Research Activity

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A) What is UML?

Answer: Is a standardized modeling language consisting of an integrated set of diagrams, developed to help system and software developers for specifying, visualizing, constructing, and documenting the artifacts of software systems, as well as for business modeling and other non-software systems. The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.

B) Define the following UML diagrams (use case diagram, class diagram, sequence diagram, component diagram, layer diagram, state diagram, and structured diagram).

Answer.

Use Case Diagram: A use case diagram in UML is a graphical representation of the interactions between actors and a system. It illustrates the various use cases a system provides and the actors that interact with those use cases.

Class Diagram: A class diagram in UML is a static diagram that represents the structure of a system by showing the system's classes, their attributes, methods, and relationships between classes.

Sequence Diagram: A sequence diagram in UML is an interaction diagram that shows how processes operate with one another and in what order. It depicts the objects involved in the scenario and the sequence of messages exchanged between the objects.

Component Diagram: A component diagram in UML represents the components of a system and their dependencies. It shows how different components in a system are connected and interact with each other.

Layer Diagram: A layer diagram in UML represents the architecture of a system as a set of hierarchical layers. It shows how different layers of abstraction are organized and how they interact with each other.

State Diagram (or State Machine Diagram): A state diagram in UML represents the various states that an object can have and the transitions between those states. It's particularly useful for modeling the behavior of an object over time.

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Structure Diagram: A structure diagram in UML represents the static structure of a system by showing the components, relationships, and configurations of the system's elements. Examples include class diagrams, object diagrams, component diagrams, and deployment diagrams.

C) What is UML used for?

Answer: Helps project teams communicate, explore potential designs, and validate the architectural design of the software.

Referencias bibliográficas:

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