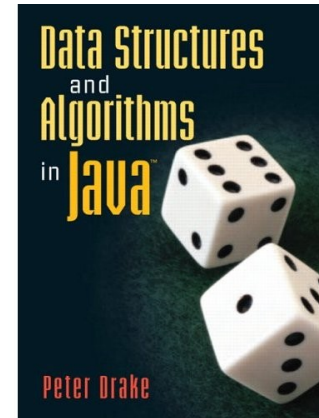


Datu egiturak eta algoritmoak

I. ATALA
Java Sarrera

Bibliografía



- *Head First Java*
Kathy Sierra, Bert Bates (O'Reilly)
- *Estructuras de Datos con Java*
John Lewis, Joseph Chase, Pearson Educación
- *Data Structures and Algorithms in Java*
Peter Drake (Prentice Hall)



Aurkibidea

- *Lehenengo pausoak*
 - *Java lengoaiaren ezaugarriak aztertu*
 - *Edizioa, konpilazioa eta exekuzioa*
 - *Aplikazio baten egitura*
- *Objektuetara zuzendutako programazioa*
- *Java lengoaiaren egitura*



Zer da JAVA?

- Programazio lengoai bat da
- Objektuetan oinarritua
- Sareentzako egokitua
- Bezero aplikazioak
- Zerbitzaile aplikazioak



JAVA aplikazio motak

4 aplikazio mota

Bezeroan:

