Assignment #2

September 26, 2005

Due: Friday, October 7, 3:00 p.m.
Points: 50
Weight in course grade: 6%

1 Do Exercise 5.9, page 113 of the textbook [SE-7]. [8 points]

2 Consider either (a) an online hotel reservation system or (b) the software product you described in Exercise 2 of Assignment #1 (CS 425/625). Write for it the following:
   - Two user requirements using the format shown in Fig. 6.10 of the textbook [SE-7];
   - One system requirement using the standard form shown in Fig. 6.12 of the textbook; and
   - Three non-functional requirements.

   If you use (b) above, include again in this assignment the description of the software product you provided for Exercise 2 of A#1. [12 points]

3 Do (part of) Exercise 8.4, page 191 of the textbook [SE-7], as follows: Draw the state machine model (state diagram) for a telephone answering machine which records incoming messages and displays the number of accepted messages on an LED display. The system should record incoming messages and play them upon the owner’s request. Also, the system should allow the telephone owner to dial in, type a sequence of numbers (identified as tones) and have the recorded messages replayed over the phone. State your assumptions and describe the state diagram. [15 points]

4 Develop an object model (a class diagram) for a software system of your choice showing:
   - at least 6 classes in the class diagram;
   - the attributes of each class;
   - the relationships between classes;
   - cardinality constraints on relationships;
   - for one of the class, two non-trivial methods.

   Your model should illustrate all three main types of relationship: inheritance, aggregation, and association. Note that a non-trivial method involves computations based on one or more attributes. State your assumptions and describe the class diagram. Also, briefly explain the two non-trivial methods. [15 points]

Notes on submission:

- Both the technical content and the presentation style (quality of writing and document formatting) of your answers will be taken into consideration when grading the assignment.
- Remember that this is an individual assignment, not a team work. Thus, collaboration is not allowed.
- Hand in the printed hardcopy of your assignment to the instructor in room SEM-236. If he is not there, slip your assignment under his office’s door.