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The Design Patterns Certification training is designed for anyone who want to enhance their designing skills. The design pattern is a collection of language agnostic solutions to any common issues in software design. The patterns are shown interactions and relationships between objects and classes. Throughout this training, the delegates get to know how to speed up the development process by proven development paradigm. The delegates will learn the OOPs concepts which play an essential role in designing patterns.

The training provides information to the delegates related to fundamentals that are required for applying the Design Pattern Principles. The delegates will get familiar with the Unified Modeling Language. They get to know latest principles such as SRP, OCP, LSP, IS and DI. At the end of the Design Patterns Certification Training, the delegates will be able to handle the issue in case of wrong design patterns.

Design Pattern Types

Creational

The Creational Pattern is categorised into object creational patterns and class creational patterns. The class creational patterns are used in the instantiation process, and the creational object patterns are used in delegation effectively to get the job done.

Structural

The Structural Patterns are used to organize different objects and classes to form larger structures.

Behavioural

Behavioural patterns are used to recognize common communication patterns between the objects and realise these patterns.

Prerequisites

For Design Patterns Certification training, the delegates should have basic knowledge of the Object Oriented Programming concepts.

Course Objectives

- Understand how to use design pattern to address the issues of user interface
- How to apply the design principles such as dependency inversion, least knowledge and opened- closed

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- Learn how to identify the appropriate design pattern for given application design problem
- Understand how to apply the model-view-controller architectural pattern
- Critique code by recognising and refactoring anti-patterns
- Use behavioural patterns for better organisation and communication between the objects
- Use refactoring to compose the methods for proper code packaging

Introduction to Design patterns

In this module the delegates will learn the basic concepts of OOP and implementation of DAO and the factory patterns

- Introduction to Design Patterns
- Design Patterns using well defined UML Diagrams
- Understand concepts inheritance, Polymorphism, interface and Different Member Field Attributes
- Importance of Design patterns
- Introduction to different Classes of Design Patterns
- Implementing of DAO and Factory Pattern

Creational Design Patterns

In this module the delegates will get to know the Creational Design pattern approaches

- Understand the Abstract Factory
- Importance of builder and factory
- Learn about the Prototype, Object Pool and Singleton

Structural Design Patterns

In this module the delegates will learn the Structural Design pattern approaches and application using java code

- Importance of adapter, bridge in designing
- Understand the concepts of composite, decorator and façade
- Role of flyweight, MVC, front controller
- Learn about the proxy and module

Behavioral Design Patterns

In this module, the delegates will understand the Behavioral Design Pattern concepts

- Understand about the chain of responsibility
- Importance of command, Iterator and Mediator
- Role of strategy , template method, observe and visitor

Concurrency Design Patterns

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- Importance of half sync and followers
- Understand about the thread-specific storage scheduler and thread pool

Anti-Patterns

In this module, the delegates will get familiar with the negative results that are arises by applying the wrong design patterns

- Understand about the software Design Anti Patterns
- Overview of Management Anti Patterns
- Learn about the Software Development Anti Patterns

Refactoring

In this module, the delegates will understand the fundamentals that are required for applying the design patterns principles

- Understand the compose methods
- Role of the Move Features between Objects
- Learn about organising data, conditional expressions simplifications
- Understand the simplifying methods and generalization

Project and Retrospection

In this module, the delegates will learn the all concepts which are used to come up with scalable design for a given project

- Learn about the Iterator Pattern and Abstract Factory
- Understand the concept of Observe Design Pattern

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