- Aplikazio arruntak
- *Appletak*

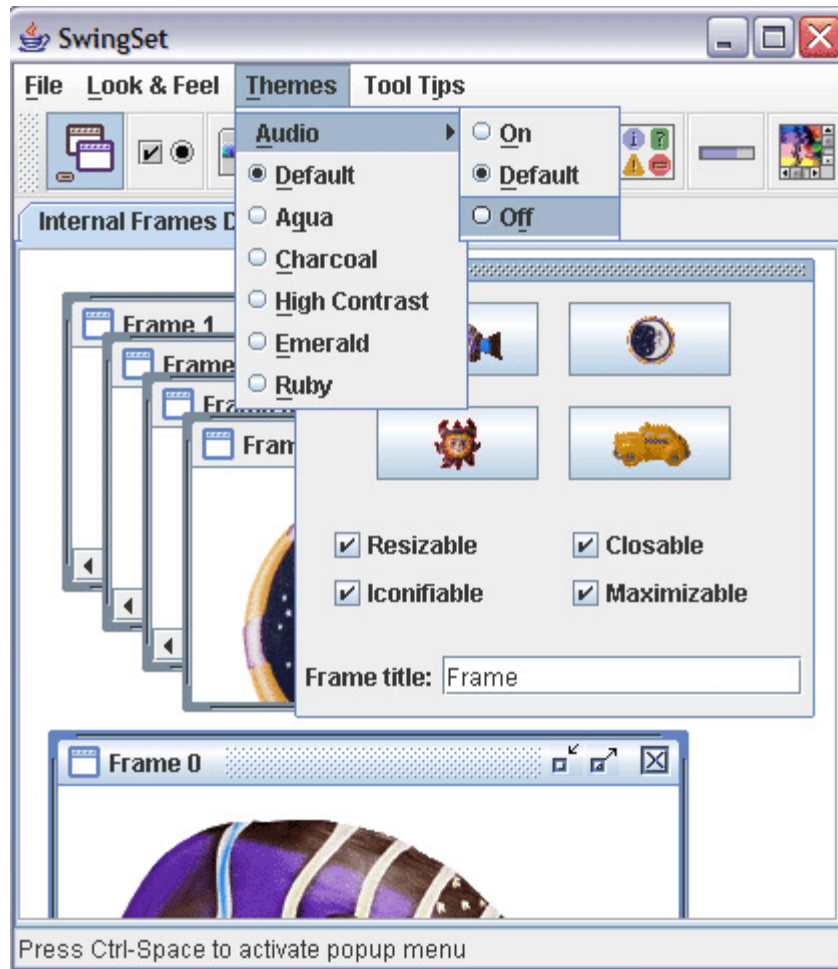
–Zerbitzarian

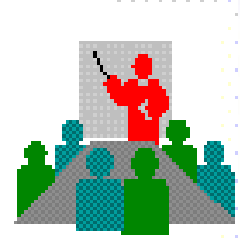
- *Servletak*
- *JSP-ak*



JAVA aplikazio motak

Bezeroan: Aplikazio arruntak

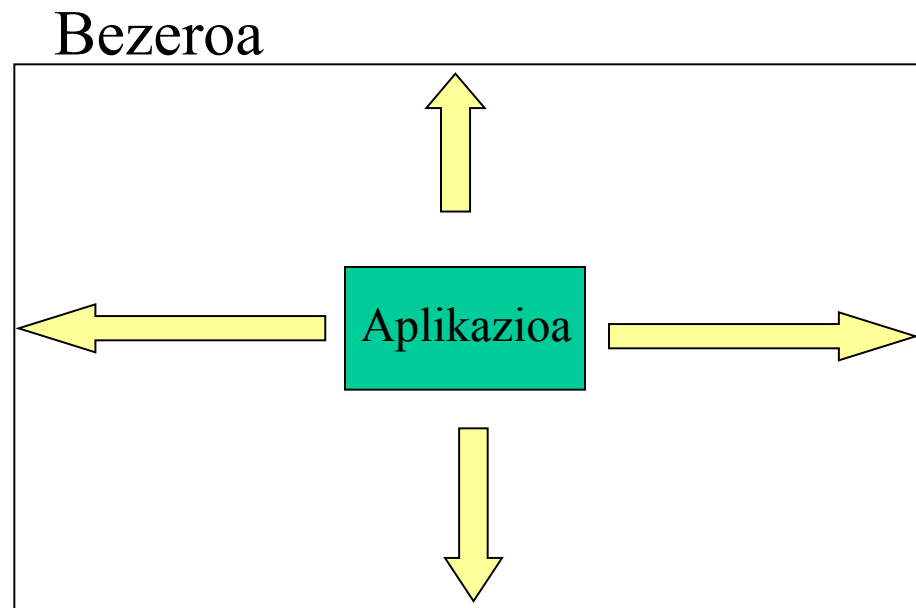


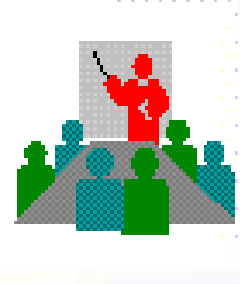


JAVA aplikazio motak

Bezeroan: Aplikazio arruntak

Murrizketarik gabe exekutatzeko diren Java **aplikazio lokalak** **dira**.



