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8.6: World Wide Web Access in Java

The class `java.net.URL` is the heart of Java's WWW API. As mentioned, a URL is an address on the Web (`http://www.yahoo.com`, for example). The `URL` class not only represents such an address but allows you to connect to the server at that address.

```
URL u = new URL("http://www.yahoo.com/index.html");
BufferedReader br =
    new BufferedReader(new InputStreamReader(u.openStream()));
```

`InputStreamReader` is an adapter class that bridges between byte streams (as returned by `URL.openStream()`) and character streams (`BufferedReader` needs one for a constructor argument). The variable `br` now contains a valid reader, and we can read data from it and process it in whatever manner we choose. The data we are reading is being delivered over the Internet from a remote Web server.

The page requested does not have to be an HTML page; it can be an encoded request for service. Here we are requesting a page from Yahoo! (the web directory and search engine) that would list every entry in which the word Java appears:

```
URL u = new URL("http://search.yahoo.com/bin/search?p=Java");
```

I obtained this URL by pointing my browser to `http://www.yahoo.com`, entering the word "Java" in the search dialog, then looking to see what URL the browser displayed in the "location" field after the query completed.

The `java.net.URLConnection` class offers some further capabilities, including the ability to do read/write (POST) WWW transactions. The interested reader is directed to the API documentation.

Applets have some special functions that help them collect and use multimedia WWW data easily. For example, the `getImage()` and `getAudioClip()` methods create `Image` and `AudioClip` objects, respectively, given a URL as an argument. `getImage()` also appears in `java.awt.Toolkit`, but `getAudioClip()` is unique to applets.