

Java Servlet Programming Concepts(Part 1)

For

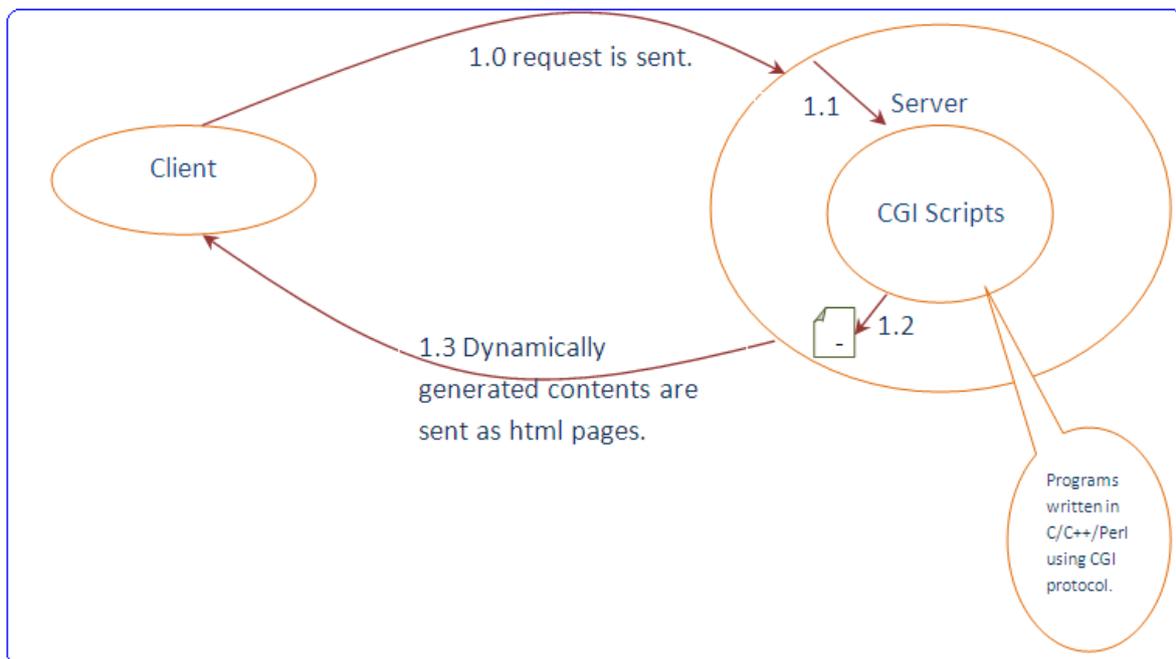
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By

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SERVLET

- Servlet is a technology for developing Web Applications in Java.
Apart from technology, **Servlet** term is also used to describe those programs which are developed using this technology.
As an Application Component, **Servlet** represents such programs which are executed within a Web Server and generates dynamic html.
Before Servlets, Dynamic Web Applications used to be developed using CGI.
- CGI is a protocol that defines standard mode of communication between web server and program. In case of CGI based application, programs were written in C, C++ or perl. These programs were called CGI scripts.



- ✓ CGI based applications had following two problems-
 - CGI scripts were platform dependent.
 - CGI scripts were executed as processes which use to create lot of overhead.
- Servlet as a technology of web development solved both the problems associated with CGI. *javax.servlet* package & its sub-packages provide *classes & interfaces* that facilitate development of Web Applications. At the core of *Servlet API*, is an *interface javax.servlet.Servlet*. This *interface* defines life cycle methods of Servlets.
- *Life cycle methods of Servlet-*

- ✓ **init()** method is invoked only once just after a **Servlet** object is created. It is used by the server to provide the reference of an object of type **ServletConfig** to the servlet. **ServletConfig** is an *interface* of **Servlet API**, implementation of which is provided by *Server Vendor*.

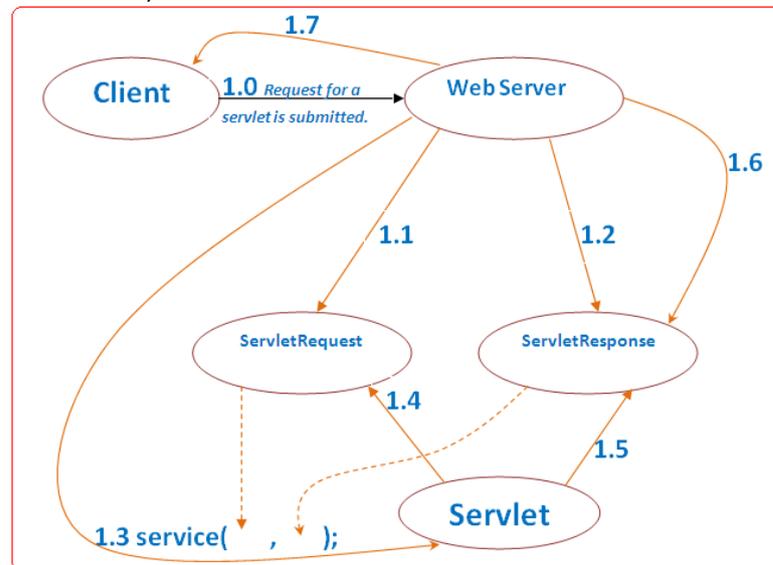
public void init(ServletConfig config);

- ✓ **service()** method is invoked by the server each time a request for the servlet is received. It is used by the Application Developer for processing request.

public void service (ServletRequest request, ServletResponse response) throws ServletException, IOException;

In this method, Web Server provides the reference of objects of type **ServletRequest** & **ServletResponse**. These are interfaces of **Servlet API** which are implemented by Server Vendor.

These two objects act as interface between WebServer and Servlet.



- 1.1 **ServletRequest** object is created for the request and request data is stored in it.
- 1.2 **ServletResponse** object is created to receive output of request processing from the servlet.
- 1.3 **service()** method is invoked and reference of **ServletRequest** and **ServletResponse** objects is provided to servlet.
- 1.4 Servlet reads request data from **ServletRequest** object.
- 1.5 Servlet stores dynamically generated HTML contents into **ServletResponse** object.
- 1.6 After request is processed, Web Server reads the contents of **ServletResponse**.
- 1.7 Contents of **ServletResponse** are sent to the client.

✓ **destroy()** method is invoked only once just before a servlet is unloaded.
public void destroy();

- *Non-life cycle methods of servlet*

✓ **getServletConfig()** method is used to obtain the reference of **ServletConfig** object from the servlet.
public ServletConfig getServletConfig();

✓ **getServletInfo()** method is used by the Application Developer to describe a servlet.
public String getServletInfo();

- In Web Applications, **http** protocol is used for communication with Web Servers.

Http protocol supports following type of requests:

- i.* Get
- ii.* Post

Used for requesting data.

- iii.* Head
- iv.* Put
- v.* Delete
- vi.* Connect
- vii.* Trace
- viii.* etc.

Used for connection management.