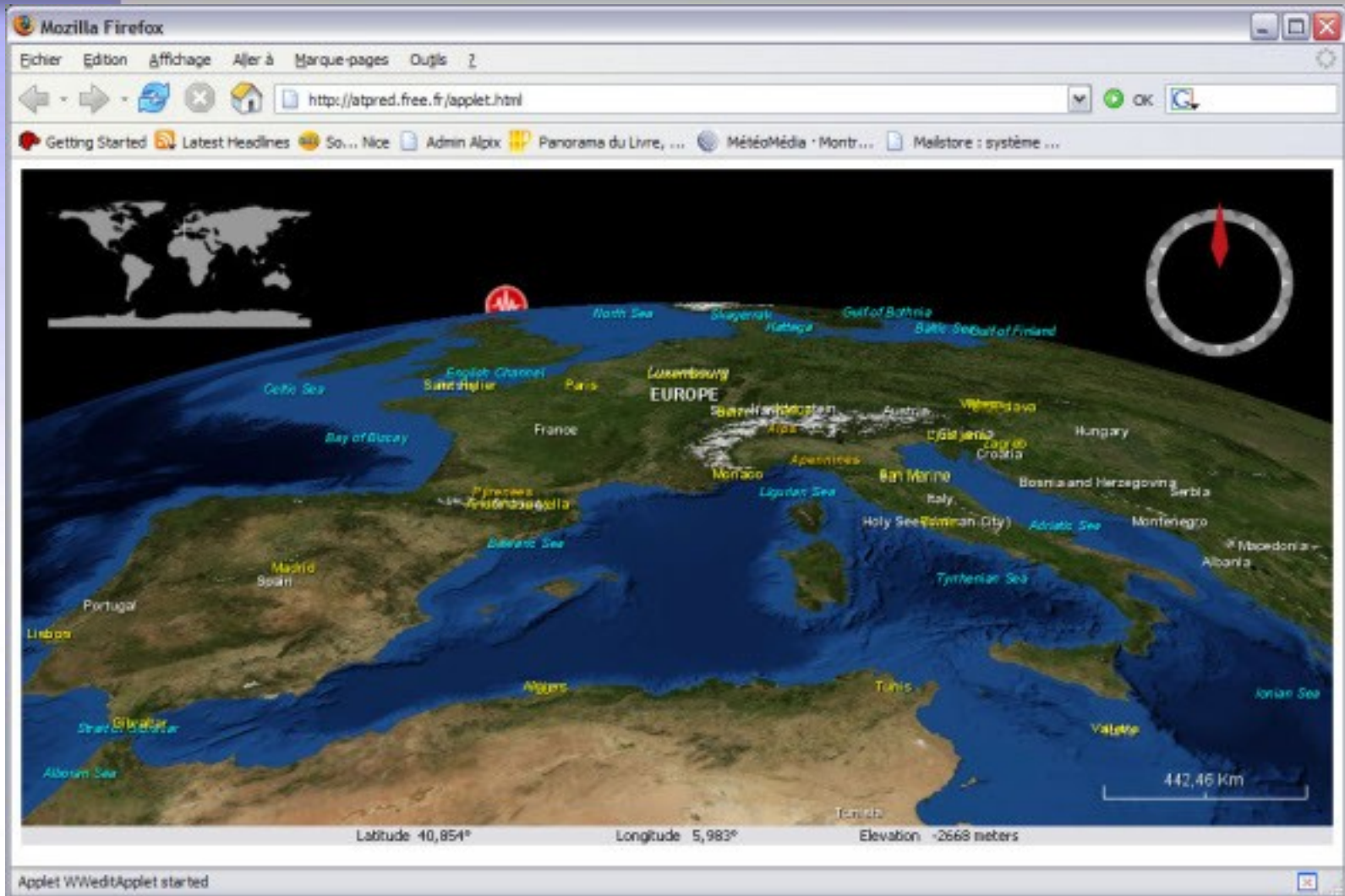
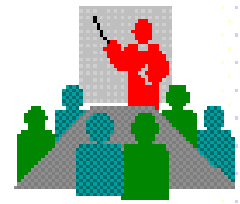


