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Seventh Semester B.E. Degree Examination, June 2012

Software Architecture

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Define software architecture. What is architecture business cycle? Explain with a neat diagram. (10 Marks)
- b. Define architectural patterns, reference models and reference architectures and bring out the relationships between them. (06 Marks)
- c. Explain the various process recommendations as used by an architect while developing software architectures. (04 Marks)
- 2 a. Explain the process control paradigm with various process control definitions. (06 Marks)
- b. List the basic requirements for mobile robot architecture. (04 Marks)
- c. Explain the process control view of cruise control architectural style and obtain the complete cruise control system. (10 Marks)
- 3 a. What is quality attribute scenario? List the parts of scenario, with an example. (04 Marks)
- b. What is availability? Explain the general scenario for availability. (08 Marks)
- c. Classify security tactics. What are the different tactics for resisting attacks? (08 Marks)
- 4 a. List the components of pipe and filters architectural pattern. With sketches, explain the CRC cards for the same. (08 Marks)
- b. Define blackboard architectural pattern. Briefly explain the steps used to implement the blackboard pattern. (08 Marks)
- c. Write a note on the Hearsay – II system. (04 Marks)

PART – B

- 5 a. Define broker architectural pattern. Explain with a diagram the objects involved in a broker system. (07 Marks)
- b. Depict the dynamic behavior of MVC with any one scenario. (07 Marks)
- c. Give the CRC cards for top level, intermediate level and bottom level PAC agents. (06 Marks)
- 6 a. What are the steps involved in implementing the microkernel system? (08 Marks)
- b. Explain the known uses of reflection pattern. (06 Marks)
- c. Explain the advantages and disadvantages of a reflective architectural pattern. (06 Marks)
- 7 a. Briefly explain the benefits of master slave design pattern. (06 Marks)
- b. What are variants of proxy pattern? (06 Marks)
- c. List and explain the steps to implement a whole part structure. (08 Marks)
- 8 a. List the steps of ADD method of architectural design. (06 Marks)
- b. Explain with a neat diagram, the evolutionary delivery life cycle model. (06 Marks)
- c. What are the suggested standard organization points for view documentation? (08 Marks)

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Seventh Semester B.E. Degree Examination, December 2012

Software Architecture

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.**PART - A**

- 1
 - a. Explain in detail the building of Architecture Business cycle by identifying the factors of influence. (10 Marks)
 - b. Briefly explain, what does software architecture constitute. (05 Marks)
 - c. Describe the Architectural structure of a system. (05 Marks)
- 2
 - a. Enlist the different Architectural styles and discuss in brief Event – based, Implicit Invocation. (06 Marks)
 - b. Explain the software paradigm for process control. (04 Marks)
 - c. State the problem of KWIC. Propose Abstract Data types and Implicit Invocation styles to implement solutions for the same. (10 Marks)
- 3
 - a. Explain quality attribute scenarios. (06 Marks)
 - b. Distinguish between availability and modifiability scenarios. (04 Marks)
 - c. Explain the following with respect to tactics:
 - i) Fault prevention
 - ii) Deter binding time
 - iii) Resource arbitration
 - iv) Internal monitoring
 - v) Run time tactics. (10 Marks)
- 4
 - a. Explain layers architectures pattern, with sketches and CRC cards. (06 Marks)
 - b. List the components of a pipe and filter architecture pattern and depict the dynamics behaviour of it. (08 Marks)
 - c. Explain the forces that influence solution to problem based on black board pattern. (06 Marks)

PART - B

- 5
 - a. Describe the structure of Broker architectural pattern with their respective CRC cards. (08 Marks)
 - b. Explain the dynamic behaviour of MVC pattern, with sketches. (08 Marks)
 - c. List the benefits of PVC pattern. (04 Marks)
- 6
 - a. Enumerate the implementation of a Micro Kernel pattern. (10 Marks)
 - b. Explain the reflection architectural pattern and its known uses. (10 Marks)
- 7
 - a. Enlist the benefits of whole – part pattern. (04 Marks)
 - b. Discuss the structure, dynamics and implementation of Master – Slave pattern. (10 Marks)
 - c. List the known uses and liabilities of proxy pattern. (06 Marks)
- 8
 - a. Explain ADD and its steps. (07 Marks)
 - b. What are views? How they serve the architecture, with examples. (06 Marks)
 - c. List the steps in documenting a view for architecture. (07 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42-8 = 50, will be treated as malpractice.