

Welcome to the Class



Department of Computing and Information System

Java Applets

Introducing Applets

- Applets
 - Java programs called from within another application
 - Frequently run from a Web page
 - Display as rectangular area
 - Can respond to user-initiated events
 - Behaviors come from Java class named `JApplet`
- Steps to write an applet
 - Set up layout for applet
 - Create components and add them to applet

Applets

- An **applet** is a program that is typically embedded in a Web page and can be run from a browser
- You need special HTML in the Web page to tell the browser about the applet
- You don't need to supply a **main** method; the browser does that
 - When you write an applet, you are writing only *part* of a program
 - You supply certain methods that the browser calls
- For security reasons, applets run in a **sandbox**: they have no access to the client's file system

What an applet is

- You write an applet by extending the class **JApplet**
- **JApplet** is just a class like any other; you can even use it in applications if you want
- When you write an applet, you are only writing *part* of a program; the browser supplies the **main** method
 - Once you understand how applets work, you can write a program that function either as an applet or as an application—just write a **main** method that calls the right methods at the right time
 - Such programs have the ugly name “**appletcations**”

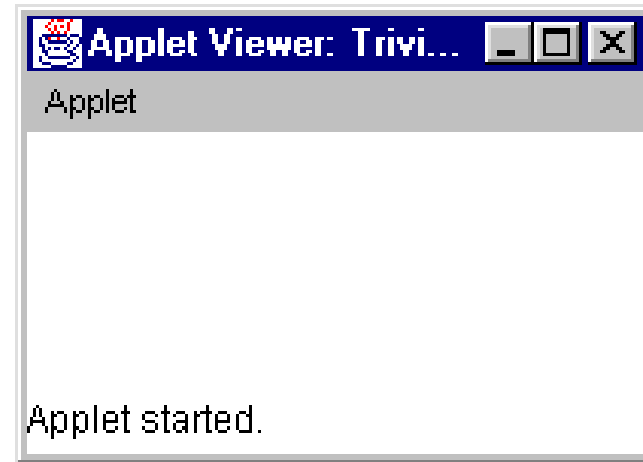
The simplest possible applet

TrivialApplet.java

```
import javax.swing.JApplet;  
public class TrivialApplet extends JApplet { }
```

TrivialApplet.html

```
<applet  
  code="TrivialApplet.class"  
  width="150"  
  height="100">  
</applet>
```



The simplest reasonable applet

```
import java.awt.*;  
import javax.swing.JApplet;  
  
public class HelloWorld extends JApplet {  
    public void paint(Graphics g) {  
        g.drawString("Hello World!", 30, 30);  
    }  
}
```



What are the disadvantages of applets?

- Applets can't run any local executable programs
- Applets can't with any host other than the originating server
- Applets can't read/write to local computer's file system

What are the disadvantages of applets?

(Cont'd)

- Applets can't find any information about the local computer
- All java-created pop-up windows carry a warning message
- Stability depends on stability of the client's web server
- Performance directly depend on client's machine

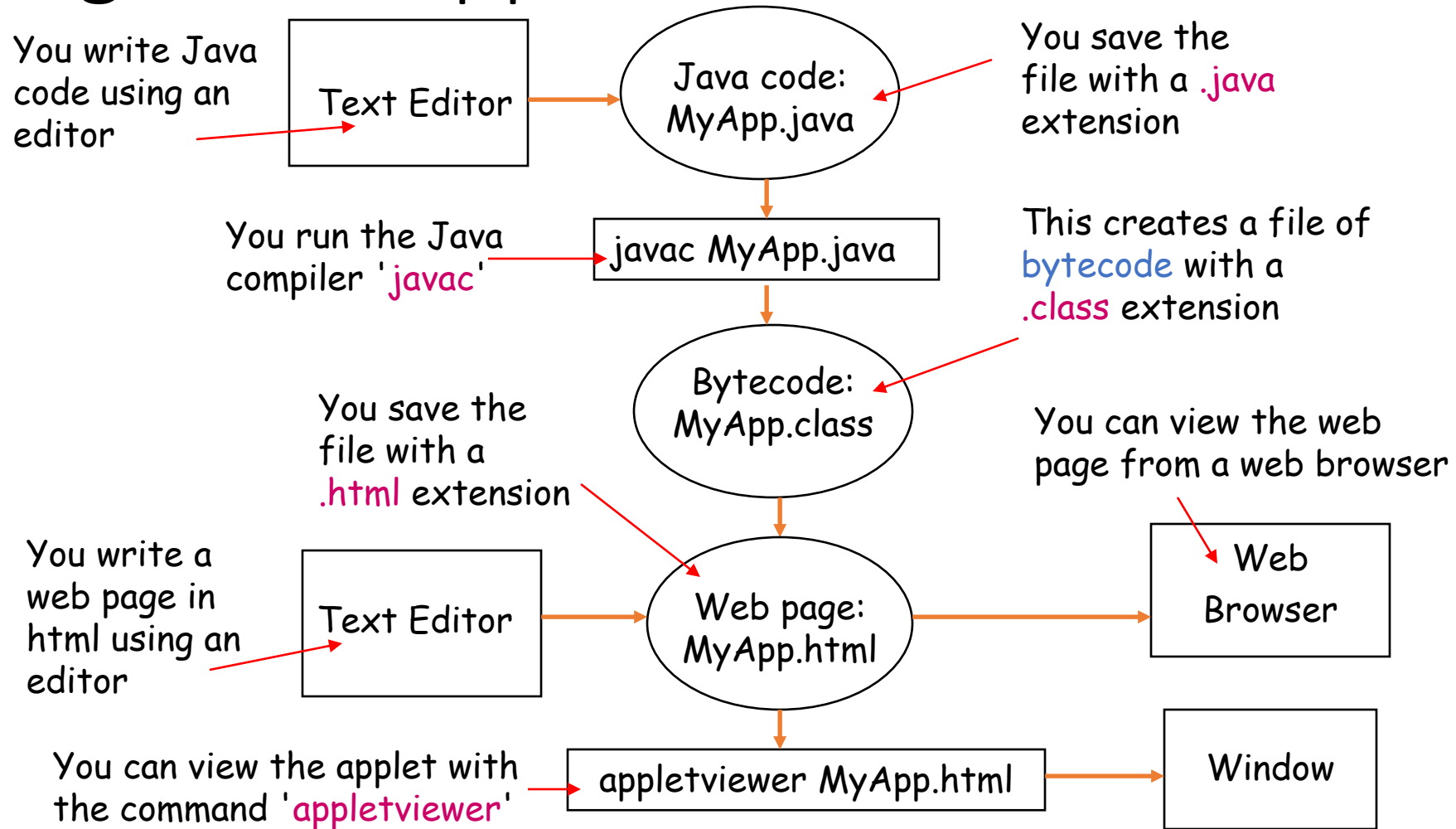
What are the advantages of applets?

