Software Architecture VTU Question Paper Set

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10IS81

Eighth Semester B.E. Degree Examination, Dec.2016/Jan.2017
Software Architectures

Time: 3 hrs.

Max. Marks:100

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

PART – A

1 a. With the help of neat block diagram of ABC (architecture business cycle), explain in detail the different activities which are involved in creating a software architecture. **(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 architectural styles and explain event–based, implicit invocation, in brief. **(08 Marks)**
   b. State the problem of "key words in contex". Propose solution through,
      i) Abstraction data types
      ii) Implicit invocation solution. **(12 Marks)**

3 a. What are the qualities that the architecture itself should posses? **(06 Marks)**
   b. List the parts of quality attributes scenario. **(04 Marks)**
   c. What is the goal of tactics for testability? Discuss the two categories of tactics for testing. **(10 Marks)**

4 a. Explain different steps involved in the implementation of pipe and filters architecture pattern. **(10 Marks)**
   b. Discuss in brief the pattern, from mud to structure. **(10 Marks)**

PART – B

5 a. Explain the broker architectural pattern to structure distributed software system. **(10 Marks)**
   b. What is model–view architectural pattern? With an example illustration, write its structure and implementation over a scenario. **(10 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 Write short notes on :
   a. Design pattern
   b. Master-slave pattern
   c. Whole–part pattern
   d. Proxy pattern **(20 Marks)**

8 a. Explain ADD and its steps. **(08 Marks)**
   b. List the steps in documenting a view for architecture. **(07 Marks)**
   c. What are the uses of architectural documentation? **(05 Marks)**

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Eighth Semester B.E. Degree Examination, June/July 2016

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. Briefly explain software architecture with definitions. **(05 Marks)**
   b. With the help of neat block diagram of ABC (Architecture Business Cycle), explain in detail the different activities which are involved in creating a software architecture.**(10 Marks)**
   c. Why is software architecture important? **(05 Marks)**

2 a. Explain in brief about KWIC (Keyword in Context) with shared data solution. **(10 Marks)**
   b. Enlist architectural styles and explain event-based, implicit invocation. **(06 Marks)**
   c. Explain the advantages and disadvantages of pipes and filters in architectural style.**(04 Marks)**

3 a. What is modifiability? Explain general scenario for modifiability. **(10 Marks)**
   b. Explain in brief the business qualities. **(04 Marks)**
   c. Explain how faults are detected and prevented. **(06 Marks)**

4 a. What do you mean architectural pattern? How it is categorized? Explain the structure part of the solution for ISO layered architecture. **(10 Marks)**
   b. Explain the steps involved in the implementation of pipes and filters architecture. **(10 Marks)**

PART – B

5 a. What do you mean by broker architecture? What are the steps involved in implementing distributed broker architecture pattern? **(10 Marks)**
   b. Write benefits of MVC. **(05 Marks)**
   c. What are the liabilities of PAC? **(05 Marks)**

6 a. What are the steps involved in implementing the microkernel system? **(10 Marks)**
   b. Explain the dynamic scenarios of reflection with neat diagram. **(10 Marks)**

7 Write notes on:
   a. Design pattern
   b. Master-Slave pattern
   c. Whole-part pattern
   d. Proxy pattern
   e. Command processor **(20 Marks)**

8 a. Explain the steps performed when designing an architecture using the ADD method. **(10 Marks)**
   b. Write short notes any two of following:
      i) Forming team structures
      ii) Documenting across views
      iii) Documenting interfaces. **(10 Marks)**

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Eighth Semester B.E. Degree Examination, Dec.2015/Jan.2016
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 how the software architecture affects the factors of influence. Hence or otherwise explain ABC. **(08 Marks)**

 b. Briefly explain the technical importance of software architecture. 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 architecture? Explain the three allocation structure in practice. **(05 Marks)**

2 a. Discuss the invariants, advantages and disadvantages of pipes and filter architecture style. **(10 Marks)**

 b. State the problem of KWIC. Propose implicit invocation and pipes and filter style to implement a solution for the same. **(10 Marks)**

