Object Oriented Programming through JAVA

Authors

Dr. A. Ramaswami Reddy
Professor & Director, Department of CSE
Malla Reddy Engineering College
Campus 1, Maisammaguda
Secunderabad - 500 100 TS

Dr. M. Deena Babu
Professor, Department of CSE
Malla Reddy Engineering College
Campus 1, Maisammaguda
Secunderabad - 500 100 TS

Dr. P. Srinivas
Professor, Department of CSE
Malla Reddy Engineering College
Campus 1, Maisammaguda
Secunderabad - 500 100 TS

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Head Office

326/C, III Floor, Surneni Nilayam
Near B K Guda Park, S R Nagar, Hyderabad - 500 038, INDIA
P.No:+91 40 23710657, 238000657 Fax: +91 40 23810657

Reg. Off

5-68, Pedda Gorpadu, Pakala, Tirupati, Chittoor - 517 112 AP, INDIA
mail:studentshelpline.in@gmail.com
www.**studentshelpline.**org

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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, extenssion, 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 handing, Exception types, Termination or resumptive 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.

Object Oriented Concepts through JAVA PROGRAMMING

Chapter-I: Introduction to OOPS

Chapter-5: Exception Handling

Chapter-6: Multithreading