Today we all are aware of the need of creating dynamic web pages i.e. the ones which have the capability to change the site contents according to the time or are able to generate the contents according to the request received by the client. If you like coding in Java, then you will be happy to know that using Java there also exists a way to generate dynamic web pages and that way is Java Servlet. But before we move forward with our topic let’s first understand the need for server-side extensions.  
Servlets are the Java programs that runs on the Java-enabled web server or application server. They are used to handle the request obtained from the web server, process the request, produce the response, and then send response back to the web server.

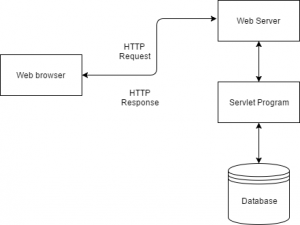
**Properties of Servlets:**

* Servlets work on the server-side.
* Servlets are capable of handling complex requests obtained from web server.

**Execution of Servlets:**   
Execution of Servlets involves six basic steps:

1. The clients send the request to the web server.
2. The web server receives the request.
3. The web server passes the request to the corresponding servlet.
4. The servlet processes the request and generates the response in the form of output.
5. The servlet sends the response back to the web server.
6. The web server sends the response back to the client and the client browser displays it on the screen.

**Servlet Architecture**



The above diagram shows the servlet architecture:

The **server-side extensions** are nothing but the technologies that are used to create dynamic Web pages. Actually, to provide the facility of dynamic Web pages, Web pages need a container or Web server. To meet this requirement, independent Web server providers offer some proprietary solutions in the form of **APIs** (Application Programming Interface).  
These **APIs** allow us to build programs that can run with a Web server. In this case, **Java Servlet** is also one of the component APIs of **Java Platform Enterprise Edition** which sets standards for creating dynamic Web applications in Java.

Before learning about something, it’s important to know the need for that something, it’s not like that this is the only technology available for creating dynamic Web pages. The Servlet technology is similar to other Web server extensions such as **Common Gateway Interface** (CGI) scripts and **Hypertext Pre-processor** (PHP). However, Java Servlets are more acceptable since they solve the limitations of **CGI** such as low performance and low degree scalability.

**Merits**

* Servlets are platform independent as they can run on any platform.
* The Servlet API inherits all the features of the Java platform.
* It builds and modifies the security logic for server-side extensions.
* Servlets inherit the security provided by the Web Server.
* In Servlet, only a single instance of the requests runs concurrently. It does not run in a separate process. So, it saves the memory by removing the overhead of creating a new process for each request.

**Services**

Servlet Container provides the following services:

* It manages the servlet life cycle.
* The resources like servlets, JSP pages and HTML files are managed by servlet container.
* It appends session ID to the URL path to maintain session.
* Provides security service.
* It loads a servlet class from network services, file systems like remote file system and local file system.

Servlet is fast in performance and easy to use when compared with traditional Common Gateway Interfaces (CGI). Through this guide you can easily learn the concepts related to Java Servlets. The project codes are developed under NetBeans IDE, so you will get an idea about some of its amazing user-friendly features as well.