

Object Oriented Programming through JAVA

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Object Oriented Concepts through JAVA PROGRAMMING

Unit-1

Introduction to OOP, Procedural Programming Language and Object Oriented Language, principles of OOP, Applications of OOP, History of JAVA, JAVA features, JVM, program Structure. Variables, Primitive Data Types, Identifiers, Literals, Operators, Expressions, Precedence Rules and Associativity, Primitive Type Conversion and Casting, Flow of Control. Classes and Objects, Class declaration, Creating Objects, Methods, Method Overloading.

Unit-II

Constructor, Overloading, Garbage Collector, Importance of Static Keyword and this keywords, Examples, Arrays, Command Line Arguments, Nested Classes.

Inheritance & Polymorphism: Basic concepts of Inheritance, Member access, forms of inheritance- specialization, specification, construction, extension, limitation, combination, benefits of inheritance, Relationship, Creating Multilevel Hierarchy, super uses, using final with Inheritance, Polymorphism, Runtime polymorphism, pure polymorphism, method overriding, abstract classes & Methods, Object class

Packages: Defining a Package, PATH, CLASSPATH, Difference between PATH and CLASS PATH, Access protection, importing packages.

Unit-III

Interfaces: Defining an interface, implementing interfaces, Nested interfaces, variables in interfaces and extending interfaces, Multiple inheritances of interfaces, Difference between Abstract class & Interfaces.

Exception handling: Fundamentals of exception handling, Exception types, Termination or resumable models, Uncaught exceptions, using try and catch, multiple catch clauses, nested try statements, throw, throws and finally, built-in exceptions, creating own exception sub classes.

Multithreading: Thread Introduction, Differences between thread-based multitasking and process-based multitasking, Thread life cycle, creating threads using Thread class and Runnable Interface, Thread Priorities, synchronizing threads, inter thread communication.

Unit-IV

Files: Reading data from files and writing data to files, Random Access File

Applet: Applet class, Applet structure, Applet life cycle, Sample Applet programs. Event handling: Event delegation model, Sources of event, Event Listeners, Adapter classes, Inner classes.

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