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