# CURS JAVA SE

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# Why Java? (1)

**1. Lots of information:** Due to how long Java has been around, almost any question you can imagine has already been asked, answered, indexed, and democratically perfected through upvotes on the Internet. It is seriously hard to stump a search engine with a Java coding problem.

**2. An incredible toolset:** Java has a very rich API, and an incredible supporting open source ecosystem. There are tools upon tools for just about everything you would like to do. There's also an amazing community driven process that ensures growth in the right direction

**3. Software that leads by example:** Java is an Object Oriented language. It internally embraces best practices of object oriented design and strongly suggests that you learn and follow them. It also heavily promotes correct usage and many of the documented Design Patterns use Java as the language de facto. Understanding design patterns can lead to much more maintainable code.

**4. Killer editors:** The IDEs available for Java will blow your mind. Due to its strong typing, you'll not only be notified immediately of errors, but you'll also be given suggestions that will refactor and reformat your code with clear explanations and extreme ease. After using them, most people wonder how they ever coded before.

**5. Omnipresence:** Java is running just about everywhere you can imagine. It's usually where most large applications end up due to its scalability, stability, and maintainability. There's also currently a gigantic push in the Java community to be the leader of the IoT (Internet of Things). And it's coming. Very fast. There'll be a time in the near future when your alarm clock will automatically start brewing your coffee pot, and it'll most likely be Java doing that.

# Why Java? (3)

**6. Do you speak Java?:** IBM needs more people with Java skills. So what are you waiting for?  It's time to learn Java.

**7. Android adoption:** All Android Apps are written in Java. By taking our Android Development track, you can publish that app you've always dreamed of building.

**8. Ease of learning:** Java is a verbose language, which at first can seem daunting. However, after learning the basics you'll find that you can easily grab onto more advanced concepts because the code is very explicit. Plus, there are great courses out there that can ease you into this powerful language.

# Cuprins

- Introduction in Java
- Working with Eclipse
- Programming with statements
- Programming with operators and Strings (Arithmetic Operators, Working with Strings)
- Working with Basic Classes and Variables (Primitives, Arrays, Objects)
- Understanding Variable Scope and Class Construction (Local Variables, Method Parameters, Instance Variables, Constructing Methods)
- Basic exception and error handling
- reading from and writing to files
- Understanding class inheritance (Inheritance, Methods, Abstract Classes, Interfaces, Encapsulation)
- Access Modifiers
- Installing and configuring SQL Server 2008
- Database Connectivity using JDBC, executing queries

optional/extra:
- Working with Graphical User Interfaces using Java AWT, Swing (Buttons, Frames, TextFields, Radiobuttons, Tables, Dialogboxes, Layouts, etc.)
- JXL-API (or Apache POI) - reading from and writing to Excel files, Formatting tables
- applying all acquired skills from this course in a final project: Developing a complex Java application with a graphical user interface, database connectivity, exporting reports to .xls files.

# Reguli de joc

- 2 cursuri / saptmana

- durata 90 - 120 minute + pauza

- Lotus Notes: canalul "oficial" de comunicare (calendar)

- Structura cursului:

  - prezentare teme de la cursul anterior

  - prezentare teoretica

  - exercitii practice

- Proiect la finalul cursului

# Mediul de dezvolatare (1)

**The Java Runtime Environment (JRE):** This bundle includes a Java virtual machine and the Application Programming Interface. With the JRE, you can run existing Java programs. That's all. You can't create new Java programs, because you don't have a Java compiler.

