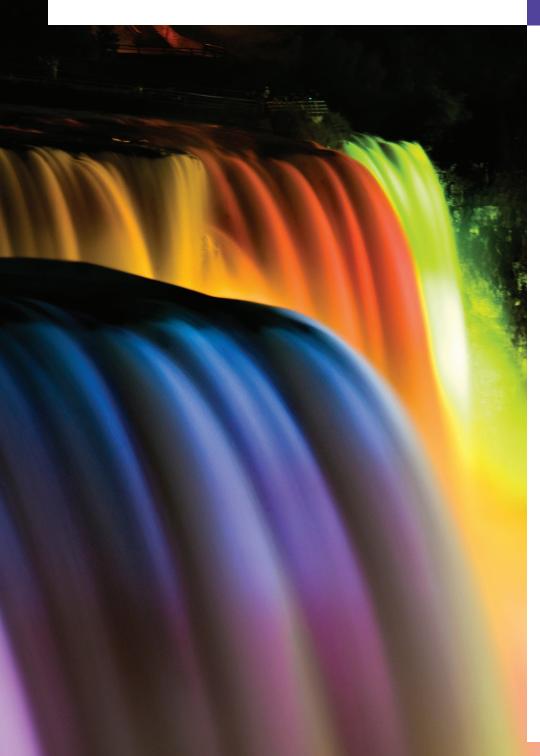# JavaServer™ Faces Web Apps: Part 1

29

If any man will draw up his case, and put his name at the foot of the first page, I will give him an immediate reply. Where he compels me to turn over the sheet, he must wait my leisure.
—Lord Sandwich

Rule One:
Our client is always right.
Rule Two: If you think our client is wrong, see Rule One.
—Anonymous

A fair question should be followed by a deed in silence.
—Dante Alighieri

You will come here and get books that will open your eyes, and your ears, and your curiosity, and turn you inside out or outside in.
—Ralph Waldo Emerson

Objectives

In this chapter you'll learn:

- To create JavaServer Faces web apps.
- To create web apps consisting of multiple pages.
- To validate user input on a web page.
- To maintain user-specific state information throughout a web app with session tracking.

Self-Review Exercises

29.1   State whether each of the following is *true* or *false*. If *false*, explain why.

a) A URL contains information that directs a browser to the resource that the user wishes to access.

ANS: True.

b) Host names are translated into IP addresses by web servers.

ANS: False. Host names are translated into IP addresses by DNS servers.

c) The path in a URL typically specifies a resource's exact location on the server.

ANS: False. The server translates a virtual directory into a real location, thus hiding a resource's true location.

d) `GET` requests and `POST` requests can both be used to send form data to a web server.

ANS: True.

e) Browsers typically cache the server's response to a `POST` request.

ANS: False. Browsers typically do not cache the server's response to a `POST` request, because the next `POST` might not return the same result.

f) A tag library defines a set of elements that can be inserted into the XHTML markup.

ANS: True.

g) You must create and manage the JavaBean objects that are used in your JSF web applications.

ANS: False. The JSF framework creates and manages objects of your JavaBean classes for you.

h) When the Faces servlet encounters an EL expression that accesses a bean property, it automatically invokes the property's *set* or *get* method based on the context in which the property is used.

ANS: True.

i) An `h:panelGrid` element organizes elements in an XHTML table.

ANS: True.

j) An `h:selectOneMenu` element is typically rendered in a web page as a set of radio buttons.

ANS: False. An `h:selectOneRadio` element is rendered as a set of radio buttons. An `h:selectOneMenu` is rendered as a drop-down list.

k) The messages specified by an element's `requiredMessage` and `validatorMessage` attributes are displayed in an associated `h:message` element when validation fails.

ANS: True.

l) The HTTP protocol provides information that enables web servers to maintain state information regarding particular clients.

ANS: False. HTTP is a stateless protocol that does not provide information that enables web servers to maintain state information regarding particular clients—a separate tracking technology must be used.

m) The `ui:repeat` element inserts its nested element(s) once for each element in a collection. The collection can be any `IEnumerable` type.

ANS: False. A `ui:repeat` element can iterate over only arrays, `List`s and `ResultSet`s. For any other object, the elements in a `ui:repeat` element will be inserted once.

29.2   Fill in the blanks in each of the following statements:

a) Java multitier applications are typically implemented using the features of _____.

ANS: Java Enterprise Edition (Java EE).

b) Computers that run _____ software make resources available, such as web pages, images, PDF documents and even objects that perform complex tasks.

ANS: web-server.

c) The JSF web-application framework's _____ processes each requested JSF page.

ANS: Faces servlet.

d) A(n) _____ exposes its data as read/write, read-only or write-only properties.

ANS: JavaBean.

e) The _____ annotation indicates that the JSF framework should create and manage instances of the class.

ANS: `@ManagedBean`.

f) A(n) _____ element contains the components with which a user interacts to provide data, such as registration or login information, to a JSF app.

ANS: `h:form`.

g) A(n) _____ element triggers an action when clicked.

ANS: `h:commandButton`.

h) A(n) _____ validator determines whether a field contains an acceptable number of characters.

ANS: `f:validateLength`.

i) A(n) _____ validator determines whether a field contains a string that matches a specified regular expression pattern.

ANS: `f:validateRegex`.

j) In a(n) _____, the browser re-requests the page and sends the values of the form's fields to the server for processing.

ANS: postback.

k) A(n) _____ bean is created when a session begins and exists throughout the entire session.

ANS: `@SessionScoped`.

Exercises

NOTE: **Solutions to the programming exercises are located in the `ch29solutions` folder. Each exercise has its own folder named `Ex29_##` where `##` is a two-digit number representing the exercise number. For example, exercise 29.3's solution is located in the folder `Ex29_03`.**