JAVA FOUNDATIONS 1Z0-811

ORACLE ACADEMY

2 DE SEPTIEMBRE DE 2025

https://academy.oracle.com/

HTTPS://GITHUB.COM/ISC-UPA/2025-3-TIID3C-POO

Juan Carlos Herrera H.

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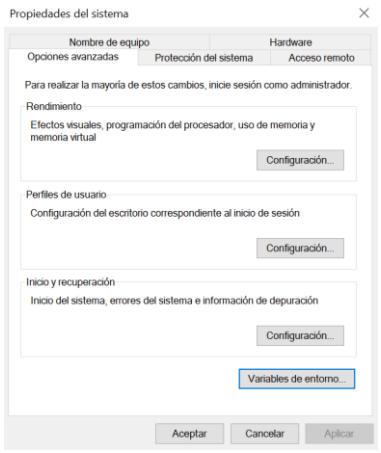
1. Introduction

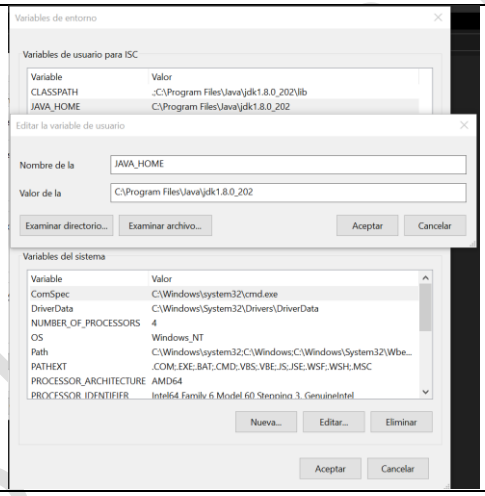
1.1. Technological Requirements:

Java JDK https://www.oracle.com/java/technologies/downloads/ jdk-8u202-windows-x64.exe
VS Code https://code.visualstudio.com/Download VSCodeSetup-x64-1.103.2.exe
Extensions: **Extension Pack for Java**

Integrated Development Environment (IDE)
Eclipse IDE: https://www.eclipse.org/downloads/packages/
NetBeans IDE https://netbeans.apache.org/download/index.html

Variables de entorno





Panel de control -> Sistema -> Configuracion avanzada del sistema
Opciones avanzadas -> Variables de entorno -> Variables de Usuario

