Smart Programming : You Tube Channel

An investment in Knowledge pays the best interest....

Java Syllabus

with Projects

Introduction

Java is a programming language created by James Gosling from Sun Microsystems (Sun) in 1991. The target of Java is to write a program once and then run this program on multiple operating systems. The Java platform is usually associated with the Java virtual machine and the Java core libraries

Java Syllabus

1. Introduction to Languages

» **Types of Languages**

» **Difference between C, C++ & Java**

» **Difference between Java & Python**

» **Various Domains in Java**

2. Introduction to Java

» **What is java**

» **History and features of java**

» JDK, JVM and JRE

» Deep architecture of JVM

» What is IDE, examples of IDE's

» Simple Hello java program

» Explanation of java program, compile and run

» Setting temporary and permanent of java classpath

» Program run by bat file

» INTERVIEW QUESTIONS

3. Programming Language Fundamentals

» Data Types

» Variables

» Tokens

    Keywords / Reserved Words

    Literals

    Operators

    Identifiers

4. Control Statements

» Conditional statements

» **Iteration/looping statements**

» **Jump statements**

» **50 Programs (including recursion)**

» **INTERVIEW QUESTIONS**

5. OOP's Concept

» **Class**

» **Methods**

» **Objects**

» **Constructors**

» **Inheritance**

» **Polymorphism**

» **Encapsulation**

» **Abstraction**

» **Interfaces**

» **Keywords (this, super, static, final, strictfp)**

» **Packages**

» **Access modifiers**

» **INTERVIEW QUESTIONS**

6. Exception Handling

» **Exceptions and errors classes with diagram**

» **Types of exceptions**

» **Checked and unchecked exceptions**

» **Control Flow In Exceptions**

» **try, catch, finally, throw, throws in Exception Handling**

» **In-built and User Defined (custom) Exceptions**

» **INTERVIEW QUESTIONS**

7. Strings

» **String class**

» **How to create String (3 ways)**

» **Methods of String class**

» **String constant pool**

» **Explanation of creating objects with new and without new keyword (with memory in heap and String constant pool)**

» **Garbage collection for strings**

» **StringBuffer and StringBuilder classes and methods**

» **Difference between String and StringBuffer and StringBuilder**

» **INTERVIEW QUESTIONS**

8. AWT and Swings (GUI Programming)

» **Different GUI technology in java**

» **Starting, relation of AWT and Swing**

» **Different classes of AWT and Swing with diagram**

» **Components and Containers**

» **Basics of Components**

» **Simple practical with notepad**

» **Adding a Menu to Window**

» **Drag and drop all**

» **Event handling**

» **INTERVIEW QUESTIONS**

9. Project 1

» **TicTacToe Game or Calculator**

10. File I/O and Serialization

» **I/O Streams**

Byte Stream

Character Stream

Buffered Stram

Data Stream

Object Stream

» **File class**

» **PrintStream class**

» **PrintWriter class**

» **Compressing & Decompressing file**

» **I/O Exceptions**

» **Serialization**

» **transient keyword**

» **Encryption and Decryption of file**

» **INTERVIEW QUESTIONS**

11. Project 2

» **Editor (Notepad)**

12. Multithreading and Synchronization

» **What is multithreading**

» **Life cycle of thread**

» **Creating of threads**

» **Other topics**

Calling a thread twice

Calling run() instead of start()

» Methods of thread (naming a thread, sleeping a thread,

daemon thread, joining a thread)

