

Java SE

Introduction to Java

- JDK
- JRE

Discussion of Java features and OOPS Concepts

Installation of Netbeans IDE

Datatypes

- primitive data types
- non-primitive data types

Variable declaration

Operators

Control flow statements

Command line arguments

Passing command line arguments in Netbeans

Take input and display output

Arrays and Enhanced for loop

OOPS programming

- class and object
- various types of constructors
- instance methods and static methods
- use of this keyword
- use of super keyword
- inheritance
- polymorphism
- package and various scope rules
- abstract class and interfaces
- use of static, final keyword
- inner class
- anonymous class
- anonymous inner class

Exception handling

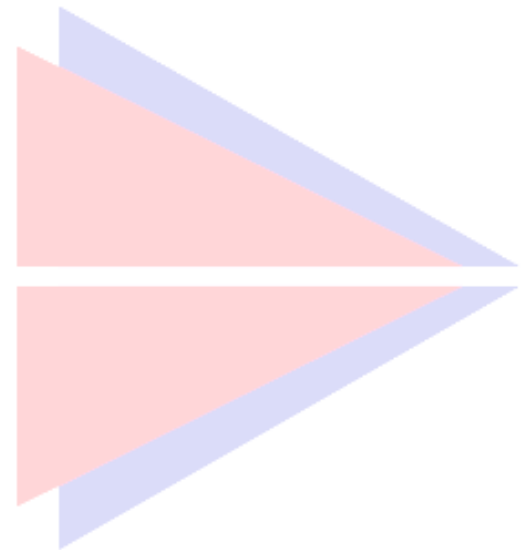
- try, catch, finally, throw, throws
- checked exception
- unchecked exception

String Handling

- mutable string
- immutable string
- String, StringBuilder, and StringBuffer
- Important Methods in the String Class

IO (Input and Output)

- byte stream
- character stream
- Working with Files and Directories
- bridge classes
- Object Serialization



Working with Date class

Generics and Collections

- List, Set, Map, Queue interface and its implementing classes
- Utility classes

Wrapper classes

Enums, Autoboxing, Unboxing and Annotations

Multithreading programming

- Thread class
- Runnable interface
- Synchronization
- Fork/join framework

GUI programming

- Difference between CUI and GUI
- Swing (various components and containers)
- Event handling
- Layout manager
- Applet through JApplet
- Drawing
- MDI (Multiple document interface)
- Develop GUI using Netbeans Drag n drop feature

JDBC (Java database connectivity)

- Type of drivers
- Basics of SQL
- executing SQL using statement
- executing SQL using preparedstatement

Socket programming

RMI (Remote method invocation)

XML programming in Java

Send email from Java application using JavaMail API

Use web service in Java application

Generate HTTP request from Java application

OpenJDK

Project

Java EE

Static website development

- Basics of Web
- Difference between static and dynamic website
- (X)HTML
- CSS
- Templates & Website Hosting
- JavaScript
- JQuery

Dynamic website development

Introduction to Java EE

Setting up the servlet container (Apache Tomcat) and IDE (Eclipse)

Discussion some important concepts from Java SE

- Annotations

Servlets

- Basics concepts in Java Servlet
- Life Cycle of Servlets
- Deployment Descriptor (web.xml)
- Calling servlets from servlets [get n post]
- Cookies, Sessions
- ServletContext, ServletConfig
- Response redirection
- Request Dispatcher
- Request Headers, Response Headers
- Status Codes
- Servlet collaboration: filtering and chaining

JSP (Java Server Pages)

- JSP Life Cycle
- Inbuilt objects
- JSP comments

- JSP expressions
- JSP scriptlets
- JSP declarations
- JSP directives
- JSP actions
- Working with Templates
- State management
- Java Beans

EL (Expression Language)

JSTL

JDBC (Java database connectivity)

- Type of drivers
- Basics of SQL
- executing SQL using statement
- executing SQL using preparedstatement

File uploading and downloading

XML programming

Sending email using JavaMail API

AJAX

Using Captcha

Web services

MVC (design pattern)

Struts 2

- Quick Start
- Configurations
- Actions & Form
- Interceptors
- UI tags
- Control tags
- Validators
- Data Tags
- Theme

Spring

- Introduction and architecture of Spring
- Inversion of Control container (dependency injection)

Hibernate

- Features of Hibernate
- Hibernate vs JDBC
- ORM and its Advantages

Project

