

# Java Brief Summary

## a) Benefits of OOP:

- Inheritance for code reusability
- Encapsulation for data protection
- Polymorphism for flexible code
- Abstraction to hide complexity
- Organized, scalable code

## b) Java Tokens:

- Keywords, Identifiers, Literals, Operators, Separators

## c) Data Types in Java:

- Primitive: byte, short, int, long, float, double, char, boolean
- Non-primitive: String, Array, Class, Interface

## d) String Functions:

- length(), charAt(), substring(), toUpperCase(), toLowerCase(), equals(), compareTo(), indexOf()

## e) Accessing System package:

- java.lang imported by default
- Use directly: System.out.println("Hello");

## f) Importance of Interfaces:

- Provide full abstraction
- Support multiple inheritance
- Define contracts for classes
- Used in event handling and APIs

## g) Applet vs Application:

Applet: runs in browser, no main(), sandboxed

Application: standalone JVM, main() required, full access

## h) Rectangle in Graphics:

- drawRect(x, y, width, height) for outline
- fillRect(x, y, width, height) for filled rectangle