INTRODUCTION TO JAVA

About Java

Development: Created by James Gosling at Sun Microsystems in 1995.

Features:

- **Simple:** Easy to learn syntax.
- **Object-Oriented:** Supports modular, reusable code.
- **Platform-Independent:** Runs anywhere with JVM (Write Once, Run Anywhere - WORA).
- **Secure:** Provides secure execution with memory management, exception handling, and access control.

Introduction to JDoodle

What is JDoodle?: An online tool to run Java code

- **No Installation:** Start coding without installing Java.
- **User-Friendly:** Simple editor and compile/run buttons.
- **Instant Feedback:** One-click compile and run with instant output.
- **Free to Use:** Free tier available, paid options for advanced features.

Displaying Text on the Screen

Command: 'System.out.println'

Example: System.out.println("Hello, World!");

Explanation:

'System.out.println' Prints the text.

'()' Encloses the Output

'"" ' Encloses the exact text.

';' Ends the instruction.

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Breaking Down Code

- **Misspelling:** System.out.prinln should be System.out.println.
- **Missing Semicolons:** System.out.println("Hello World") should be System.out.println("Hello World");.
- **Mismatched Parentheses and Quotes:** Ensure they are properly closed.
- **Incorrect Main Method Declaration:** Should be public static void main(String[] args).
- **Case Sensitivity:** System not system.
- **Braces:** Always include {} around code blocks.

How to Search for Errors

- **Copy Error Message:** Copy and paste the error message.
- **Ask ChatGPT:** Paste the error in ChatGPT for help.
- **Read and Implement Solution:** Understand and apply the suggested fix.
- **Verify Fix:** Run the program again.

Printing Examples

Printing Text:
System.out.println("This is a string.");

Printing Numbers:

```
System.out.println(123); // Integer
System.out.println(45.67); // Floating-
point number
  }
  return go(f, seed, [])
}
```

New Lines with '\n':
'System.out.print("Hello,\nWorld!");'

Using 'print':

```
System.out.print("Hello, ");
System.out.print("World!");
```

Combining All:

```
public class Main {
    public static void main(String[] args) {
        System.out.println("Hello, World!"); //Hello, World!
        System.out.println(42); //42
        System.out.println(3.14); //3.14
        System.out.print("This is ");
        System.out.print("on the same line."); //This is on the same line.
    }
}
```

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Error Solution Using Stack Overflow

- **Search:** Look for existing solutions.
- **Ask a Question:** Clearly describe your issue.
- **Example:** Search ';' expected on Stack Overflow.

Additional Java Features

- **Open Source:** Community support and shared knowledge.
- **Fully Documented:** Extensive guides and solutions.
- **Versatility:** Suitable for web development, mobile apps, enterprise solutions, cloud computing, and IoT.

Breaking Down Code

Class: A container for instructions.

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

Code Breakdown:

- 'public' : Accessible to anyone.
- 'class' : Defines a class.
- 'MyClass' : Name of the class.
- '{}' : Defines the start and end of the class.
- 'public static void main(String[] args)': Entry point of the program
  - 'public': Accessible to anyone.
  - 'static': Method that belongs to the class.
  - 'void': No return value.
  - 'main': Starting point.
  - '(String[] args)': Array of arguments.
- 'System.out.println("Hello, world!");' : Prints "Hello, world!".