

Core Java Syllabus

Understanding Object Oriented Paradigm and

Introduction

Features of Java Language.

Oops concepts (Realtime mapping).

Class and object

Inheritance

Encapsulation

Abstraction

Polymorphism

Message passing

Aggregation and composition

Type of Variable in OOPS

How to learn a Language (English Vs Java)

How to Define a class and it's Members

Building Process Of Java Program

Structure of source File

Environment Setup

Installing Java

JDK, JRE and JVM introduction

IDE Introduction (Eclipse OR Net beans

Running First Program on IDE and Command Prompt.

Static modifier

Path an ClassPath Environment variables

Naming Conventions

Java Language Fundamental

Datatype and wrapper classes

Variable , Operators

Read and write From User

Control Statements

Looping statement

Function's Intercommunication

Object Intercommunication

(Practice Assignments on above fundamentals)

Note: - After Completing this module Student Should be Able to Understand Flow of Controll in Object Oriented Paradigm

Inheritance

Implementation of Inheritance In java

Method Overloading and Overriding

(Implementation and Comparison)

static and Dynamic binding

Run time polymorphism

Up casting and Down casting

Instance of operator

Covariant return type

Access Modifiers and Packages

Organizing Classes and Interfaces in Packages.

Defining Package.

Import statement

Naming Convention For Packages

Private, Protected, Public, Default,

Java Code to Justify above accessibility

Making jar files for library use

Creating API Documentation (Javadoc tool)

Constructor

Definition and Use

Implementation and Understanding of Constructor Chain

Use of 'This' and 'super' keyword and operators

Object Class In java , toString() Method

Strictfp keyword

Some Modifiers

'final' for class and it's Members

'abstract' for class and member function

'static ' for members of a class (Revised)

Arrays and Strings in java

Defining and Processing Arrays
For-Each loop
Passing and returning Arrays from function
Array Class Study
Immutable meaning
Creating immutable Class
ConstantString pool introduction
Different ways to create String Objects
equals() and == operator for String
toString method
String, StringBuffer, StringBuilder and StringTokenizer

Interface

Introduction and application of Interfaces in Software Industries
Implementation of Interfaces in java

Exception Handling

Type Of Exception
Try, Catch , Finally , Throw , Throws application and implementation
User Define Exception

Multithreading

Introduction of Multithreading
Life Cycle of a Thread
Creating Threads Using Runnable Interface and Thread Class
Joining a Thread
Need of Synchronization and it's solution
Synchronized method and block
Controlling Resource allocation to multiple threads Using Wait() notify() notifyAll()
Deadlock introduction
User and Daemon threads
Thread Pooling
Thread group
ShutdownHook

File Handling in java

FileOutputStream & FileInputStream
FileWriter & FileReader
PrintStream class
PrintWriter class
Stream Tokenizer class

Serialization

Serializable interface
Marker interface
Serialization and deserialization practical implementation
transient Modifier

Some Advance feature

Java reflection API
Java Collections API
Object cloning
Garbage Collection
Comparable and Comparator
Varargs
Static import

Inner Classes

Member inner class
Anonymous inner class
Local inner class
Static inner class
Nested interfaces

JDBC

Database Fundamental
Introduction of Type-1, Type-2, Type-3
Implementation Of Type-4(Thin) Driver
Using Jars in java Project
CRUD Operation Using Statement , PreparedStatement, Callablestatement
Study Of ResultSet, ResultSetMetaData
Stored procedure and function
Transaction Management

AWT/Swing

*Various GUI Classes (Container and Components)
Layout Managers (Flow, Border, Box, Card ,Grid ,GridBag)
Event Handling Mechanism (Event Delegation Model)
Event classes and Listener Interfaces
Adapter classes
Using Netbeans GUI builder tool to rapid GUI development
Implementation of JFrame, JButton, JRadioButton, JTextArea, JTextField, JComboBox, JTable etc.
using dialog boxes and validations*

Applet

*Life Cycle of Applet
EventHandling in Applet
JApplet class
Painting in Applet*

Socket Programming and RMI

Introduction and implementation

