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Seventh Semester B.E. Degree Examination, May/June 2010
Software Architecture

Time: 3 hrs.

Max. Marks:100

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

PART - A

- 1 a. Define software architecture. Explain the common software architecture structures. (10 Marks)
- b. Explain how the architecture business cycle works, with a neat diagram. (10 Marks)
- 2 a. Define architectural style. Mention any four commonly used styles. (04 Marks)
- b. Consider the case study of building a software controlled mobile robot. Describe its challenging problems and design considerations with four requirements. Finally give the solution by layered architecture for all the four requirements. (16 Marks)
- 3 a. What are the qualities of the system? Explain the modifiability general scenario. (10 Marks)
- b. What do you mean by tactics? Explain the availability tactics, with a neat diagram. (10 Marks)
- 4 a. What do you mean by architectural patterns? How is it categorised? Explain the structure part of the solution for ISO layered architecture. (10 Marks)
- b. Explain with a neat diagram, the dynamic scenario of passive filters. (10 Marks)

PART - B

- 5 a. What do you mean by broker architecture? What are the steps involved in implementing distributed broker architecture patterns? (10 Marks)
- b. Explain with a neat diagram, the dynamic scenarios of model view controller(MVC). (10 Marks)
- 6 a. What are the steps involved in implementing the microkernel system? (12 Marks)
- b. What are the benefits and liabilities of reflection architecture patterns? (08 Marks)
- 7 a. Discuss the five steps implementation of master slave pattern. (10 Marks)
- b. Define proxy design pattern. Discuss the benefits and liabilities of the same. (10 Marks)
- 8 a. Explain with a neat diagram, the evolutionary delivery life cycle model. (08 Marks)
- b. What are the suggested standard organization points for interface documentation? (12 Marks)

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Seventh Semester B.E. Degree Examination, December 2010
Software Architecture

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Explain how the software architectures affect the factors of influence. Hence or otherwise explain ABC. (08 Marks)
- b. Briefly explain the technical importance of software architectures. Further elaborate on the fact that architecture is the vehicle for stakeholder communication. (07 Marks)
- c. What is an allocation structure as applied to software architectures? Explain the three allocation structures in practice. (05 Marks)
- 2 a. Define the following, with an example :
i) Controlled variable ; ii) Set point ; iii) Open loop system ; iv) Feedback control system ; v) Feed forward control system. (10 Marks)
- b. State the problem of KWIC. Propose implicit invocation and pipes and filters style to implement a solution for the same. (10 Marks)
- 3 a. What is a quality attribute scenario? List the parts of such a scenario. Distinguish between availability scenarios and modifiability scenarios. (08 Marks)
- b. Explain how faults are detected and prevented. (08 Marks)
- c. Write a brief note on design time tactics. (04 Marks)
- 4 a. List the components of a pipe and filters architectural pattern. With sketches, explain the CRC cards for the same. (08 Marks)
- b. Explain the forces that influence the solutions to problems based on blackboard pattern. (07 Marks)
- c. Write a note on the HEARSAY – II system. (05 Marks)

PART – B

- 5 a. What is the necessity of proxies and bridge components in a broker system? Explain. (06 Marks)
- b. Explain the possible dynamic behaviour of MVC pattern, with suitable sketches. (09 Marks)
- c. Highlight the limitations of PAC pattern. (05 Marks)
- 6 a. List and explain the participating components of a microkernel pattern. (10 Marks)
- b. Explain the known uses of reflection pattern. (10 Marks)
- 7 a. Briefly explain the benefits of master slave design pattern. (06 Marks)
- b. List and explain the steps to implement a whole – part structure. (08 Marks)
- c. With a neat sketch, explain the typical dynamic scenario of a proxy structure. (06 Marks)
- 8 a. List the steps of ADD. (04 Marks)
- b. Write a note on creating a skeletal system. (06 Marks)
- c. What are the uses of architectural documentation? Bring out the concept of view as applied to architectural documentation. (10 Marks)

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