JAVA_HOME C:\Program Files\Java\jdk1.8.0_202	PATH %JAVA_HOME%\BIN
CLASSPATH **.;** %JAVA_HOME%\LIB	Probar Instalación desde CMD C:\>java -version (correr) C:\>javac -version (compilar)

```
C:\dev>java -version
java version "1.8.0_202"

C:\dev>javac -version
javac 1.8.0_202

C:\dev\poo>javac Hola.java

C:\dev\poo>java Hola
Hello World!
```

```
public class Hola {

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

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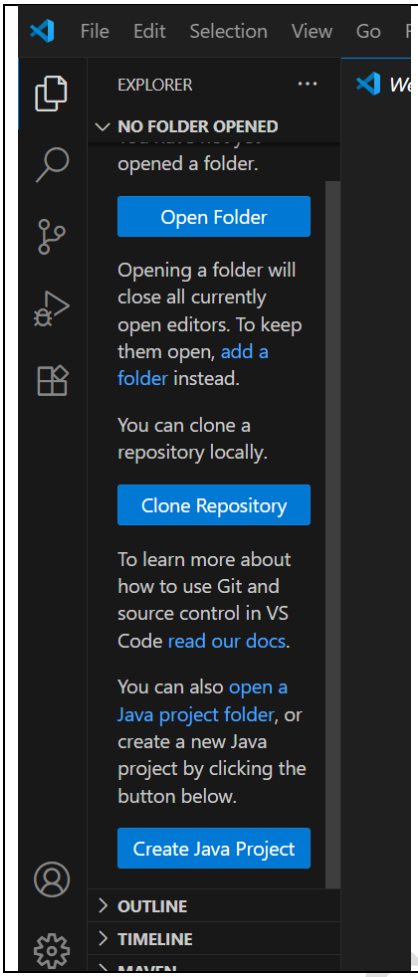
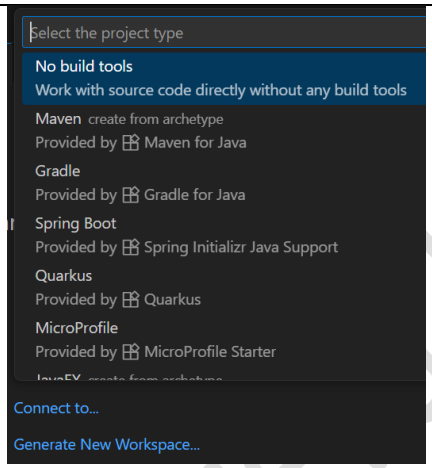
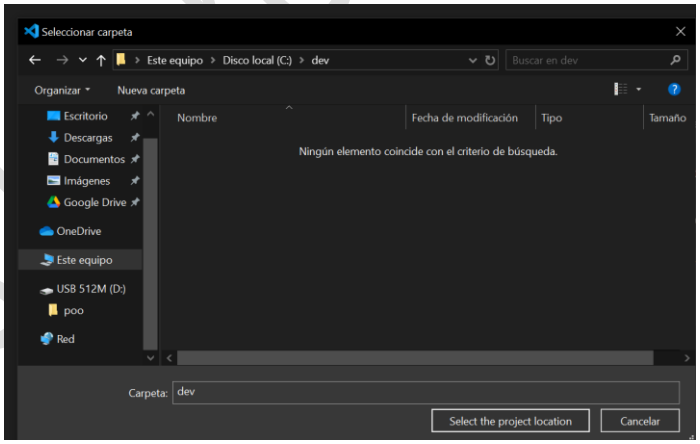
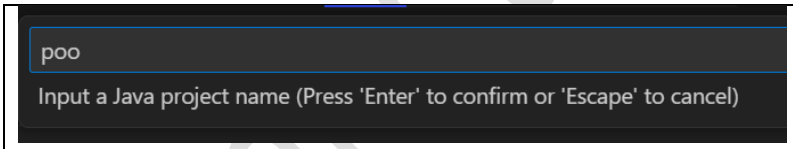
Crear un Directorio de trabajo
C:\> mkdir dev
C:\dev>

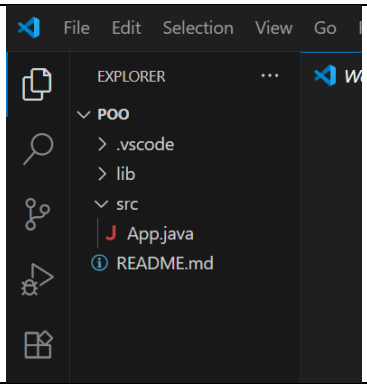
1.2. Create Java Project:

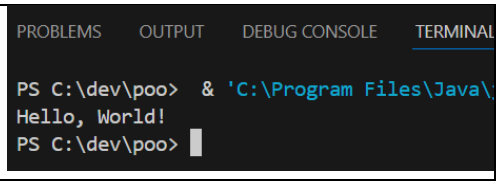












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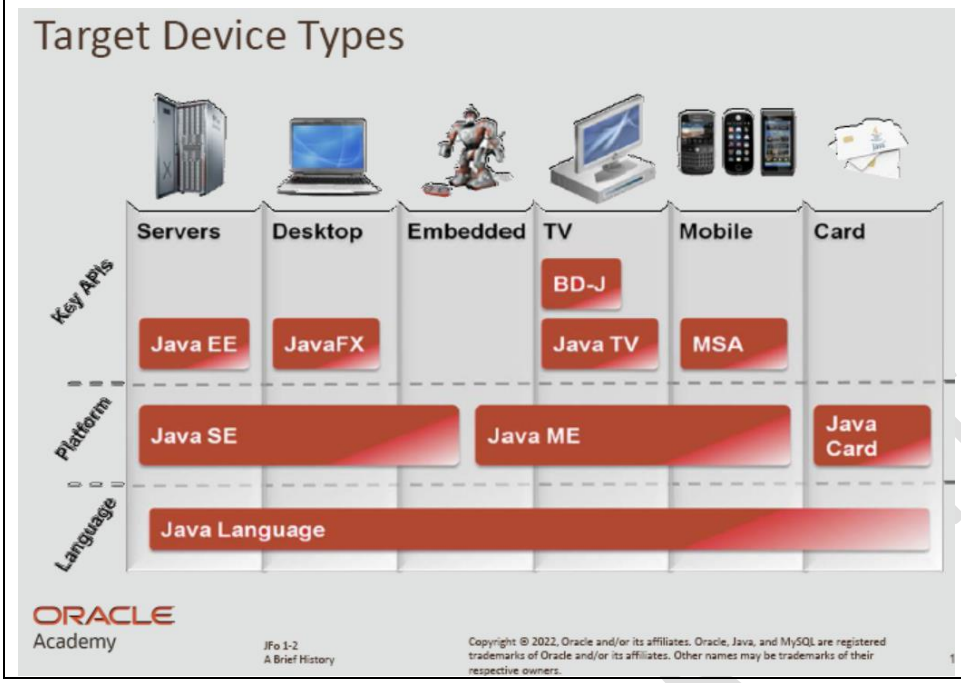
