


Core Java Course
Applets 2
(Chapter 10, cont.)

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Agenda

- ❖ Homework
- ❖ How to Pass Parameters
- ❖ How to Open Windows
- ❖ URLs and Multimedia
- ❖ Applet Context
- ❖ JAR files
- ❖ Homework Assignment


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Applet Parameters

- ❖ Applets don't have a command line
- ❖ To pass parameters to an Applet, a `<PARAM>` HTML tag is used
 - `<PARAM NAME=age VALUE =41>`
 - `<PARAM NAME=savings VALUE =50000>`
- ❖ NAME attribute is supposed to be case-sensitive
- ❖ `String getParameter(String name);`
 - Returns null if a specific parameter is not present
- ❖ Use `Integer.parseInt()` or `Format.atoi()` to convert to a number (same for long, float)


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Applet Parameters (cont.)

- ❖ Applet parameters cannot be fetched from an applet constructor
 - The parameters are not yet available since the applet object itself does not yet exist!
- ❖ Applet parameters must be fetched during the `init()` method.
 - Because of this, most programmers do not write constructors for applets (just do it all in `init`)

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Applet Information

- ❖ Information about the Applet and its author can be provided by overriding the `getAppletInfo()` method. It returns an info string.
- ❖ Descriptions for applet parameters can be provided by overriding the following method


```
String[][] getParameterInfo();
```

 - The information is stored a 3xN dimensional array
 - Name Type Description
 - "age" int "person's age"
 - "mStatus" boolean "marital status"

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Windows and Dialog Boxes

- ❖ A frame window can be opened from an applet:


```
- Frame wnd = new MyApp();
- wnd.show();
- wnd.setVisible(false);
```
- ❖ A dialog(s) can be opened from the frame window code the same way as for a stand alone application
- ❖ All new windows originated from an applet carry warning messages
- ❖ Calculator & PopUpCalculator Code Example

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URLs

- ❖ **URL** - Universal Resource Locator
- ❖ Java has a URL class that is used for accessing different types of information both locally or on the Internet:


```
u1 = new URL("http://www.ge.com/ath.htm");
u2 = new URL("file://C:/MEDIA/spacemusic.au");
```
- ❖ Note: **always** use "/" rather than "\" no matter which one is normally required by the OS!
- ❖ Improper formatted URL causes `MalformedURLException` to be thrown

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Using Multimedia Resources

- ❖ A URL object be used to load multimedia resources
 - `AudiClip getAudioClip(URL u);`
 - `void play(URL u);`
 - `Image getImage(URL u, String name);`
- ❖ `AudioClip` class also has useful methods
 - `void play();`
 - `void loop();`
 - `void stop();`
- ❖ JDK 1.2 Code Example

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Applet Context

- ❖ An Applet can utilize the browser's services trough the `AppletContext` interface

```
AppletContext{
    public Applet getApplet(String name);
    public Enumeration getApplets();
    public AudioClip getAudioClip(URL u);
    public Image getImage(URL u);
    public void showDocument(URL u,
        String targetFrame);
    public void showStatus(String stat);
}
```

- ❖ `Applet getAppletContext();`

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Applet Context (cont.)

- ❖ The `AppletContext` object can be used for:
 - getting a reference to other applets on the same page in order to send them a command or retrieve information
 - enumerating all of the applets on the page
 - obtaining multimedia resources while utilizing the browser's cache (this can speed up resource loading)
 - displaying a document in another HTML frame (another window if `f = "_blank"`)


```
public void showDocument(URL u, String f);
```
 - displaying a message in the applet's status line
- ❖ Bookmark Applet Code Example

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Archive Files (JAR)

- ❖ All files (class files and resources) can be loaded from a URL one at a time. However, when we have many small files the network connect-roundtrip overhead can become significant.
- ❖ Java 1.1 allows the use of a JAR file with an applet, which has two significant advantages:
 - no need to establish a host connection multiple times
 - the total size of all the files is reduced because of compression (JAR files can still be "zipped")
- ❖ `<ARCHIVE>="Resource.jar"`

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JDK JAR tool

- ❖ JAR files can be created by using
 - ZIP/WINZIP tools
 - JAR tool provided with JDK
- ❖ JAR tool command line
 - `jar cfv JarFile File1 File2 File3 ...`
 - `jar cfv Archive *.class *.au *.gif`
- ❖ Application-Applet Code Example

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Homework Assignment

- ❖ Prepare for the test:
 - Basics of Java programming
 - Classes and Objects
 - Inheritance and Polymorphism
 - Interfaces
 - Inner Classes
 - Handling Graphics
 - Java 1.1 Delegation Event Model
 - Listener Interface implementation (Adapters, etc.)
 - JFC/Swing UI components

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