**The Java Development Kit (JDK):** This bundle includes three tools — a Java compiler, a Java virtual machine, and the Application Programming Interface. With the JDK, you can create and run your own Java programs.
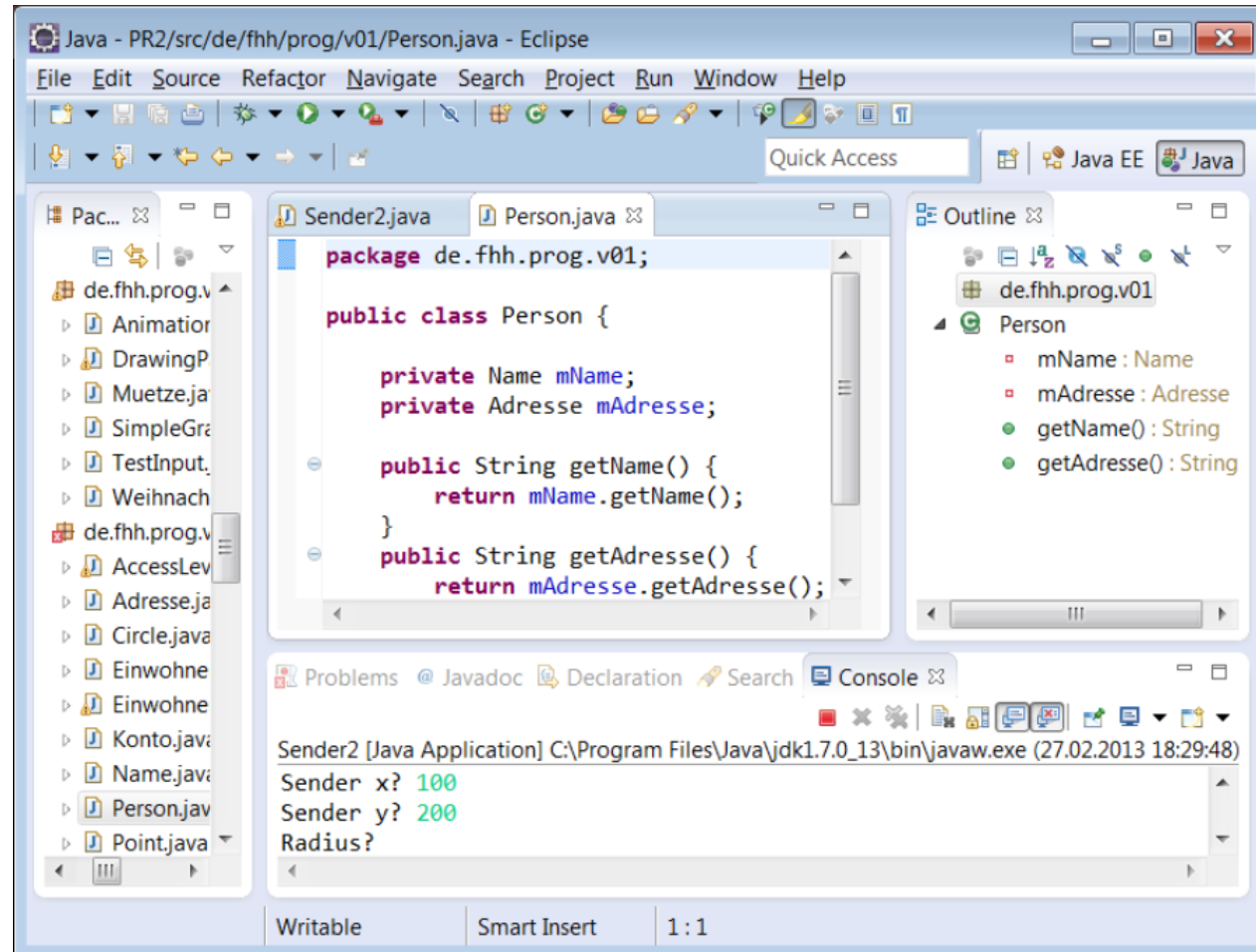
Download the JDK from - http://www.oracle.com/technetwork/java/javase/downloads/index.html

**Eclipse** is a Open Source Community tool, used for software development

Download the Eclipse IDE from - http://www.eclipse.org

# Mediul de dezvolatare (2)

**Eclipse provides basic functionality:**

- Managing files

- GUI elements

- settings

- Various Editors and views

- Online help

- plugins

# Primul program

**Proiect nou:**

```java
public class Hello {
    public static void main(String[] args) {
        System.out.println("Welcome to the cruel world of Java!");
    }
}
```

**Proiect nou:**

```java
public class Hello2 {
    public static void main(String[] args) {
        System.out.println("Hello, world!");
        System.out.println();
        System.out.println("This program produces");
        System.out.println("four lines of output");
    }
}
```

# Comentarii

**Comments:**

//Aceasta este o linie comentata si nu se executa

/**
* Commentarii Javadoc
*/

/*
O linie comentata
Doua linii comentate
*/

**Exercitiu:**

Ce livreaza urmatoare statement-uri?

System.out.println("\ta\tb\tc");

System.out.println("\\\\");

System.out.println("");

System.out.println("\"\"\"");

**Exercitiu:**

Scrie un println statement care sa livreze urmatorul output in consola:

/ \ // \\ /// \\\

**Exercitiu:**

Scrie un println statement care sa livreze urmatorul output in consola:

D:\norbert\tutorialJava\JavaTutorial.pdf

```
Special Characters Display
\'      Single quotation mark
\"      Double quotation mark
\\      Backslash
\t      Tab
\b      Backspace
\r      Carriage return
\f      Formfeed
\n      Newline
```