

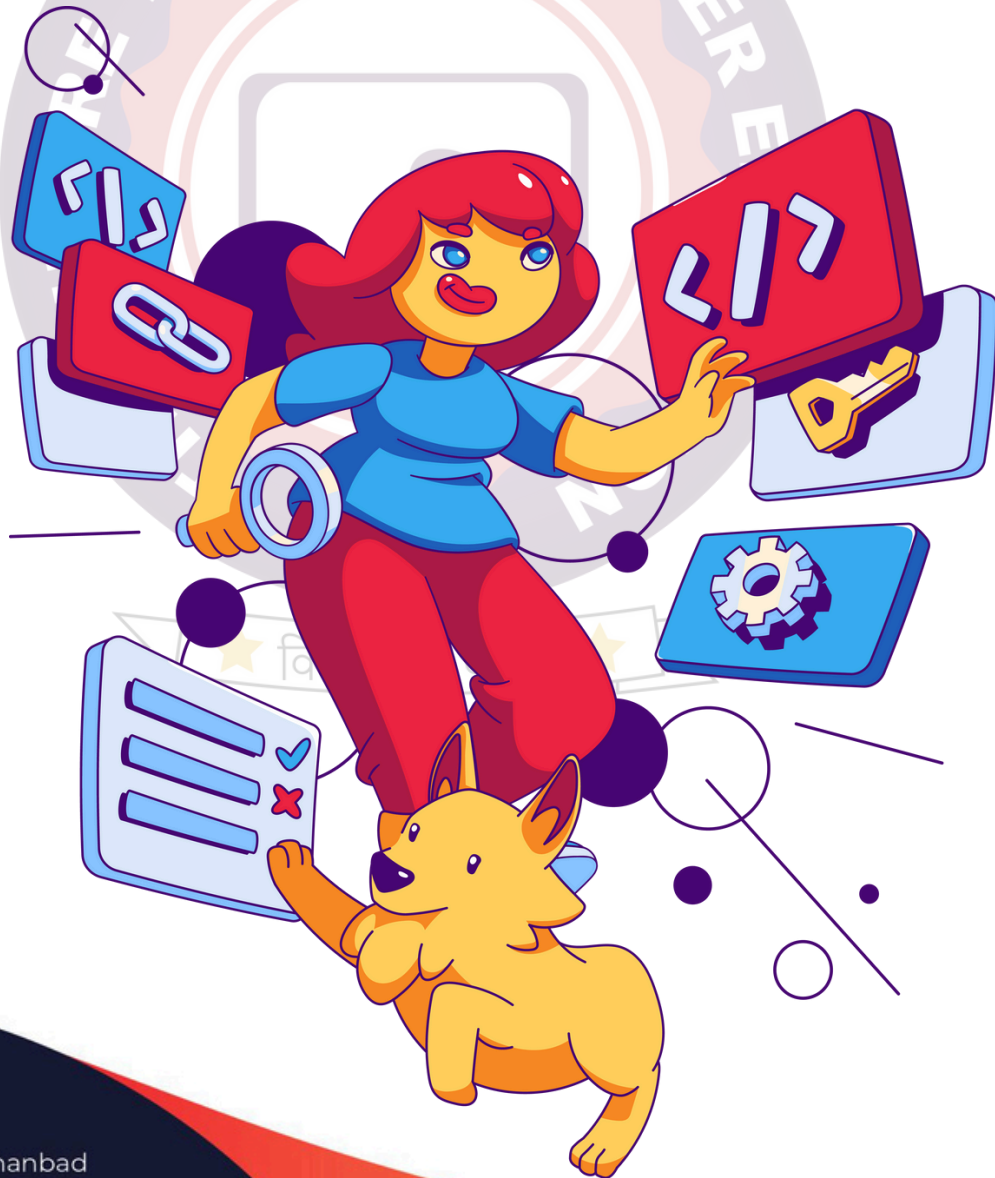
# THE FUTURE TRACK

## COMPUTER EDUCATION



# Java

# Course



City Centre ,Dhanbad

+91 930 887 7375 , +91 620 326 9614

raushankmr75@gmail.com

WWW.THEFUTURETRACK.COM

# JAVA PROGRAMMING

## INTRODUCTION TO JAVA

- Overview of Java Programming Language
- Why Java?
- Applications of Java

## HISTORY OF JAVA

- Origin of Java
- Evolution of Java (Java Versions)
- Java's role in modern programming

