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Department of Computer Science and Engineering
College of Engineering, University of Nevada, Reno

CS 425 / CS 625 Software Engineering

Midterm Test #2

November 20, 2006

Test type: Closed-book examination
Number of questions: 12
Total points: 28
Test weight: 9%
Time: 70 minutes
Notes:

- For questions **1 to 8** indicate the correct answer (only one) on the answer sheets provided by the instructor. Each of the questions **1 to 8** has a one point value for a group total of **8** points.
- Questions **9 to 12** require that you elaborate your answers. You must also write these answers on the sheets provided by the instructor. The total group value of questions **9 to 12** is **20** points.

Questions:

1 Which of the following is not a *generic architectural model for RTS* (real-time systems)?
a. Data acquisition system
b. Monitoring system
c. Control system
d. Version control system [1 point]

2 Which of the following is a stage (activity) in the *real-time software design process* described in the textbook?
a. Identify the stimuli that the system must process
b. Choose an execution platform
c. Design a scheduling system
d. All of the above [1 point]

3 Which of the following is not a *primary style of user interaction*?
a. Menu validation
b. Form fill-in
c. Natural language
d. Command language [1 point]

4 Which of the following is not a technique for *user-interface evaluation*?
a. Instrumenting code to collect usage statistics
b. Observing users at work with the system and "thinking aloud"
c. Performing hierarchical task analysis
d. Surveying users by questionnaires [1 point]

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5 Which of the following is a core activity in the *user-interface design process*?

a. Database design
b. Interface evaluation
c. Requirements specification
d. Visual modeling [1 point]

6 Which of the following is <u>not</u> a major principle of *agile methods*?

a. Incremental delivery
b. Risk management
c. People, not process
d. Embrace change [1 point]

7 Which of the following is an *extreme programming* practice or principle?

a. Domain knowledge
b. Corrective maintenance
c. Collective ownership
d. All of the above [1 point]

8 Which of the following is a strategic option for dealing with *legacy systems*?

a. Re-engineer the system
b. Scrap the system completely
c. Replace all or part of the system with a new system
d. All of the above [1 point]

9 Describe and compare the following two styles of user interaction: *direct manipulation* and *command language*. Also, for each interaction style give a concrete example of software application (software tool) that you are familiar with – briefly explain how this software application supports the specific interaction style.

[5 points]

10 Briefly describe (2 to 4 lines each) five practices or principles that are used in *extreme programming* (XP). Among these five practices or principles you must include *pair-programming* and *test-first development*.

[5 points]

11 Briefly discuss (2 to 4 lines each) the following key factors that distinguish development and maintenance: *team stability*, *contractual responsibility*, *staff skills*, and *program age and structure*.

[4 points]

12 Consider your group project in CS425/625. Briefly describe the project concept (5 to 8 lines) and give examples of three functional requirements and two non-functional requirements. In addition, <u>either</u> (a) draw a sketch of your software product's main user interface or (b) draw (part of) the use case diagram of your software product (with at least 5 use cases).

[6 points]