Name : Fardouse Lomat Jahan Rumpa

ID : 2219170041

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Ans to the Qus No: 01

Ans: System Design:

System design refers to the process of creating a detailed plan or blueprint for the architecture, components and funtionality of a software or hardware system. It involves making desisions about how different parts of the system will interact and work together to achieve the desired goals.

Input to system design typically include:

① **requirements:** Detailed specifications and functionalities that the system must fullfill.

② **Constraints:** limitations or restrictions on the system's design, such as hardware limitations, budget, time etc.

③ **User feedback:** input from potential users or stakeholders regarding their needs and expectatio

④ **Existing Systems:** Insights from previous system or prototypes that might influence the new design.

⑤ **Technology stack:** choice of programming languages, frameworks, and tools to be used in the system.

Outputs of System design include:

① System Architecture:

High-level structure of the system, including components, modules, and their interactions.

② Detailed Design: specific design decisions for each component, including data structures, algorithms and interfaces.

③ Data flow Diagrams:

Visual representations of how data moves through the system.

④ User interface:

Design of user interfaces, both graphical and functions.

These outputs serve as a foundation for the actual implementation phase of the system development process.

Ans to the Qus NO: 02

Ans: structured analysis and structured design are systematic approaches used in software engineering to develop and design software systems They offer several advantages:

Advantages of Structured Analysis:

① Clarity:
structured analysis breaks down complex systems into smaller, manageable components, making it easier to understand and communicate the system's requirements and functionalities.

② Modularity: The approach promotes modularity, which means that each component or module performs a specific function. This modularity enhances maintainability and ease of future updates.

③ Hierarchical structure:
It allows for a hierarchical representation of the system's components, showing their relationships and dependencies clearly.

④ Requirements Elication:

structured analysis focuses on understanding users needs and requirements, ensuring that the resulting system aligns closely with user expectations.

⑤ Reduced Errors: By breaking the system into smaller parts and focusing on one aspect at a time, structure analysis helps reduce the likelihood of errors and promotes better overall quality.

Advantages of structed Design:

① Reusability:

structured design emphasizes creating reusable modules or components, which can save time and effort in future projects by using similar modules.

② Maintainability:

The modular nature of structured design makes it easier to maintain and update the system.

③ Testing and debugging:

Since each module has a well-defined function, testing and debugging become more manageable.

④ Parallel Development:
Different modules can be designed and development independently, allowing for parallel development by different teams or developers.

⑤ Efficiency: By focusing on optimizing individua modules, structed design can lead to efficient code and resource usage.

⑥ Documentation:
The structured design approach encourages clear documentations of module specifications, interfaces and interactions, which aids in better understandi and collaboration.

Both structured analysis and structure design contribute to creating well-organized reliable and maintainable software systems.

They are particularly beneficial for large and complex projects where a disciplined and systematic approach is essential.

Ans to the Qus NO: 03

Ans: Analysis modelling is a crucial phase in software development, where the focus is on Understanding and documenting the require-ments and funtionalities of a system.

objectives of Analysis modelling:

① Requirements Elication;

The primary goal is to gather and understand the requirements of the system from stakeholders users, and other sources.

② problem Understanding:

Achieve a clear understanding of the problem domain, the user's needs, and the overall scope of the system.

③ Functional Specification:

Define the system's functionalities, including what it should do, its interfactions.

④ System Boundaries:

Determine the boundaries of the system. by identifying its interfaces with external entities and systems.

⑤ Conceptual Model:

Develop a conceptual model that represents the essential entities, relationships,

⑥ Requirements validation:

verify and validate the gathered requirement with stakeholders to ensure accuracy and completences.

Elements of Analysis Modelling:

→ Use Cases:
→ Activity Diagrams
→ Entity-Relationship Diagrams
→ Data Flow Diagrams.
→ State Transition Diagrams.
→ Class Diagrams.
→ Sequence Diagram.
→ Collaboration Diagrams.
→ Requirements Document.

Ans to the Qus NO:04

Ans: Advantages of bottom up budgets:

① Increased motivation due to ownership of the budget.

② Should contain better information since employees most familiar with the department set the budget.

③ Increase managers understanding and commitment.

④ Better communication between departments.

⑤ Senior managers can Concentrate on strategy.

Disadvantages of bottom up budgets:

① Senior managers may resent loss of control.

② Dysfunctional behaviour.

③ Bad Decisions from inexpericed managers.

④ Budget preparation is slow and disputes can arise.