Java Essentials: Build Your First Application in Just 2 Hours!

Online Workshop for Beginners

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Workshop Overview

- **Objective:** Learn the fundamentals of Java and build a working application.
- **Duration:** 2 hours
- **Mode:** Online
- **Certificate of Participation**
- **What You'll Learn:**
  - Java Basics
  - Hands-on Coding
  - Application Development

Why Learn Java?

- **Versatile Language:** Used for web, mobile, and enterprise applications.
- **Platform Independent:** "Write Once, Run Anywhere."
- **In-Demand Skill:** Opens up career opportunities in software development.
- **Foundation for Advanced Programming:** Learn Object-Oriented Programming principles

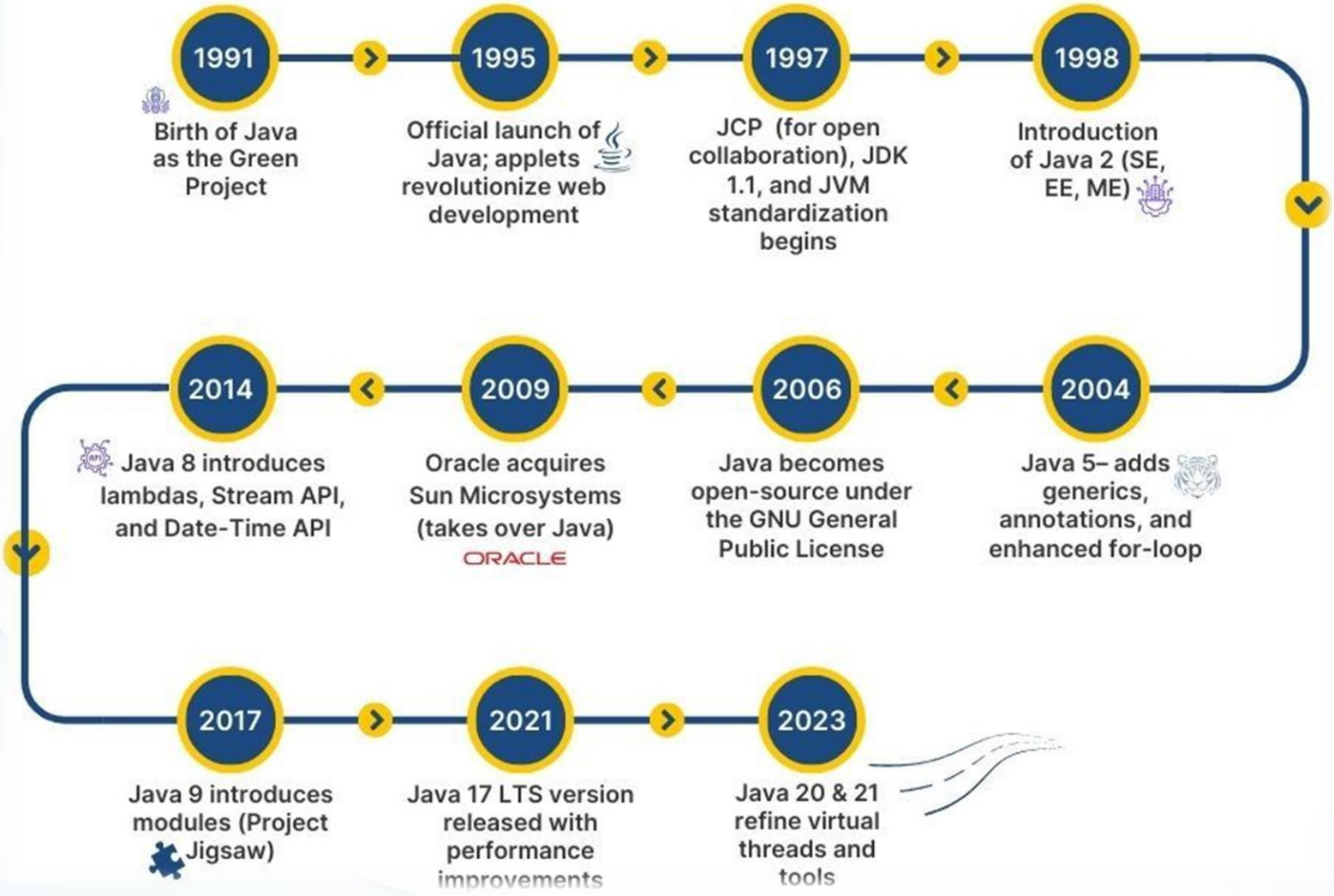
Agenda

1. Introduction to Java (10 mins)
2. Setting Up the Development Environment (20 mins)
3. Java Basics & Hands-On Coding (45 mins)
4. Project: Build a Todo App(30 mins)
5. Q&A and Feedback (15 mins)