1.3. Setting Up Java

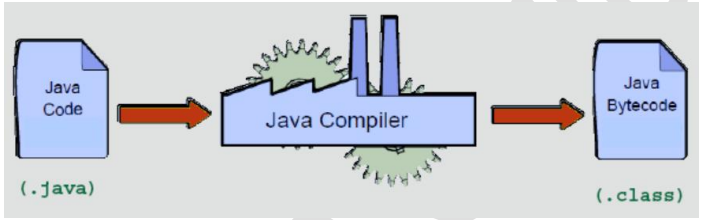
James Gosling is considered the “Father of Java”. Duke, the Java Mascot.

Oracle acquired Sun Microsystems in 2010, and released JDK 7 in 2011, and JDK 8 in 2014.

Jakarta EE Is used to create large enterprise, server-side, and client-side distributed applications



Java is Platform-Independent



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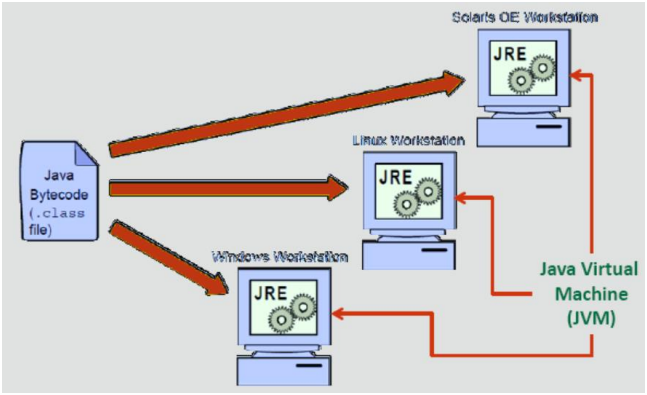
Java Programs Run in a JVM



Java Runtime Environment (JRE) Includes: • The Java Virtual Machine (JVM) • Java class libraries Purpose: • Read bytecode (.class) • Run the same bytecode anywhere with a JVM	Java Development Kit (JDK) Includes: • JRE Java Compiler • Additional tools Purpose: Compile bytecode (.java .class)

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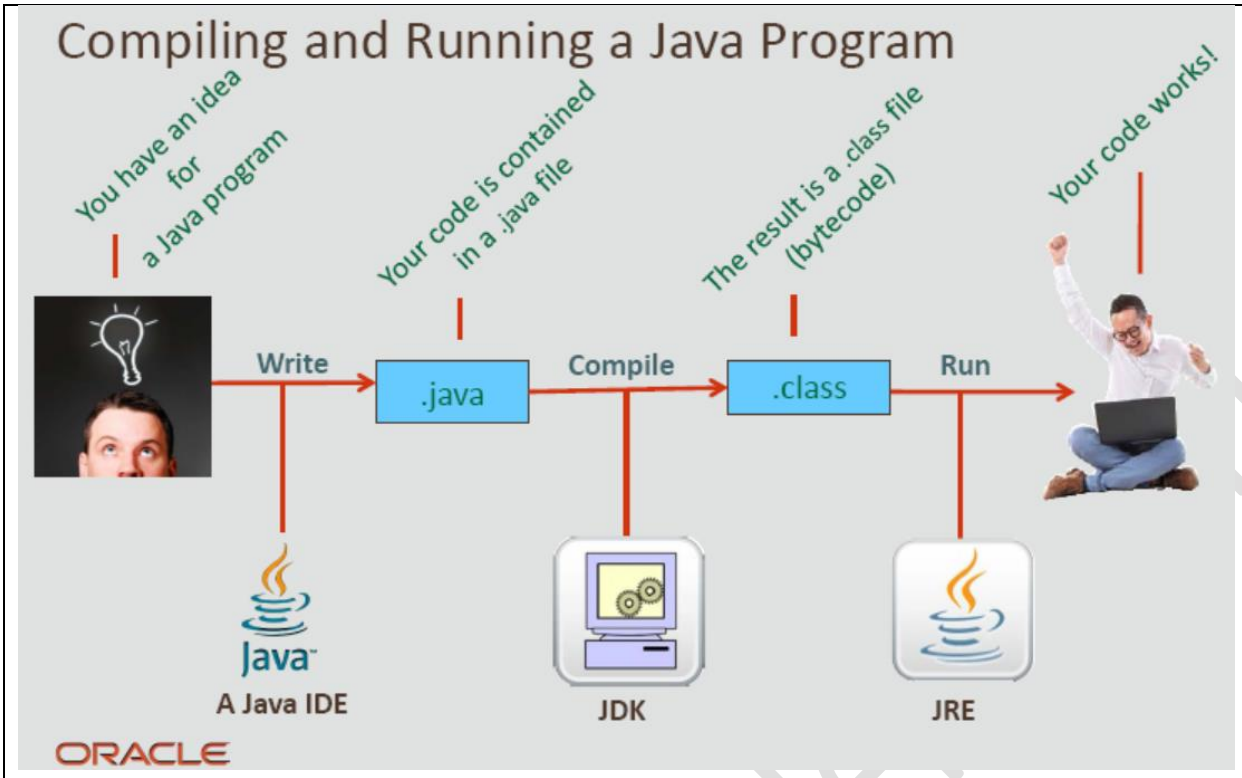
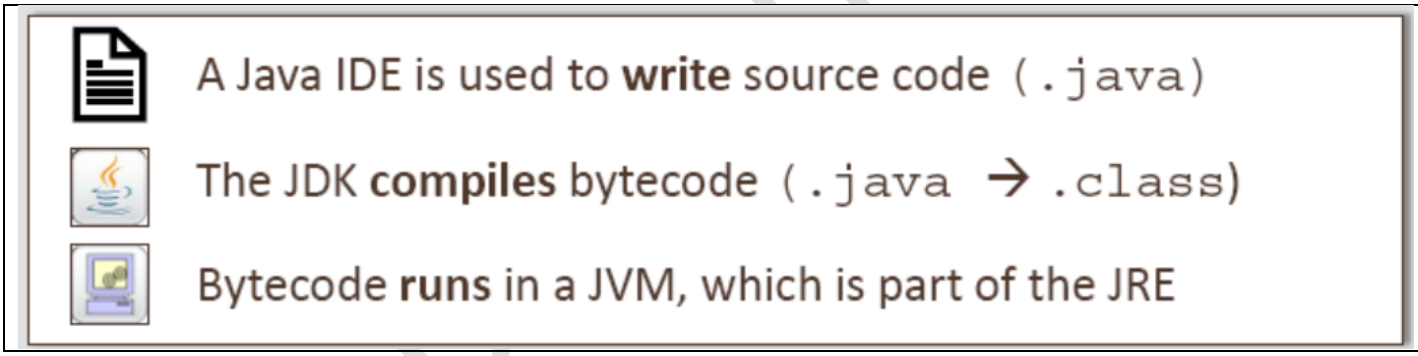

