CS100J   03 May 2005
Applications and Applets (Chapter 16 of the text)

Please take the time to complete the online course evaluation for all your Engineering Courses. For this course, completion of the evaluation is required and carries a weight of 1.

We have finished what you need to know for Matlab. You should be able to do most of the assignment in lab today and tomorrow.

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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FINAL: Dec 13, noon, Barton Hall East

Thursday, we will give you (and put on the website)

- A list of things you should know for the final. The list will include a detailed discussion of what you need to know for Matlab.
- The final from a previous CS 100J
- The answers to a previous CS100J
- Other questions, with answers

We will schedule review sessions --keep an eye on the website for information on them.

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Every Java program is either an application or an applet.

We are discussing executing Java programs outside of the DrJava Interactions pane.

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

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

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

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

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

Terminal window

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

(can type "java C" in DrJava Interactions pane)

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jar file (Java Archive file)
(after 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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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.
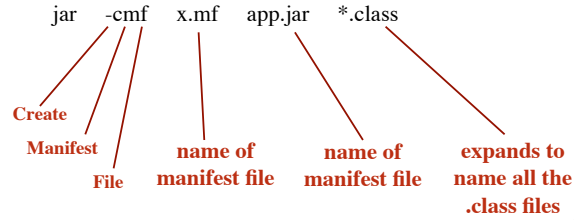
• Execute it by typing

java   -jar   images.jar

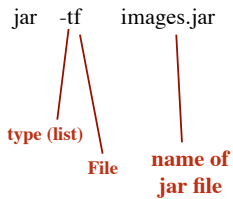in a terminal window (or DOS, or command-line window)

Creating 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 manifest file**   **name of manifest file**   **expands to name all the .class files**

Inspecting jar files

jar   -tf   images.jar

List the contents of jar file images.jar

type (list)
File   **name of jar file**

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)

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
<b>	begin boldface
<i>	begin italics
<applet>	start a Java applet
** **	line break (no end tag)

Programming languages
Dates approximate

Year	Major languages	Teach at Cornell
1956's	Fortran	
1960	Algol, LISP, COBOL	
1965	PL/I	PL/C (1969)
1970	C	
1972	Pascal	
1980's	Smalltalk (object-oriented)	Pascal (1980's)
1980's	(late) C++	
1996	Java	C
1998		Java