

## Chapter 14 Servlets

1. The differences between CGI and servlets are: 1. servlets are Java programs. You can use a vast collection of Java classes to develop servlets; 2. servlets are more efficient than CGI.
2. Both GET and POST methods send requests to the Web server. The POST method always triggers the corresponding CGI program to be executed. The GET method may not cause the CGI program to be executed, if the previous same request is cached in the Web browser. Web browsers often cache Web pages so the same request can be quickly responded without contacting the Web server. The browser checks the request sent through the GET method as a URL query string. If the results for the exact same URL are cached on disk, then the previous Web pages for the URL might be displayed. To ensure a new Web page always to be displayed, use the POST method. For example, a POST method should be used if the request will actually update the database. If your request is not time-sensitive, such as finding an address of a student in the database, you should use the GET method to speed up the performance.
3. You can submit a GET request directly from a URL, but a POST request must always be submitted directly from an HTML form.
4. You should use + for space, do not use quotes.

<http://liang:8080/servlet/servletdemo.FindScore?name=P+Yates>

5. To set a default Web server in Forte, choose *Set Default Server* in the context menu of the server in the *Default Servers* node under the *Server Registry* node in the Runtime tab of the Explorer. The Web module contains the servlets and configuration files necessary to run the servlets. To choose an external Web browser, choose *External Browser* in the properties for JSP & Servlets Settings in the Options window.
6. When you created a Web module, the WEB-INF directory was created under. The WEB-INF directory holds the files that are used by Tomcat server at runtime. For the servlet to run correctly, you need to place the class files into the WEB-INF\classes directory. Due to a bug in Forte 4, you have to set the target class path to \WEB-INF\classes for the compiled class files to be placed in the WEB-INF\classes directory. To do so, first mount the directory \WEB-INF\classes in the Explorer, , then set

the path in the Target property of the External Compilation.

7. When you run Tomcat from Forte, it uses port 8081. If it is already in use, it uses 8082, 8083, and so on.
8. This init, service, and destroy methods are known as life-cycle methods and are called in the following sequence.
  1. The init method is called when the servlet is first created, and is not called again as long as the servlet is not destroyed. This resembles the applet's init method, which is invoked when the applet is created, and is not invoked again as long as applet is not destroyed.
  2. The service method is invoked each time the server receives a request for the servlet. The server spawns a new thread and invokes service.
  3. The destroy method is invoked once all threads within the servlet's service method have exited or after a timeout period has passed. This method releases resources for the servlet.
9. If you change the content type to ``html/plain`` in Example 16.1, the raw HTML file would be displayed on the browser.
10. A *session* can be defined as a series of related interactions between a single client and the Web server over a period of time. To track data among requests in a session is known as *session tracking*. Three techniques for session tracking are: *using hidden values*, *using cookies*, and *using the session tracking tools from servlet API*.
11. To send images to the browser, get output stream by using `response.getOutputStream`.
12. You may embed a get request for displaying the image in the HTML content. When the HTML content is displayed, a separate get request for retrieving the image is then sent to the server. So the text and image are obtained through two separate get requests.