

CS100J 20 April 2005
Applications and Applets (Chapter 16 of the text)

We also look at html, since
we need it to use applets.

I never let my schooling interfere with my education.

Mark Twain

Learning makes a man fit company for himself.

Anon

The primary purpose of a liberal education is to make one's mind a
pleasant place in which to spend one's time.

Sydney J. Harris (1917-1986) American journalist.

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Executing Java programs outside the DrJava Interactions pane.

Every Java program is either an application or an applet.

```
public class C {
    ...
    public static void main(String[] args) {
        ...
    }
    ...
}
```

Every Java application
needs a class with a
method main that is
defined like this.

To start the application,
method main is called.

The parameter, an array of Strings, can
be used to pass information into the
program.

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```
public class CLAS {
    ...
    public static void main(String[] args) {
        ...
    }
    ...
}
```

```
> cd
> dir
(list of files)
> java CLAS
```

Terminal window
(can type "java CLAS" in DrJava Interactions
pane)

Causes call
CLAS.main(null);
to be executed

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jar file (Java Archive file)
(like tar file (Tape Archive file))

Contains (among other things)

- (1) .class files
- (2) a "manifest", which says which class has method main

Manifest:

A list of passengers or an invoice of cargo for a
vehicle (as a ship or plane).

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Standalone Java programs

Suppose images.jar contains a Java application
(it has a class with a static procedure main, and
its manifest names the class)

- Execute it by double clicking its icon in a directory.
- Execute it by typing

java -jar images.jar

in a terminal window (or DOS, or command-line window)

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Creating a jar file

1. Navigate to the directory that contains the .class files.
2. Create a text file x.mf that contains one line (with a line-feed):
Main-class: <name of class>
3. In the directory, type:

```
jar -cmf x.mf app.jar *.class
```

Create Manifest File name of file to create name of manifest file expands to name all the .class files

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Inspecting jar files

```
jar -tf images.jar
```

jar -tf images.jar

type (list) File name of jar file

List the contents of jar file images.jar

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Applet: a java program that can be called from a web page (in your browser)

```
public class C {
    public static void main(String[] args)
    { ... }
}
```

application

```
import javax.swing.*;
public class A extends JApplet{
    public void init() { ... }
    public void start() { ... }
    public void stop() { ... }
    public void destroy() { ... }
}
```

applet

Four inherited procedures:

- called to initialize
- called to start processing
- called to stop processing
- called to destroy resources (just before killing the applet)

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An html (HyperText Markup Language) file

```
<html>
<head> <title>Just a title</title> </head>
<body>
<p align="center"><B>Demo Links and Images</B> </p>
<p>This is
<a href="http://www.cs.cornell.edu/courses/cs100j/2006sp/"> a link</a></p>
<p>This <a href="http://www.cs.cornell.edu/courses/cs100j/2006sp/"
target="_blank">link</a>
opens a new window</p>
<p>Below is an image </p>
<p>
</p>
</body>
</html>
```

tags

- <html>** start an html page
- <head>** start the "heading"
- <title>** the title for the page
- <body>** start the body, content, of the page
- <p>** begin a paragraph
- <a>** begin a link
- ** begin an image

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An html (HyperText Markup Language) file

```
<html>
<head>
<title>FacultyApplet</title>
</head>
<body>
<p align="center"><B>This</B> is
an <i>Applet!</i>
</p>
<br><br>
<p><applet archive="AppletClasses.jar"
code="FacultyApplet.class"
width=800 height=550>
</applet>
</p>
</body>
</html>
```

tags

- <html>** start an html page
- <head>** start the "heading"
- <title>** the title for the page
- <body>** start the body, content, of the page
- <p>** begin a paragraph
- ** begin boldface
- <i>** begin italics
- <applet>** start a Java applet
-
** line break (no end tag)

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