» Thread priority

» Interrupting a thread

» Performing single/multiple tasks from single/multiple thread

» Synchronization

synchronization block

static synchronization

inter-thread communication

» Robot class

» INTERVIEW QUESTIONS

13. Collections

» Collection Framework API and diagram

» Java Collection Interfaces

» Java Collection Classes

» Map Concept

» Difference between all the classes and interfaces

» Generics

» INTERVIEW QUESTIONS

14. Java JDBC

» SQL Queries

» What is JDBC

» JDBC API

» Steps to connect Java with MySQL Database using Statement,

» Deep Working of Java with Database

» PreparedStatement, ResultSet

» Transaction Management

» INTERVIEW QUESTIONS

15. Project 3

» Billing Software or KBC Game

16. Applets

» Applet Basics

» Graphics in applet

» Image in applet

» Animation in applet

» **Event handling in applet**

17. Project 4

» **Digital Clock or Car Racing Game**

OTHER DESKTOP APPLICATION PROJECTS

Tic-Tac-Toe game

Puzzle game

Pic-Puzzle game

Digital Clock

Calculator

Analog clock

Car racing game

Catch the fruit game

Bouncing ball game

Chat server

Route mapping

Company architecture

Employee payroll

College placement cell

Online examination

Book Shop

Billing Software

Contact Book

Attendance System

Doctor Hospital management

KBC Game

Image Compression and De-compression

Mobile Sampling of Sensor Field Data

Digital Encryption System

Project Metrics

Secure Data Transmission

ERP System

Credit Card Management System

Distributed Transaction Proxy

Online University

Company Security Reporting System

Ezee Mail System

Online Crime file Management

And Many More projects…….
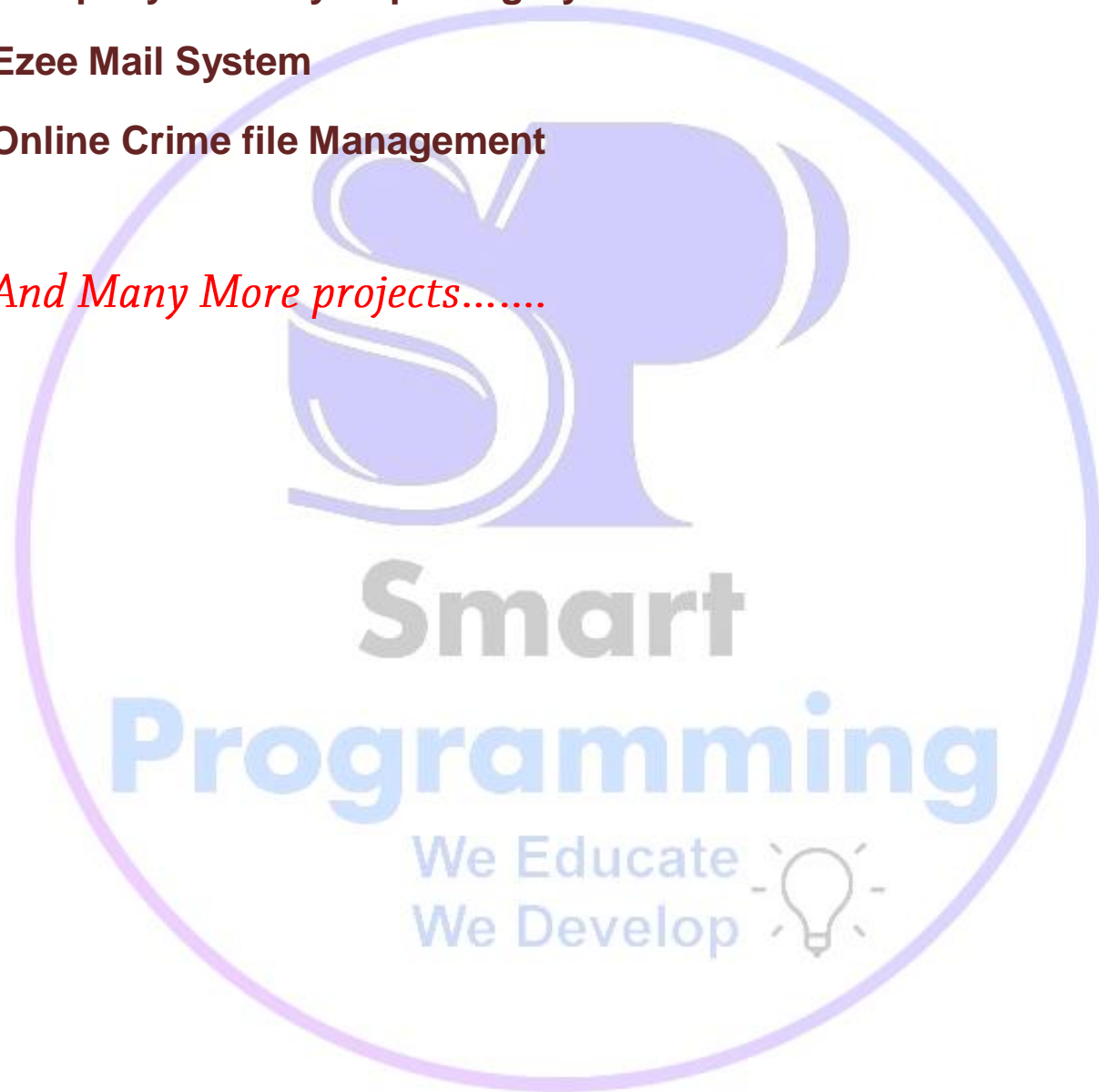
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