- Automatically integrated with HTML; hence, resolved virtually all installation issues.
- Can be accessed from various platforms and various java-enabled web browsers.
- Can provide dynamic, graphics capabilities and visualizations
- Implemented in Java, an easy-to-learn OO programming language

What are the advantages of applets? (Cont'd)

- Alternative to HTML GUI design
- Safe! Because of the security built into the core Java language and the applet structure, you don't have to worry about bad code causing damage to someone's system
- Can be launched as a standalone web application independent of the host web server

Running a Java Applet



Creating an Applet

- Open "Notepad" (Start → Programs → Other → Notepad)

- Type this in:

- Save As
"Greetings.java"
(Put the " "
round the name
otherwise it
adds .txt to the
end!)

```
import java.awt.*;  
import java.applet.Applet;  
  
public class Greetings extends Applet {  
  
    public void paint(Graphics g) {  
        g.drawString("Hello World!", 50, 50);  
    }  
}
```

- Open a DOS Window
(Start → MS-DOS Prompt)

```
G:\> javac Greetings.java  
G:\>
```

- Type `javac Greetings.java`
- If you type `dir Greetings.*` you should see `Greetings.java` and `Greetings.class`

If it gives an error check you typed it in **exactly** right.

Creating the Web Page

In order to run an applet you have to embed it in a web page using a special `<applet>` tag e.g:

```
<applet code="name.class" width=www height=hhh></applet>
```

Using Notepad type in the following and save it as "`Greetings.html`":

```
<html>
<head>
<title>Greetings Applet</title>
</head>
<body>
<applet code="Greetings.class" width=300 height=200 ></applet>
</body>
</html>
```

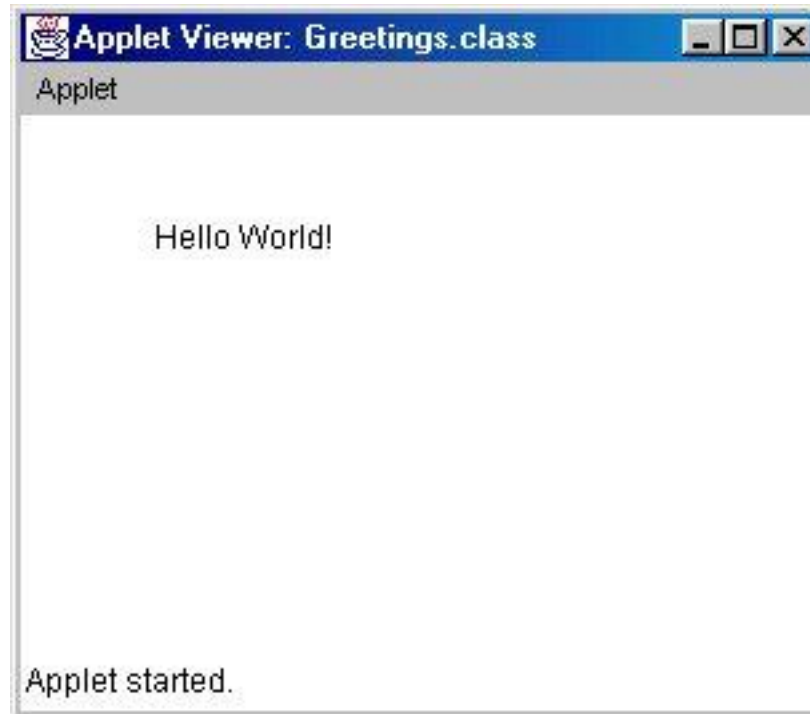
Size of the applet in pixels

Running the Program

In the DOS window type `appletviewer Greetings.html`

```
G:\> appletviewer Greetings.html
```

You should see
something like this:



Thanks to All