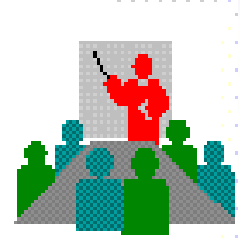
Aplikazio lokalaren kodea

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


JAVA aplikazio motak

Bezeroan: Applet-ak



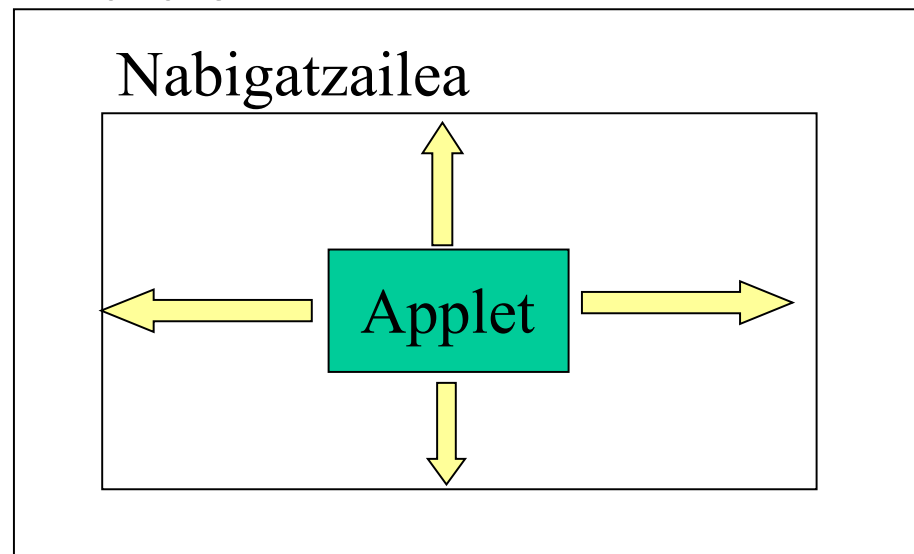


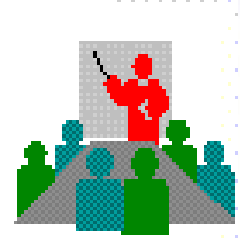
JAVA aplikazio motak

Bezeroan: Applet-ak

Nabigatzailearen testuinguruan exekutatzeko Java aplikazioak dira

Bezeroa

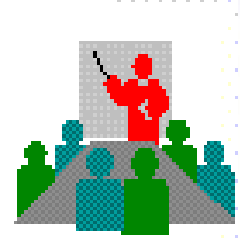




Applet baten kodea

```
import java.applet.*;
import java.awt.*;

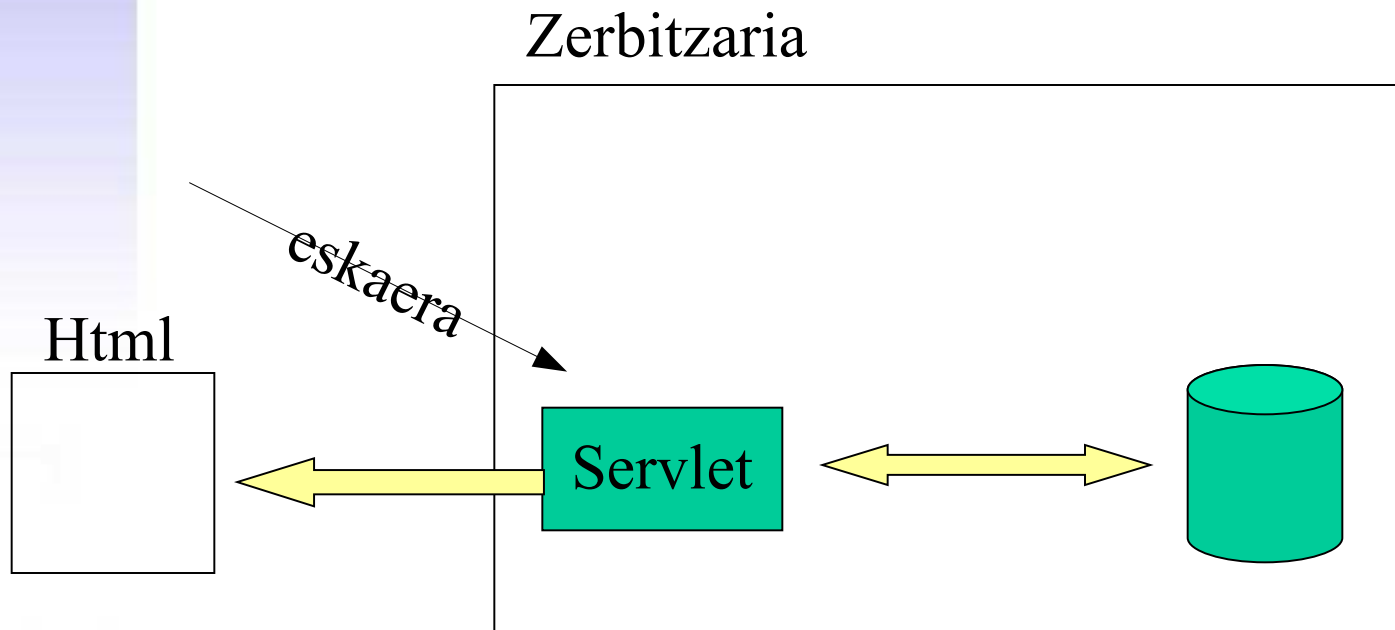
public class HelloWorld extends Applet
{
    public void paint(Graphics g)
    {
        //method to draw text on screen
        // String first, then x and y coordinate.
        g.drawString("Hey hey hey",20,20);
        g.drawString("Hellooo World",20,40);
    }
}
```



JAVA aplikazio motak

Zerbitzailean: Servlet-ak

HTML kodea itzultzen duten Java aplikazioak dira
Orri dinamikoak sortzeko erabiltzen dira