## JAVA FEATURES

- Object-Oriented
- Platform Independent (WORA)
- Secure, Robust, and Simple
- Multithreading and Memory Management
- Performance and Portability

## JAVA VS C++

- Key Differences Between Java and C++
- Syntax and Memory Management
- Object-Oriented Features Comparison

## JAVA VIRTUAL MACHINE (JVM)

- Architecture of JVM
- How Java Compiles and Executes Code
- JVM Components and Working

## JAVA DEVELOPMENT KIT (JDK)

- JDK, JRE, and JVM Overview
- Installing JDK
- Java Development Tools (javac, java, etc.)

# JAVA PROGRAMMING

## JAVA HELLO WORLD PROGRAM

- Writing, Compiling, and Running Java Programs
- Explanation of Main Method
- Understanding Syntax

## JAVA VARIABLE TYPES

- Variable Declarations
- Local, Instance, and Class Variables
- Scope and Lifetime of Variables

## JAVA DATA TYPES

- Primitive Data Types (int, float, char, etc.)
- Non-Primitive Data Types (Objects, Arrays)
- Type Conversions and Casting

## JAVA TYPE CASTING

- Implicit and Explicit Type Casting
- Examples of Casting Between Data Types

## JAVA BASIC OPERATORS

- Arithmetic, Relational, Logical Operators
- Assignment, Increment/Decrement Operators
- Operator Precedence and Associativity

## JAVA COMMENTS

- Single-Line and Multi-Line Comments
- Documentation Comments

## JAVA USER INPUT

- Using Scanner Class
- Input Methods for Different Data Types

# JAVA PROGRAMMING

## JAVA LOOP CONTROL

- Overview of Loops
- Iterative Control with Loops

## JAVA DECISION MAKING

- Conditional Statements Overview
- Using **if-else** and **switch** Statements

## JAVA IF-ELSE

- Syntax and Usage of **if**, **else if**, and **else**
- Nested if-else Statements

## JAVA SWITCH

- Syntax and Structure of **switch**
- Comparing **switch** with **if-else**

## JAVA FOR LOOP

- Structure and Usage
- For-each Loop for Arrays

## JAVA WHILE LOOP

- Syntax and Use Cases
- Infinite Loop Handling

## JAVA DO-WHILE LOOP

- Syntax and Use Cases
- Difference between **while** and **do-while**

## JAVA BREAK

- Using **break** in Loops and Switch Statements
- Exit from a Block of Code

# JAVA PROGRAMMING

## JAVA CONTINUE

- Skipping the Current Iteration
- Using `continue` with Loops

## OBJECT-ORIENTED PROGRAMMING IN JAVA

- Concepts of OOP (Encapsulation, Inheritance, Polymorphism)
- Classes and Objects in Java

## JAVA OOPS CONCEPTS

- Understanding OOP Concepts in Java
- Benefits and Implementation in Real Projects

## JAVA OBJECTS AND CLASSES

- Defining Classes and Objects
- Methods and Object Behavior

## JAVA CONSTRUCTORS

- Constructor Definition
- Types of Constructors (Default, Parameterized)

## JAVA ACCESS MODIFIERS

- Private, Public, Protected, and Default
- Access Control in Different Scenarios

## JAVA INHERITANCE

- Single and Multiple Inheritance
- Super Keyword and Overriding

## JAVA POLYMORPHISM

- Static and Dynamic Polymorphism
- Method Overloading and Overriding

# JAVA PROGRAMMING

## JAVA ENCAPSULATION

- Concept of Encapsulation
- Access Modifiers for Data Hiding

## JAVA OVERRIDING

- Method Overriding in Java
- Rules for Method Overriding

## METHOD OVERRIDING

- Overriding in Parent-Child Classes
- Practical Implementation

## JAVA NUMBER CLASS

- Handling Numeric Data in Java
- Wrapper Classes for Primitive Types

## JAVA BOOLEAN

- Working with Boolean Data Types
- Boolean Expressions in Decision Making

