**SOFTWARE ENGINEERING**

**MID-II QUESTION BANK**

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**UNIT II – REQUIREMENTS ENGINEERING & BUILDING ANALYSIS MODEL**

**ONE MARK QUESTIONS:**

1. What is Requirement Engineering?

It allows software engineers to provide the appropriate mechanism for

understanding & identifying the requirements.

1. What are various types of requirements comes in to play when building any software product?

1.Functional requirements

2.Non functional requirements

3.User interface requirements

4.Business requirements

1. What is meant by Requirement Validation?

It’s a process of ensuring the specified requirements meet customer needs.

1. What is meant by Requirement Management?

It speaks about managing the requirements & process the requirements in a feasible way.

1. What makes the Requirement Elicitation process difficult?

1.customers are not completely sure what is needed.

2.Requirements change over time.

1. \_formal technical reviews is the primary requirements validation mechanism?
2. Tracability tables relates requirements to one or more aspects of the system or its environment?
3. Define Quality Function Deployment?

It is a process used to determine the product development characteristics that combine technical requirements with customer preferences.

1. What is the work product of specification task in Requirement Engineering?

SRS Document

1. What are the elements of Analysis Model?

Scenario based,class based,flow based,behavioural based.

1. List out Analysis Modeling approaches?

Structural analysis,behavioural analysis.

1. What is meant by Cardinality?

It is specification of no.of occurrences of one object that can be related to no.of occurrences of another object.

1. What does Modality in data modeling indicates?

It is least no.of row connections.Modality is 0 if no explicit relationship to occur & modality is 1 if relationship occur.

1. Define Data Objects.

It is a representation of almost any composite information that must be understood by software.

1. List out the Factors of Data Modeling?

1.User interface

2.work flow

3.search

1. What is CRC in class based modeling?

Class Responsibility Collaborator which is used to identify the classes , objects & relation bw collaborators.

1. Define Analysis Package?

In software engineering,various elements of analysis model such as use cases,analysis classes are categorized in a manner that packages them as grouping.

1. Define Association and Dependency?

Association:It is a structural relationship that describes connection bw two things.

Dependency:It is a semantic relationship where a change in one thing causes a change in semantics of other thing.

1. Mention any two non-functional requirements of ATM application?

1.User must enter pin correctly within 3 attempts.

2.ATM can be shutdown & restarted.

1. Write functional requirements of Library Management System?

1. we can store the details of books & students.

2.we can keep a track of book issue details.

**TEN MARKS**

1. What is requirement engineering? State and explain all requirement engineering tasks in detail?
2. a) Discuss some of the problems that occur when requirements must be elicited from three or four different customers.

b) Explain quality function deployment in detail?

1. Briefly discuss each of the elements of an analysis model with neat sketch. Indicate what each contribute to the model, how each is unique and what general information is presented by each?
2. Develop a complete use-case for one of the following systems.
   1. Making withdrawal at ATM
   2. Using your charge card for a meal at a restaurant.
   3. Buying a stock using an online brokerage account
   4. Searching for books using an online bookstore.
3. You have been asked to build one of the following systems
   1. An online course registration system for your university
   2. A simple invoicing system for a small business
   3. A web based order processing system for a book store
   4. b) An ATM application

Select the system that is of your interest and describe data objects, relationships, and attributes.

1. What is the primary goal of Data modeling? Explain data modeling in detail with suitable examples?
2. What is the primary goal of class based modeling? Explain class based modeling with suitable examples?
3. Explain CRC Model in detail. And develop a complete set of CRC model index cards for the ATM system?

**UNIT III- DESIGN ENGINEERING, CREATING ARCHITECTURAL DESIGN & PERFORMING USER INTERFACE DESIGN**

**ONE MARK**

1. If a software design is not a program, then what is it?

It is a process that defines software functions,objects,methods & overall structure of code.

1. Do you design software when you write a program? What makes software design different from coding?

No.coding is translating program into computer code whereas design is description of logic which is used to solve the problem.

1. Provide any three examples of data abstractions and procedural abstractions?

Data abstractions : customers, product, orders.

Procedural abstractions : banking transactions, reservation system, online shopping

1. Describe software architecture in your own words.

It is a description of subsystems & components of software system & relationship bw them.

1. What is the primary goal of design engineering?

The goal of design process is production,where the product faces approval.

1. Describe the elements of design model?

1.Data design elements

2.Architectural design elements

3.Interface design elements

4.Component level diagram elements

5.Deployment level design elements

1. What are attributes proposed by Hewlett-Packard to assess the quality of software design?

F-functionality

U-useability

R-reliability

P-performance

S-supportability

1. It has been stated that \_\_software design modularity\_\_\_\_\_\_\_\_\_\_ is the single attribute of software that allows a program to be intellectually manageable.
2. The principle of information hiding suggests that modules be characterized by design decisions that hides from all others.
3. Functional independence is assessed using two qualitative criteria. What are they?

1.cohesion

2.coupling

1. What is refactoring?

It is a reorganization technique that simplifies the design of your component without changing its behavior.

1. List out any three recognizable architectural styles?

1.Data centered

2.Data flow

3.Object oriented

4.Layered

1. A data-centered architecture promotes integrability\_?
2. What does pipes and filters represents in pipe/filter structure that is used to describe the data-flow architecture?

Pipes for data flows, filters for components

1. Name any two recognizable patterns to handle concurrency problem?

1.Task scheduler

2.Operating system management

1. At the architectural design level, software architects uses an \_architectural context diagram\_ to model the system's context?
2. Name the various types of external systems those interact with the target system(software system being developed)

Super ordinate system, sub ordinate systems, actors, peers

1. What is Coupling?

It is defined as relatively inter dependency of other module.

1. What is Cohesion.

It is defined as relatively functional strength of your module.

1. What is user interface?

It is a part of software & is designed in such a way that it is expected to provide the user insight of the user.

1. What does user model establishes when we create user interface?

Users profile

1. What are four activities of user interface analysis and design process framework?

1.User task & environmental analysis modelling

2.Interface design

3.Interface construction

4Interface validation

1. Who is Novice User

User who doesn’t have syntax knowledge of the system & who has only little semantic knowledge.

1. Knowledgeable & Intermittent User.

User who has reasonable semantic knowledge of the application & relatively little syntactic knowledge.

1. Knowledgeable & Frequent User.

Good semantic & syntactic knowledge on application.

**TEN MARKS**

1. a) What does design engineering provides? Explain various design characteristics and quality guidelines?

b) Explain in detail about attributes proposed by Hewlett-Packard to assess the quality of software design?

1. State and explain the set of fundamental software design concepts in detail?
2. Explain in detail the design model and its elements with neat diagram?
3. State and explain various architectural styles and patterns in detail. Present two or three examples of applications for each of the architectural style?
4. Explain Theo Mandel's golden rules for creating good user interface design?
5. Explain in detail about user interface analysis and design process with neat sketch?