The Expression Language

1. Change one of the confirmation pages of the health plan app to use the JSP 2.0 EL instead of the JSF EL. Assuming your web.xml file already uses the servlets 2.4 header, this exercise is a one-minute task.

2. Make a bean with a getFavoriteColors method that returns an array of four colors. Make a JSF page that prints out the colors. Unless you know JSTL, your page will need to assume that there are exactly four colors. Note that you can do this problem without making a form, an action controller, or any navigation rules. Just declare the bean in faces-config.xml and test in test-colors.jsp (but use the URL test-colors.faces when you access it!).

3. Redo the previous problem, but use a List instead of an array.

4. Make a very small HashMap that maps English color names (red, orange, yellow, green, black, white) to Spanish color names (rojo, anaranjado, amarillo, verde, negro, blanco). Print out the Spanish colors in the JSP page.

5. Make several color mapping beans representing colors in several languages. Create a form that lets a user choose a language. Once they submit the form, display a page showing the color names in that language. For this problem, you now need a full-blown JSF app with a form, action controller, and navigation rule. If you don't know any foreign languages, go to the Google home page and click on "Language Tools" and it will translate for you.

6. Create some beans to be used to let people file their taxes online.
   - Create a Person object that stores a first name, last name, and social security number.
   - Create an Address object that stores a street address, state, and ZIP code.
   - Create a Household object that stores two people (main filer and spouse) and an address.

   Create an input form to gather all of the information.

   If all of the data is present, display a confirmation page containing all of the information. If any of the data is missing, display an error page saying "missing data."

7. Redo the confirmation page using JSP 2.0 (or, if you used JSP 2.0 in the previous problem, redo it using h:outputText).

The Expression Language (Continued)

Here are some sample classes to shorten your work for the color mapping beans. You can get the source code from the exercise solutions project.

ColorMapper.java

```
package coreservlets;

import java.util.*;

public class ColorMapper {
  private String languageName;
  private Map<String,String> colorTable =
    new HashMap<String,String>();

  public ColorMapper(String languageName,
                     String... foreignColorNames) {
    String[] englishColorNames =
      { "red", "orange", "yellow", "green", "black", "white" };
    if (foreignColorNames.length == englishColorNames.length) {
      for(int i=0; i<englishColorNames.length; i++) {
        colorTable.put(englishColorNames[i], foreignColorNames[i]);
      }
      this.languageName = languageName;
    }
  }

  public String getLanguageName() {
    return(languageName);
  }

  public Map<String,String> getColorTable() {
    return(colorTable);
  }
}
```

SpanishColorMapper.java

```
package coreservlets;

public class SpanishColorMapper extends ColorMapper {
  public SpanishColorMapper() {
    super("Spanish", "rojo", "anaranjado", "amarillo",
          "verde", "negro", "blanco");
  }
}
```