Servlet adibidea

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
public class HelloWorld extends HttpServlet {

    public void doGet(HttpServletRequest request,
                      HttpServletResponse response) {
        PrintWriter out = response.getWriter();
        out.println("Hello World"); }
}
```

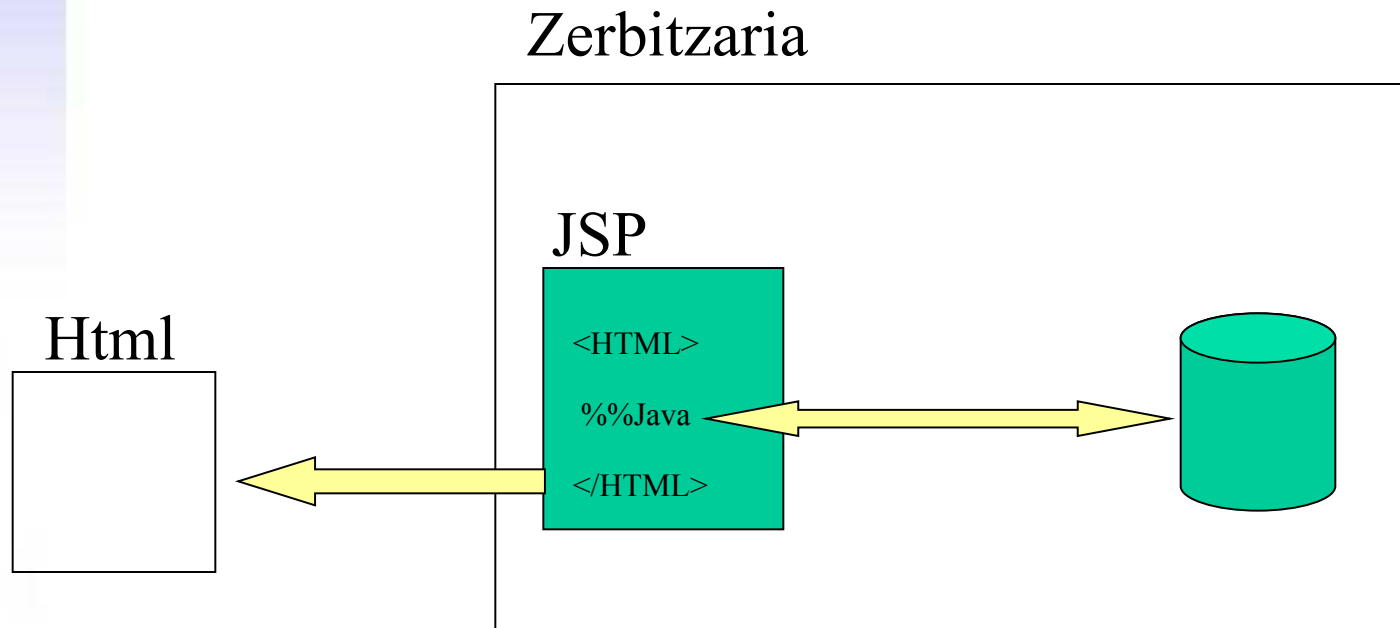


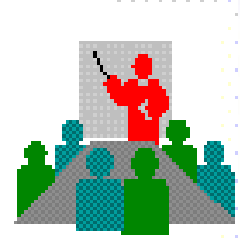
JAVA aplikazio motak

Zerbitzailean : JSP

HTML orriak Java kodearekin xartatua (embedded).

Lehendabiziko deialdian, sistemak JSP kodea Servlet batean bihurtzen du





JSP Adibidea

