3)?

6. Draw a use case diagram of a library records system (7.5.2).

7. What role in the software engineering process do design patterns play (7.5.6)?

8. In what ways does human nature work against quality assurance (7.6.2)?

9. When testing software, is a successful test one that does or does not find errors (7.6.4)?

10. What would be a good test to perform on a software package that was designed to sort a list of no more than 100 entries (7.6.6)?

11. In what forms can software be documented (only a brief solution) (7.7. 1)?

12. Identify an application of ergonomics in the field of HCI design (7.8.1).

13. Identify an application of cognetics in the field HCI design (7.8.1).

14. What distinguishes the field of human-machine interface design from the more traditional field of software engineering (7.8.2)?

15. What are alpha testing and beta testing (S7.6)?

16. Give examples (outside of computer science) of each of the following structures: list, stack, queue, and tree (8.1.1).

17. Summarize the distinction between lists, stacks, and queues (8.1.2).

18. Suppose the letter A is pushed onto an empty stack, followed by the letters B and C, in that order. Then suppose that a letter is popped off the stack and the letters D and E are pushed on. List the letters that would be on the stack in the order they would appear from top to bottom. If a letter is popped off the stack, which letter will be retrieved (8.1.3)?

19. Suppose the letter A is placed in an empty queue, followed the letters B and C, in that order. Then suppose that a letter is removed from the queue and the letters D and E are inserted. List the letters that would be in the queue in the order they would appear from head to tail. If a letter is now removed from the queue, which letter will it be (8.1.4)?

20. Suppose a tree has four nodes A, B, C, and D. if A and C are siblings and D's parent is A, which nodes are leaf nodes? Which node is the root (8.1.5)?

Leaf nodes: D, C. B the root node.

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21. In your own words, describe what is affordance/metaphor in the User-Interface design? Give examples on how they are used.

==========**Important Notes**==========

- Homework can be hand-written or typewritten.
- Put all your solutions in the same order as the above questions.
- Use this question paper as **cover page and staple them together**.