Introduction to Java

- **History of Java**
- **Key Features:**
  - Object-Oriented
  - Secure and Robust
  - Multithreaded
- **Real-World Applications:**
  - Android Development
  - Web Applications
  - Enterprise Systems

Timeline– History Of Java



Setting Up Your Environment

Step 1: Download & Install JDK

Visit oracle.com/java or OpenJDK.

Install the JDK and configure PATH variables.

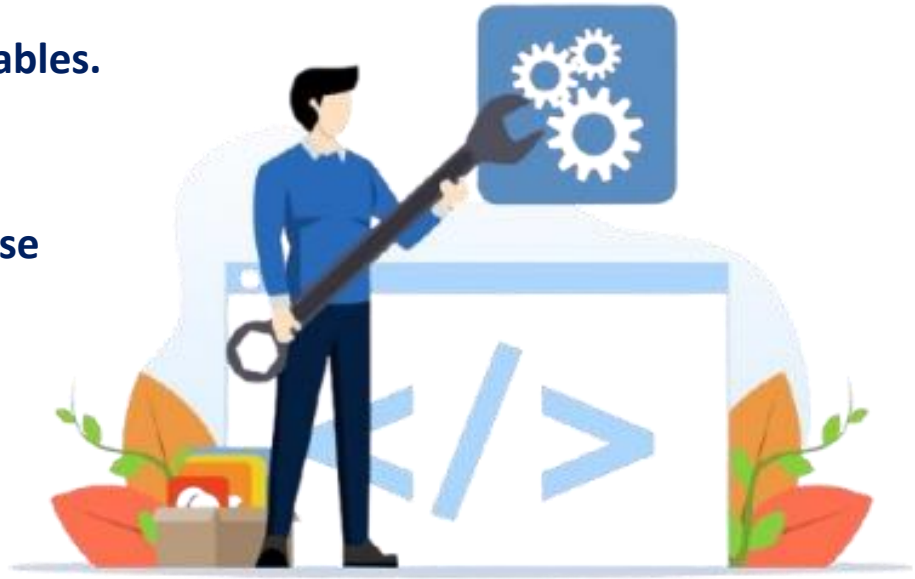
Step 2: Install an IDE

Recommended IDEs: IntelliJ IDEA, Eclipse

Set up a new project: MyFirstJavaApp

Step 3: Verify Setup

Run this code:



```
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

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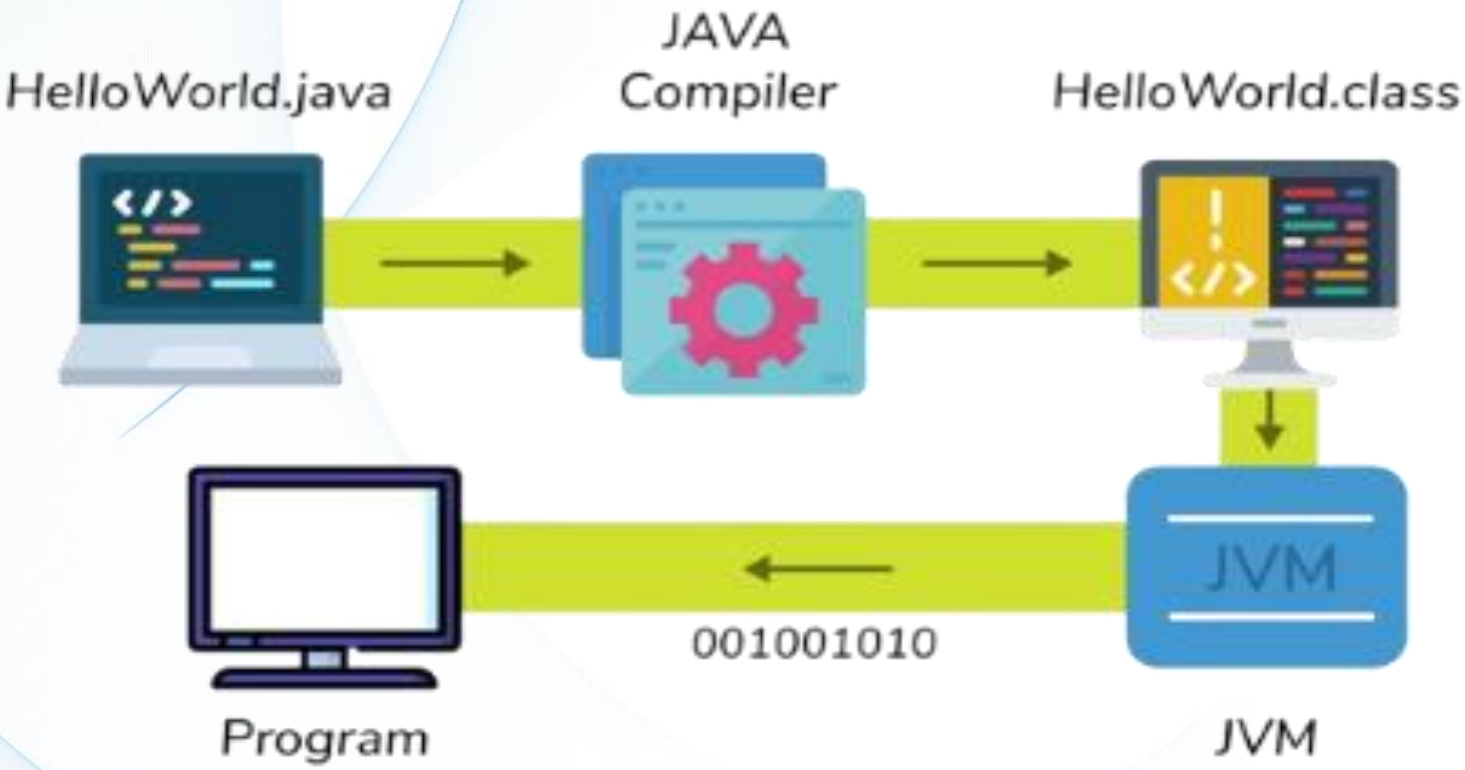
How Java Code Executes



Java Basics

- Variables and Data Types: int, double, String, boolean
- Control Structures:
  - If-Else
  - Switch Case
  - For Loops

Hands-On Activity

Task-1 : Find the Simple Interest

Task-2 : Check a Number is Even or Not

Task-3 : Student Grade System

Task 4 : Find Multiplication Table of a given Range

Task 5 : Manage List of Numbers

Task 6 : Mange Books

Project: Build a Todo App

Task-1 : Introduction to the Todo App

Task-2 : Planning and Requirements

Task-3 : Application Architecture

Task 4 : Step-by-Step Implementation

Task 5 : Demo

Introduction to the Todo App