Compiling and Running a Java Program
You have an idea for a Java program
Your code is contained in a .java file
The result is a .class file (bytecode)
Your code works!
Write
.java
Compile
.class
Run
Java
A Java IDE
JDK
JRE
ORACLE


A Java IDE is used to write source code (.java)
The JDK compiles bytecode (.java → .class)
Bytecode runs in a JVM, which is part of the JRE

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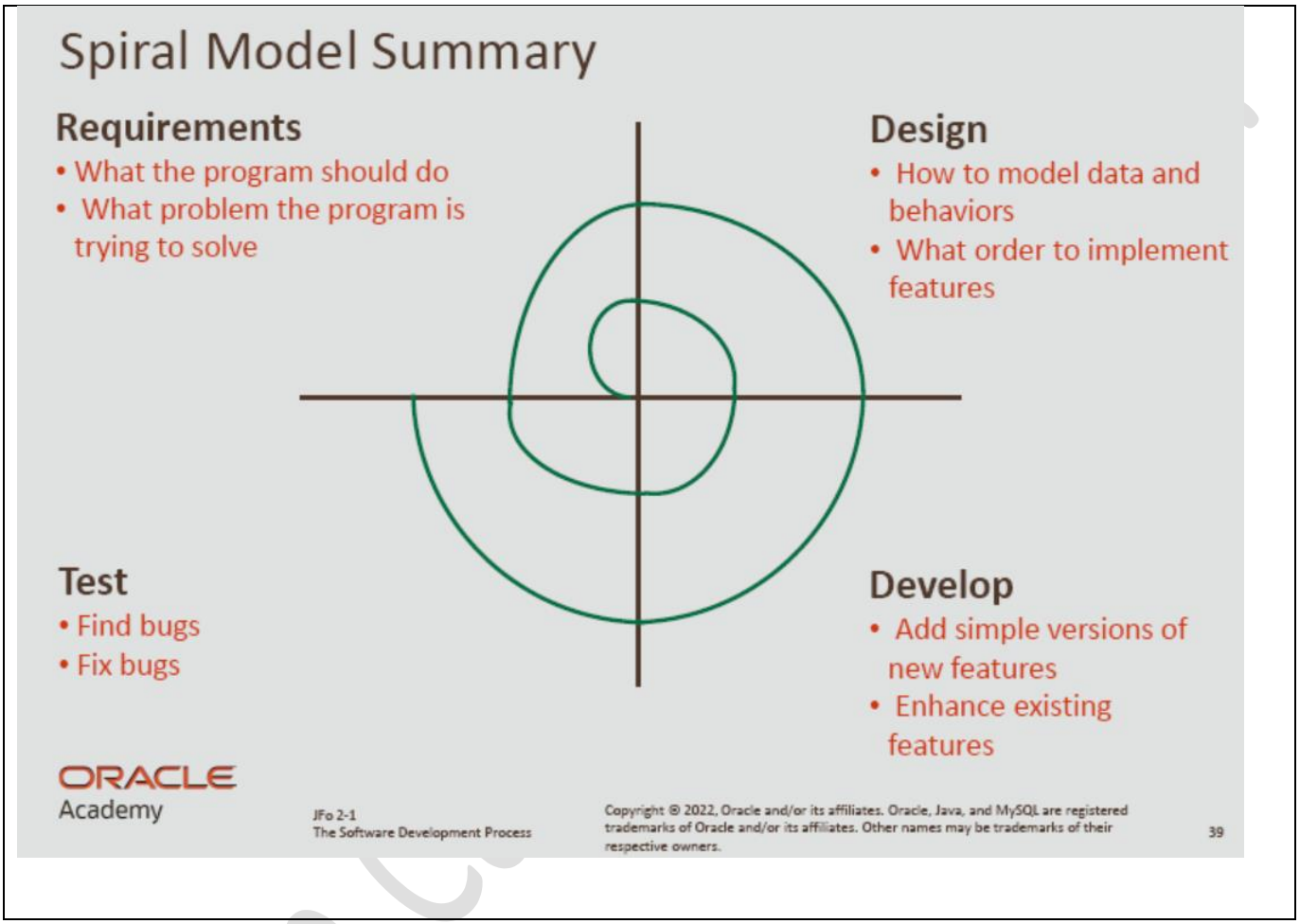
2. Java Basics

2.1. The Software Development Process

Spiral Model of Development



https://objectstorage.uk-london-1.oraclecloud.com/n/lrvrlgaqj8dd/b/Games/o/JavaPuzzleBall/index.html

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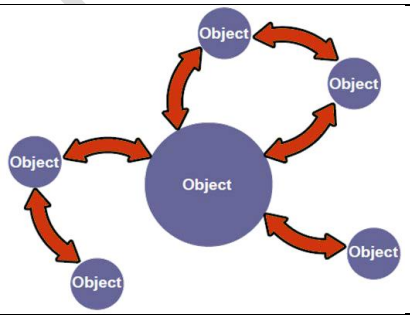
Juan C

2.2. What is my Program Doing?

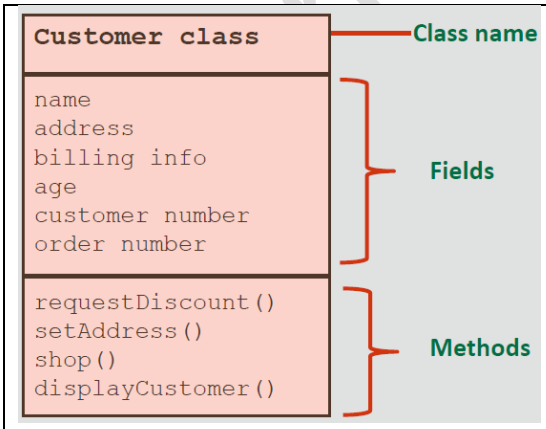