```
<HTML>
  <HEAD>
  </HEAD>
  <BODY>
    Data: <%= new java.util.Date() %>
    <% if (Math.random() < 0.5) { %>
      Buenas <B>tardes</B> !
    <% } else { %>
      <B>Arratsaldeon</B>!
    <% } %>
  </BODY>
</HTML>
```

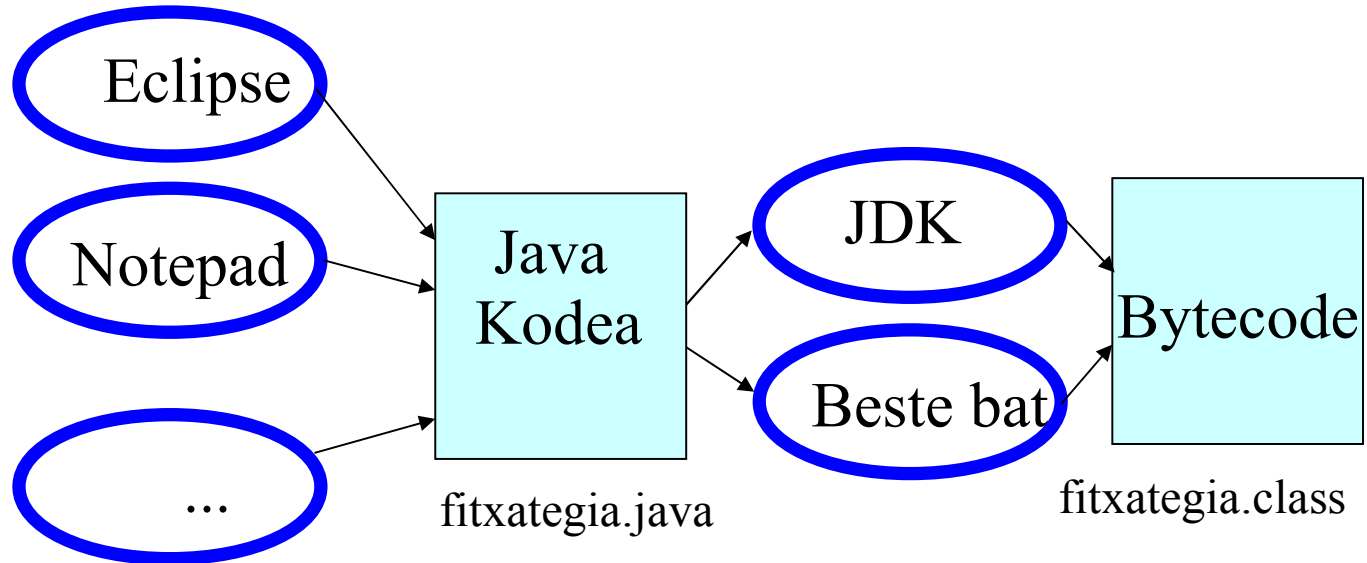
Garapen-arkitektura

Editoreak

Konpiladoreak

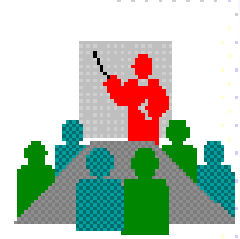
Garapen Tresnak

- Eclipse
- NetBeans
- JDeveloper
- JBuilder

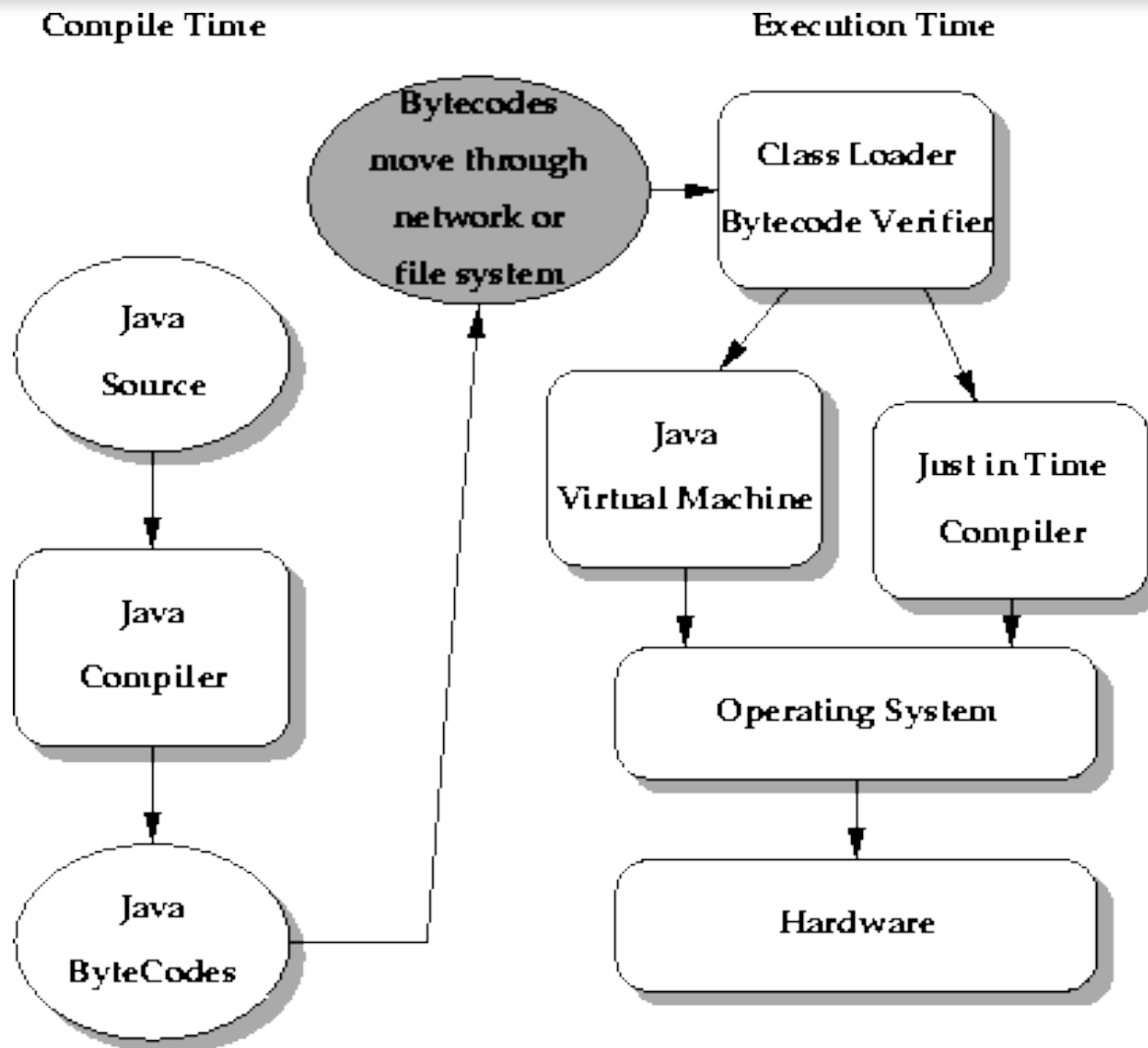


