

Name: Dharamraj Bhatt
Reg. No: 1947216

classmate

Date

Page

Software Architecture (MCA 531)

Component - 2

Ans 1a) architecture activities have comprehensive feed back relationship with each other.

~~Ans 1a)~~ These are the activities involved in creating software Architecture.

i) Creating the ~~Bus~~ Business case for the system

It is a broader than simply assessing the market need for the system. It is an important step in creating and constraining any feature requirements. Some of the questions which must involve while creating the system architecture are -

- i) How much should be product cost?
- ii) What is its targeted market?
- iii) What is its targeted time to market?
- iv) Will we need interface with other system?
- v) Are there any system limitations? etc.

ii) Understanding the requirement

One requirement understanding is one of the key components of software architecture building. One fundamental decision with respect to the system being built is the extent of which it is a variation of the other systems that have been constructed. Another technique that helps us to understand requirement is the creation of prototype.

iii) Creating or selecting the Architecture

Conceptual integrity is the key to sound system design and that conceptual integrity can only be had by a small number of minds coming ~~on~~ together to design the system architecture.

iv) ~~Communicating the architecture~~ Analyzing or evaluating the Architecture and communicating architecture

Evaluating an architecture for the qualities that it supports is essential to ensuring that the system constructed from architecture satisfies its stakeholder's need. Choosing the architecture is one of the greatest challenges - so communication or research on architectures is very essential.

v) Implement Based on architecture -

This activity is concerned with keeping the developers faithful to the structures and interaction protocols constrained by the architecture.

vi) Ensuring conformance to the architecture -

When architecture is created it goes into a maintenance phase. Constant vigilance is required to ensure that the actual architecture and its representation remain faithful to each other during this phase -

Ans 2a) Quality attribute or requirement depends on the system architecture more than on the functional requirements.

Achieving quality attributes must be considered throughout design, implementation must be and deployment. Architecture by itself is unable to achieve qualities. It provides the foundation for achieving quality but this foundation will be no available avail if attention is not paid to the details -

Types of quality attributes -

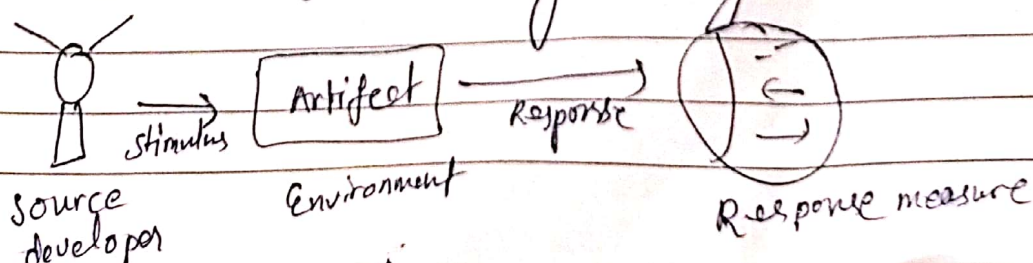
- 1) Qualities of the system.
- 2) Business qualities
- 3) Qualities that are about the architecture itself.

A quality attribute scenario is a quality attribute-specific requirement: it consists of 6 parts source of stimulus, stimulus, environment, artifact, response and response measure.

These are the quality attribute scenarios in practice -

i) Availability : availability is concerned with system failure and its associated consequences. A system failure occurs when the system no longer delivers a service consistent with its specification.

ii) Modifiability : - modifiability is about the cost of changes -



iii) Performance : performance is about timing, events (such as interrupt, message, request) occur and the system must respond to them.

Sample performance scenarios will have source as user, stimulus as transaction, Artifact as system, Environment as operation, response as transaction processed and response measure as average latency.

iv) Security : security is a measure of the system's ability to resist unauthorized usage while still providing its service to legitimate users.

v) Testability : - software testability refers to the ease with which software can be made to demonstrate its faults through testing. testability refers to the probability that system will fail on its next test execution.

vi) Usability : - Usability is concerned with how easy it is for the user to accomplish a desired task and a kind of user support the system provides.

Ans. 2 I worked project called "classroom quiz" which is a quiz portal to conduct a quiz for the student. It has mainly 2 character - a teacher and a student. In the portal a teacher can add the quiz by selecting the subject with quiz password for the student. Before this all users have to create an account for them. Only after log in the portal will allow the user to do their task according to the user type. A student can attend the quiz after logging in with the quiz password have to enter by user to attend that particular password. Student and teacher both can view the result on their Dashboard. It was an Django based project.

The architecture which I used for my project was "Spiral model." The spiral architecture combines the elements of both the architecture iterative and waterfall models, in effort to combine advantages of top-down and bottom-up production. It has four phases -

- 1) Identification
- 2) Design construct
- 3) Evaluation and risk
- 4) Risk Analysis

The main advantage of spiral model is risk analysis.

1947216

classmate

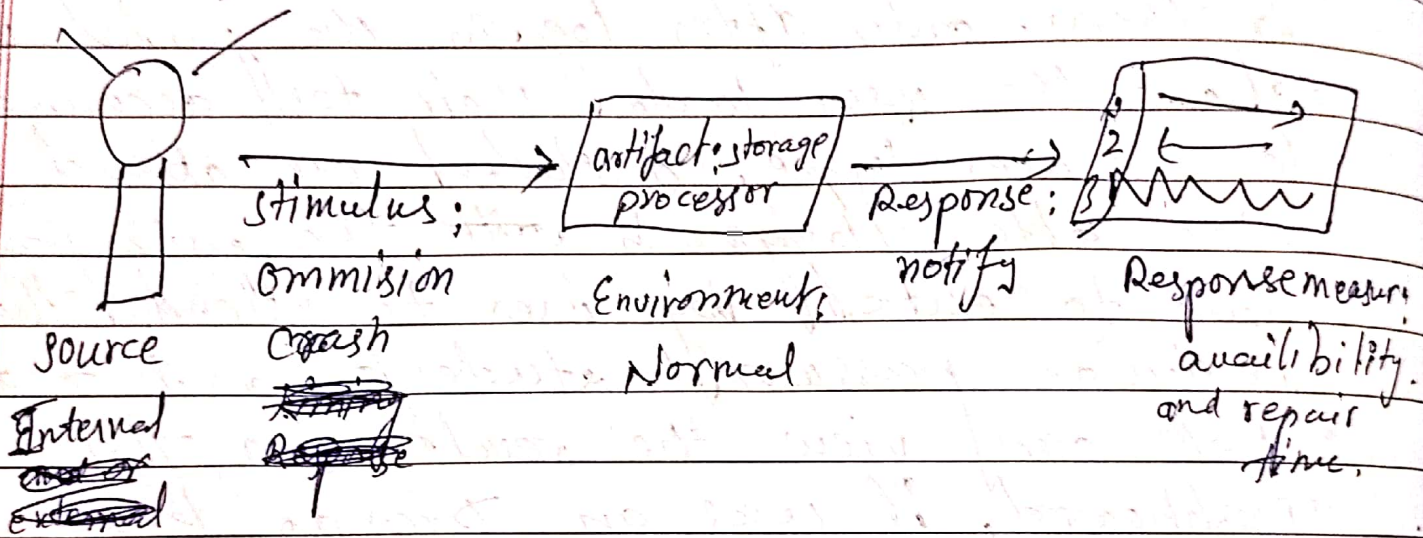
Date _____

Page _____

the specific scenario for "Availability"

Availability is concerned with system failure and its associated consequences.

The general scenario for Availability is here



End

Name: Dharamraj Bhatt
Reg. No: 1947216