SE001OOT – ***Introduction Basic Object-Oriented Concepts***

DURATION: 2 Days; Instructor-led

WHAT YOU WILL LEARN

Object-oriented technology is one of the most essential technologies adopted in many modern software and business development. This course is to equip students with basic understanding of the common terminologies of Object-Oriented technology.

At the end of the course, students will be able to

- Understand the basic Object-Oriented concepts.
- Appreciate the important of Object-Oriented Technology in various contexts.
- Use basic techniques in applying object-oriented technology

AUDIENCE

This course is designed generally for whoever interested in knowing the basic concept of Object-Oriented Technology, especially for programmers who are using Modern Object-Oriented based programing languages such as C++, Java, and .NET (C#, VB.NET). This course also suitable for OO Business Modeling.

PREREQUISITES

No prerequisites is required.

METHODOLOGY

This program will be conducted with interactive lectures, PowerPoint presentation, discussions and practical exercise

COURSE OUTLINES

Module 1 - Introduction

- Brief History
- Knowledge representation techniques
- Quality Assurance
- Modeling

Module 2 –The Important of Abstraction

- Software Complexity
- The principle of Information Hiding
- The "What" and "How"
- Decoupling

Module 3 – What is Object?

- Identity
- Tangible and intangible objects
- Simple and Complex objects
- Object Attributes
- Object Behavior
- Objects relationships
- Operations
- Method
- Interface

Module 4 – Classification

- Concept about things
- Concept as language vocabulary
- Language as tools
- Classification strategies
- Encapsulation – A special form of classification

Module 5 – Classes

- Relationship – IS-A/Kind-Of
- Instantiation
- Instance
- Direct vs. Indirect Instantiation
- Class Aspects
- Utility Class
- Multiplicity/Cardinality
- Relationship – Part-Of (Aggregation)
- Relationship – Part-Of (Composition)
- Relationship – Association
- Relationship – Dependency

Module 6 – Generalization

- Superclass
- Subclasses
- Inheritance
- Multiple Inheritance
- Class Taxonomy
- Foundation Classes
- Abstract Classes
- Terminal Classes
- Nested Classes

Module 7 - Specialization

- Specialization for Restriction
- Specialization for Extension
- Specialization for Overriding
- Polymorphism

Module 8 – Reusability in OO

- IS-A reuse
- Part-Of Reuse
- Pattern Reuse

Module 9 – Other Advantages of OOT

- Modularity
- Extensibility
- Synergy
- Industry Standards

Module 10 – The Applications of OO Technology

- Modern Programming Languages
- Software Engineering
- Databases
- Business Modeling