**JAVA SERVLETS**

**What is Java Servlet?**

Java Servlet is a server side technology that runs on a web application server. It acts as middle layer between requests coming from clients and other server/databases in a web application. It is used to create dynamic web pages in a web application.

**Brief History**

Pavni Diwanji while working at Sun Microsystems, created the Servlet1 specification and version 1.0 was finalized in June 1997. The specification for version 2.2 was developed by Java Community Process in August 1999. Servlet 3 was released on December 2009. The latest version which is Servlet 4.0 was released on September 2017.

**Installation**

**JDK Installation**

Step 1: To download JAVA, go to their official website

Step 2: Download JDK and JRE, before you can download the JDK and JRE you must first click on the checkbox “Accept the license agreement”

Step 3: Install the JDK by clicking the download file, and just click the “Next” button to proceed

Step 4: After the Java is installed, you need to set the classpath. To set the path just follow this:

* Click the **Start Button**
* Right click on the ***Computer*** icon and choose ***Properties***
* Click the ***Advanced system settings*** which is in the upper left of the window
* Click ***Environment Variables.*** In the *System Variables* section, find the ***PATH*** environment variable and select it. Click **Edit,** add/paste the directory of the *bin folder* of the JDK file installed to the ***PATH*** environment

**Eclipse Installation**

Step 1: To download Eclipse, go to their official website

Step 2: Click the Eclipse download file to install Eclipse

Step 3: After installing, open Eclipse and a window will apear asking where to store the workspace. The workspace is where the collection of projects are located

**Apache Tomcat Installation**

Step 1: Download the latest version of Tomcat

Step 2: After downloading, unzip the apache-tomcat zip file and install

Step 3: Configure the Tomcat Server by editing 4 configuration files (**web.xml, server.xml, tomcat-users.xml and context.xml**)

**Java Servlet Life Cycle**

**Servlet Initialization**

* The ***init()*** method is only called once when the servlet is created.

**Servlet Request Handling**

* The ***service()***method is called to handle requests coming from clients and responds back to clients.
* The method calls the *doGet method* to handle GET requests and the *doPost* method to POST requests.

**Servlet Termination**

* The ***destroy()*** method is called when the life cycle of servlet ends

**Java Servlet Variable Scope**

* **Iteration level** is for current server access only. This is the request and response level (Local Variables: doGet and doPost is used here)
* **User/Session level** is used to store the user specific data
* **Application level** is used to store global data which is going to be shared in the entire application.