```
javac fitxategia.java
```

IDE: garapenerako ingurune integratua (GII)



Exekuzio-arkitektura





Exekuzio-arkitektura

- **Klase kargatzaile**
 - Aplikazioaren bytekodeak egiaztatzen ditu
 - bytecode-ak behar dituen klaseak kargatzen ditu
- **JVM (Java Virtual Machine)**
 - Bytekode sasikodea exekutatu du
 - Web nabigatzaile edo Sistema eragilearen menpean
 - Bi aukera daude
 - Kodea interpretatzea (Java Interpreter)
 - Konpilatzea era dinamikoan (JIT)

Zerk egin dezake huts?



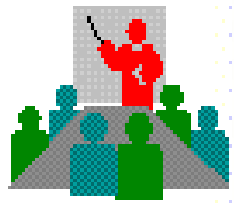
Konpilatu → “Syntax Error”

Kargatu → “Class not found Exception”

Exekutatu → “Null Pointer Exception”

```
Autoa a; // a aldagaia erazagutu  
a.martxanJarri(); // a hasieratu baino lehen...
```

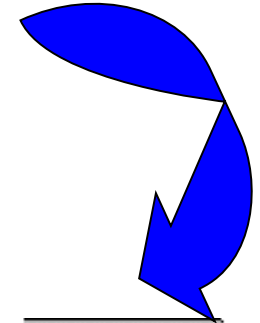
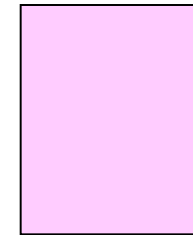
Lehenengo aplikazioa



HelloWorld.java

```
// Adibide aplikazioa
// "Hello world"
//
public class HelloWorld{
    public static void main(String args[]){
        System.out.println("Hello world");
    }
}
```

HelloWorld.class



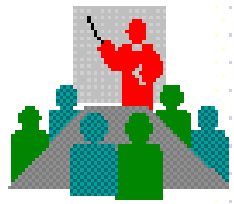
1. Konpilazioa:

javac HelloWorld.java

2. Exekuzioa:

java HelloWorld

Lehenengo aplikazioa

A screenshot of the Eclipse IDE interface. The title bar reads "Java - HelloWorld.java - Eclipse SDK". The menu bar includes "File", "Edit", "Source", "Refactor", "Navigate", "Search", "Project", "Run", "Window", and "Help". The Package Explorer on the left shows a project named "probak" containing a file "HelloWorld.java". The main editor window displays the following Java code:

```
1 package probak;
2
3 public class Helloworld {
4     public static void main(String[] args) {
5         System.out.println("Kai xo");
6     }
7 }
8
9
```

The Console window at the bottom shows the output: "<terminated> HelloWorld (1) [Java Application] /opt/jdk1.6.0_02/bin/java [21/09/2007 17:17:38] Kai xo". The word "ECLIPSE!" is overlaid in large blue letters on the right side of the editor window.