

# Core and Advance Java

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<b>Core and Advance Java</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Purpose:**

List and use Object Oriented Programming concepts for problem solving.  
 Write programs using Java collection API as well as the java standard class library.  
 Solve the inter-disciplinary applications using the concept of inheritance.  
 Apply JDBC to provide a program level interface for communicating with database using java programming.  
 Creating websites using servlet and JSP.

**Day 1**

Java Introduction and History  
 Basic Concepts of OOPS, Class, and Object in Java  
 Writing and executing simple 'Hello World' java program

**Day 2**

Naming Conventions Used in Java  
 Data Types in Java  
**1. Primitive Data types**  
**2. Non Primitive Data types**  
 Type Casting in java

**Day 3**

Concept of Wrapper classes  
 Different methods to take input from user  
 Making use of different decision making and loops statements

**Day 4**

Data Encapsulation and Abstraction in java  
 Introduction to Constructor  
 Types of Constructors  
 Constructor Overloading

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## Day 5

Copy Constructor  
Chaining of constructors  
This keyword  
Method overloading  
Introduction to Inheritance

## Day 6

Types of Inheritance  
Implementation of Single level, multilevel and hierarchal Inheritance  
Use of super keyword  
Method Overriding

## Day 7

Concept of access modifiers in java  
abstract keyword in java

- Abstract methods
- Abstract classes

## Day 8

final Keyword in java

- Final variables
- Final classes
- Final methods

## Day 9

Static keyword in java

- Static variables
- Static methods

Concept of Anonymous classes

## Day 10

Introduction to Array

- Types of array
- Implementation of single dimensional and multidimensional arrays
- Length property
- For each loop
- Jagged array

## Day 11

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The Object class  
Introduction to interface  
Implementation of interface  
Using interface references  
Extending Interfaces  
Implementing Multiple Interfaces

## Day 12

String Handling in java

- Different methods to create strings
- Use of length()

String Handling Methods

- String Comparison Methods
- Extracting String Characters
- Searching a character or substring in a string
- Modifying a String
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## Day 13

Exception Handling

- Types of Exceptions
- Displaying description of Exception
- Handling exception – use of try, catch, throw , throws and finally
- Handling Unreachable code error
- Checked and Unchecked Exceptions
- Different places to handle exceptions
- Throwing our own Exceptions

## Day 14

Multithreading in java

- Difference between multithreading and multitasking
- Thread class and Runnable interface
- The main thread

Creating Thread

- 1- Extending Thread class
- 2- Implementing Runnable Interface

Thread Life Cycle  
Using Thread Methods  
Thread Priority  
Synchronization

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## Day 15

Introduction to JDBC  
Types of JDBC Drivers  
Setting up the environment for JDBC  
Load the driver  
Create Connection with database

## Day 16

Executing SQL Queries  
Basic DML operations  
Use of Statement interface

- Use of executeQuery()
- Use of ResultSet

## Day 17

Use of ResultSetMetadata  
Use of executeUpdate()  
Executing insert, update and delete queries

## Day 18

Use of PreparedStatement Interface  
Different PreparedStatement methods  
Use of executeQuery()  
Use of executeUpdate()

## Day 19

Servlet and Client Server Communication  
Servlet Interface  
Methods of Servlet Interface  
create servlet using Servlet Interface  
web.xml (Deployment Descriptor)

## Day 20

GenericServlet  
create servlet using GenericServlet  
HttpServlet  
create servlet using HttpServlet class

## Day 21

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Use of Annotation in place of web.xml for Servlet Mapping Java Web Container and Deployment Descriptor Servlet Life Cycle Deployment Descriptor (web.xml) welcome-file-lis	
<b>Day 22</b>	
ServletRequest and ServletResponse ServletRequest Methods use of different methods of ServletRequest HttpServletRequest methods ServletResponse methods HttpServletResponse methods	
<b>Day 23</b>	
RequestDispatcher Interface Creating Object of RequestDispatcher Use of forward() and include methods LoginCheck servlet	
<b>Day 24</b>	
HttpServletResponse sendRedirect() method LoginCheck servlet using sendRedirect() ServletConfig Interface ServletConfig methods Implementation of ServletConfig methods	
<b>Day 25</b>	
HttpSession Interface Getting a reference to HttpSession HttpSession Methods create a session, check whether session is new or existing one, how to set expiry time for session, and how to get servlet creation and last accessed time Ending a session	
<b>Day 26</b>	
LoginCheck Servlet using sessions javax.servlet.http.Cookie Cookie's methods how to create cookies, how to send them to client, and how to access cookies from client	

# Core and Advance Java

## Day 27

Example - Automatic login using cookies  
URL Rewriting in Servlets

## Day 28

javax.servlet.Filter Interface  
Filter Methods  
Filter LifeCycle  
Registering Filter with servlet  
Implementing the concept of filters with servlets

## Day 29

JSP Introduction  
JSP API  
JSP LifeCycle  
JSP Tags and Directives

## Day 30

JDBC and Servlet Examples

- ask the user to login if the user is already registered, otherwise register yourself and then login based on the credentials specified at the time of registration.