A Todo App helps users manage their tasks effectively.

Features:

- Add, edit, and delete tasks
- Mark tasks as completed
- Display tasks in an organized way

Technology Used :

- Frontend: Java Console
- Backend: Data stored using ArrayList

Planning and Requirements

1. **Understand the problem statement**
2. **Define core features:**
   - Add Task
   - Edit Task
   - Delete Task
   - View All Tasks
   - Mark Task as Completed

3. **Create a wireframe or design layout for the app.**
4. **Choose the technology stack.**

Application Architecture

- Input :
  - Task Details Input
  - Selection of Operation : Add, Edit, Delete
- Task List Display:
  - Show all tasks
- Event Handling:
  - Action Listeners for user interactions
- Data Management:
  - ArrayList for storing task objects

Implementation

Step-1 : Set up the project structure.

Step-2 : Create a Task class with attributes: ID, Description, Status.

Step-3 : Design the program using Java.

Step-4 : Implement different Operation (Add, Edit, Delete).

Step-5 : Use an ArrayList to store and manage tasks.

Step-6 : Update the User Interface dynamically based on user actions.

Q&A and Feedback

- **Resources Provided:**
  - Workshop Notes
  - Sample Projects
- **Next Steps:**
  - Continue learning Java
  - Practice coding challenges

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Thank You