Server-Side Web Scripting

Java Servlets

-Java objects that are intended to play the role of server components in client-server communications

-handles client requests by generating responses to such requests

-part of the Java EE specification (see Java Servlet API for more details)

-hosted in a ‘servlet container’ that provides the environment in which the servlet runs as well as controls the ‘servlet lifecycle’…

\*servlet lifecycle:

-instantiation => constructor call…

-creates an instance of the servlet to service client requests…

-invoked implicitly by the servlet container when the servlet is called upon to service a client request and no instance

-initialization => init () method …

-invoked only once and is intended for any startup initialization code

-request handling => service () method …

-invoked for each logic necessary in order client request

-multiple client requests are typically handled

-destruction => destroy () method …

-invoked before the servlet instance is ‘unloaded’, and is intended for any ‘housekeeping’ code that the servlet may need to run…

HTTP Servlet

-Java server used to handle HTTP requests and generate HTTP responses…

-hosted in a ‘web container’, which is a component in a Java ‘application server’ (e.g. Apache Tomcat, RedHat WildFly, Oracle GlassLion, IBM WebSphere)

-the service() method call is routed to a doXXX() call, depending on the HTTP request method, e.g. doGet(), doPost(), doHead(), doPut(), doDelete()

-the doXXX() methods are passed two argumentation

-HTTP Servlet Request

-object representation of the HTTP request sent by the client and receive by the Servlet

-access information from the request message (e.g. HTTP request method, request URI, query string, message headers, message payload)

-HTTP Servlet Response

-object representation of the HTTP response generated by the servlet and sent back to the requesting client

-used to set information in the response message (e.g. HTTP response status codes, message headers, message payload)

\*the web container facilitates the conversion to and from the HTTP request/response message to HTTP Servlet Request/ HTTP Servlet Response