3 a. What is quality attribute scenario? List the parts of such a scenario. Distinguish between availability scenario and modifiability scenario. **(10 Marks)**

 b. Explain how faults are detected and prevented. **(05 Marks)**

 c. Write a brief note on design time tactics. **(05 Marks)**

4 a. Discuss the guidelines involved in the implementation of pipes and filter architecture. **(10 Marks)**

 b. Write the context, problem and the solution part of blackboard architectural pattern. **(10 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 behavior of MVC pattern with suitable sketches. **(09 Marks)**

 c. Highlight the limitations of PAC pattern. **(05 Marks)**

6 a. Explain in brief the components comprising the structure of microkernel architectural 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 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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Eighth Semester B.E. Degree Examination, June/July 2015
Software Architectures

Time: 3 hrs.   Max. Marks:100

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

PART – A

1 a. Define software architecture, with the help of neat block diagram of ABC (Architecture Business Cycle). Explain in detail the different activities which are involved in creating a software architecture? **(12 Marks)**
   b. Write short notes on:
      i)   Architectural patterns
      ii) Reference model
      iii) Reference architectures. **(08 Marks)**

2 a. Explain in detail about pipes and filters architectural style with types (invariants), advantages and disadvantages. **(10 Marks)**
   b. Explain in brief about KWIC (Keyword in Context) problem with abstract data types and implicit invocation styles to implement solutions. **(10 Marks)**

3 a. What are the qualities of system? Explain modifiability general scenario? **(10 Marks)**
   b. What do you mean by tactics? Explain the availability tactics with a neat diagram. **(10 Marks)**

4 a. Briefly explain pipes and filters architectural pattern benefits. **(08 Marks)**
   b. Define Blackboard architectural pattern. Briefly explain the steps used to implement the blackboard pattern. **(08 Marks)**
   c. Write a note on HEARSAY-II system. **(04 Marks)**

PART – B

5 a. Define Broker architectural pattern. Explain types of participating components which comprises it. **(10 Marks)**
   b. Explain with neat diagram, the dynamic scenarios of model view controller (MVC)? **(10 Marks)**

6 a. What are the steps involved in implementing microkernel system? **(12 Marks)**
   b. What are the benefits and liabilities of reflection architectural patterns? **(08 Marks)**

7 a. Discuss 5 steps in implementing Master-Slave pattern. **(10 Marks)**
   b. Discuss briefly implementation of whole-part-structure. **(08 Marks)**
   c. Mention benefits of proxy design pattern. **(02 Marks)**

8 a. Explain with neat diagram evolutionary delivery life cycle model. **(08 Marks)**
   b. What are the suggested standard organization points for interface documentation? **(12 Marks)**

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Eighth Semester B.E. Degree Examination, June/July 2014
Software Architecture

Time: 3 hrs. Max. Marks:100

Note: *Answer FIVE full questions, selecting atleast TWO question from each part.*

PART – A

1 a. With the help of next block diagram of ABC (architecture business cycle). Explain in detail the different activities which are involved in creating a software architecture. **(10 Marks)**
   b. Enumerate and explain in detail, the different groups of software architectures structure are categorized into, with the help of appropriate pictorial description. **(10 Marks)**

2 a. Explain in brief about KWIC (keyword in context) with shared data solution. **(10 Marks)**
   b. Explain in brief about pipes and filters style, with diagram. **(10 Marks)**

3 a. Explain what is availability? Explain general scenario for availability? **(10 Marks)**
   b. What do you mean by tactics? Explain availability tactics with neat diagram. **(10 Marks)**

4 a. What do you mean by architectural pattern? How it is categorized? Explain the structure part of the solution for ISO layered architecture. **(10 Marks)**
   b. Define blackboard architectural pattern? Briefly explain steps used to implement the black board pattern. **(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 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. Explain in brief about variants of whole – part – design pattern, in brief. **(10 Marks)**

8 a. Briefly explain the different steps performed while designing an architecture using the ADD method. **(10 Marks)**
   b. Write short notes any two of following :
      i) Forming team structures
      ii) Documenting across views
      iii) Documenting interfaces. **(10 Marks)**

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