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Unit: 5 System Modeling

4 questions

1. Define software. Discuss system modeling with suitable example.

hide solution
asked in 2072

Solution

Software is an organized collection of computer programs and associated documentation. A software system consist of a number of several programs, configuration files which are used to set of these programs and system documentations which describe the structure of system and user documentation which explain how to use the software.

System modeling is the process of developing abstract models of a system, with each model presenting a different view or perspective of that system. It is about representing a system using some kind of graphical notation, such as **Unified Modeling Language (UML)**. Models help the analyst to understand the functionality of the system; they are used to communicate with customers.

Models can explain the system from **different perspectives**:

- An **external** perspective, where we model the context or environment of the system.
- An **interaction** perspective, where we model the interactions between a system and its environment, or between the components of a system.
- A **structural** perspective, where we model the organization of a system or the structure of the data that is processed by the system.
- A **behavioral** perspective, where we model the dynamic behavior of the system and how it responds to events.

Five types of UML diagrams that are the most useful for system modeling:

- **Activity** diagrams, which show the activities involved in a process or in data processing.
- **Use case** diagrams, which show the interactions between a system and its environment.
- **Sequence** diagrams, which show interactions between actors and the system and between system components.
- **Class** diagrams, which show the object classes in the system and the associations between these classes.
- **State** diagrams, which show how the system reacts to internal and external events.

1. Explain system modeling with suitable example.

hide solution
asked in 2076

Solution

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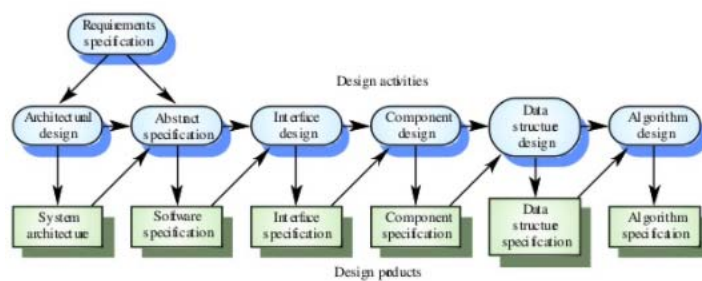
3. Explain the system design process.

 **hide solution**
asked in 2068

Solution

Systems design is the process of defining elements of a system like modules, architecture, components and their interfaces and data for a system based on the specified requirements. It is the process of defining, developing and designing systems which satisfies the specific needs and requirements of a business or organization.

System design process:



1. **Architectural design**, the sub system making the system and their relationship are identified.
2. **Abstract specification**, for each sub system, an abstract specification of its services and constraints is produced.
3. **Interface design**, for each sub system, its interfaces with others is designed.
4. **Component design**: services are allocated to the component and the interfaces for this component is designed.
5. **Data structure design**: the data structure used in this system are designed in detail.
6. **algorithm design**: the algorithm used in this system are designed in detail.

10. Differentiate between structural models and behavioral models.

asked in Model
Question

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