Code within curly braces is called a block of code Indentation before a line of code (4 spaces) Whitespace End statements with semicolons (;) // Single-line comments Multi-line comments /* Bievenidos a poo */	public static void NombreMetodo() { . . } NombreMetodo(); // llamar al método Debug To set a breakpoint Press Step Over

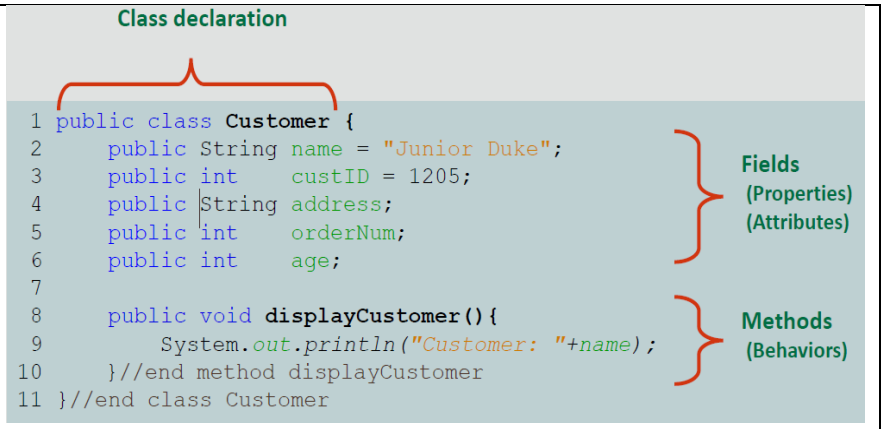
2.3. Introduction to Object-Oriented Programming Concepts

Procedural languages … • Read one line at a time • The C language is procedural	Object-oriented languages… • Read one line at a time • Model objects through code • Emphasize object interaction • Allow interaction without a prescribed order • Java and C++ are object-oriented languages

Object-Oriented Programming • Interaction of objects • No prescribed sequence	

Modeling Properties and Behaviors





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3. Java Data Types

3.1. What is a Variable?

```
String x ="Sam";
System.out.println("My name is " + x);
```

Variables03.java (There are 6 mistakes)

Type	Keyword	Example Values
Boolean	boolean	true, false
Integer	int	1, -10, 20000, 123_456_789
Double	double	1.0, -10.0005, 3.141
String	String	"Alex", "I ate too much dinner."

Variable Naming Conventions

- Begin each variable with a lowercase letter
- Subsequent words should be capitalized: myVariable
- Choose names that are mnemonic and that indicate the intent of the variable to the casual observer
- Remember that …
- Names are case-sensitive
- Names can't include white space

```
Int studentAge = 20;
String myCatchPhrase = "Enjoy Alex Appreciation Day!";
```

3.2. Numeric Data $$

3.3. Textual Data

3.4. Converting Between Data Types

3.5. Keyboard Input

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4. Java Methods and Library Classes
5. Decision Statements
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