Servlet

13 July 2025   09:07

8080   8081

Machine : 10.23.224.112

Output/response

https://fakestoreapi.com/products/1

client

url

request

server

Cx.

---

example.com IP?

Client

93.184.216.34

DNS server

Code for Success

Code for Success

10.22.44.2

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bafo

1.2   20Y

Code for Success.in

10.2.4.33

Cod — CPS.   8081

Startup-1

machine

1 product

client
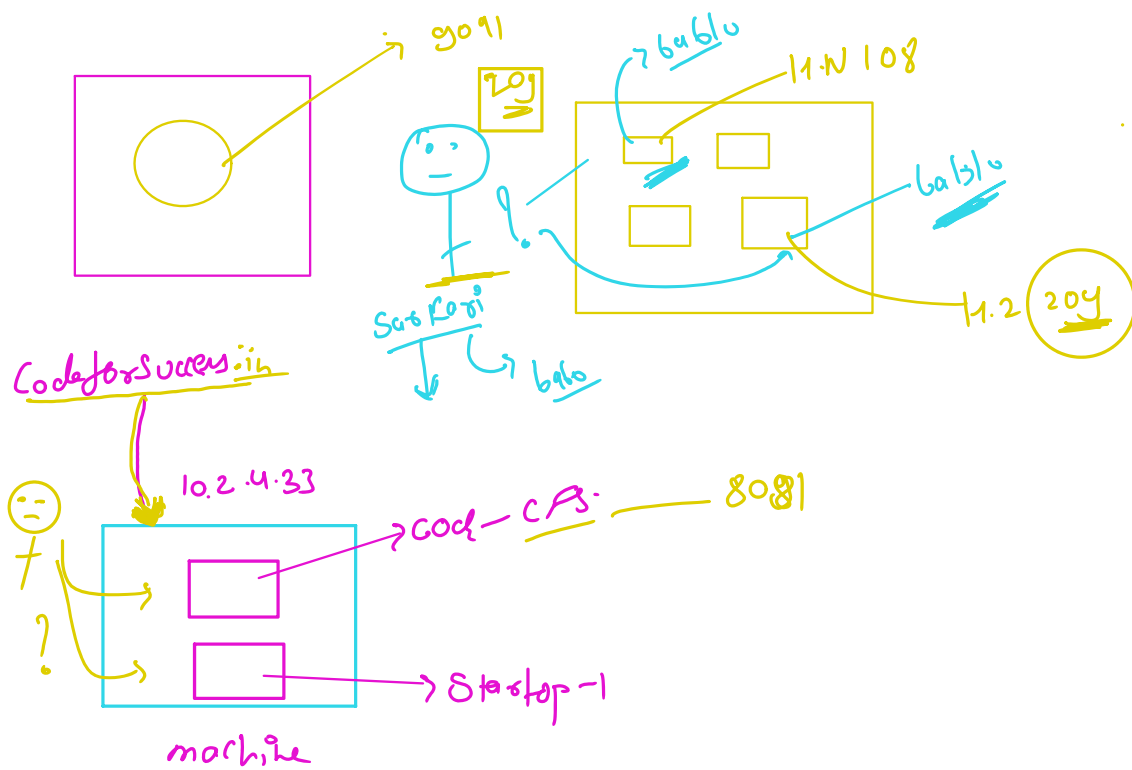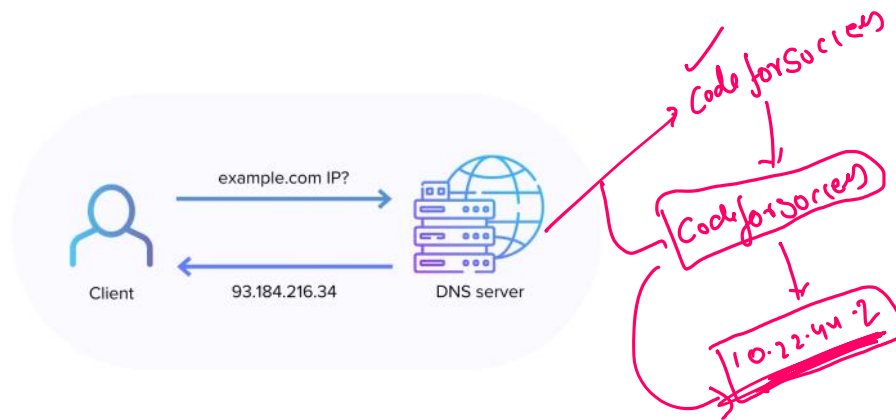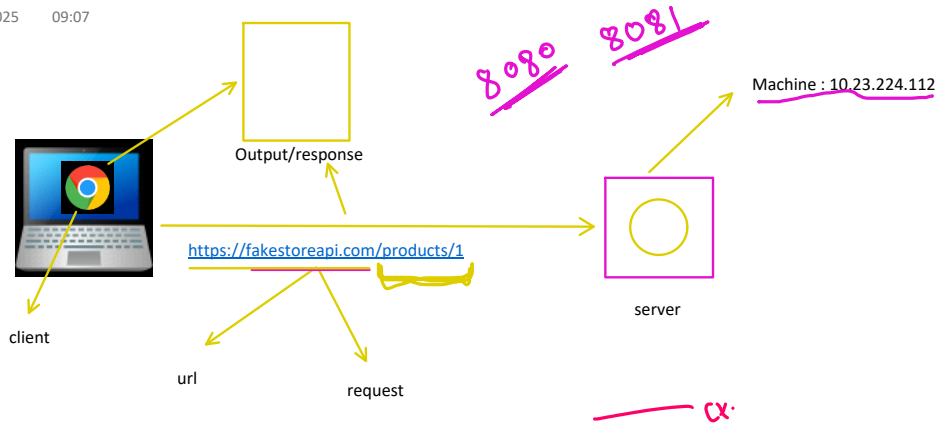
OSI model

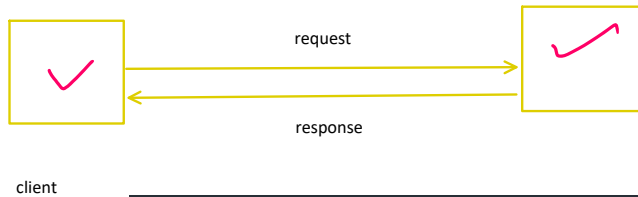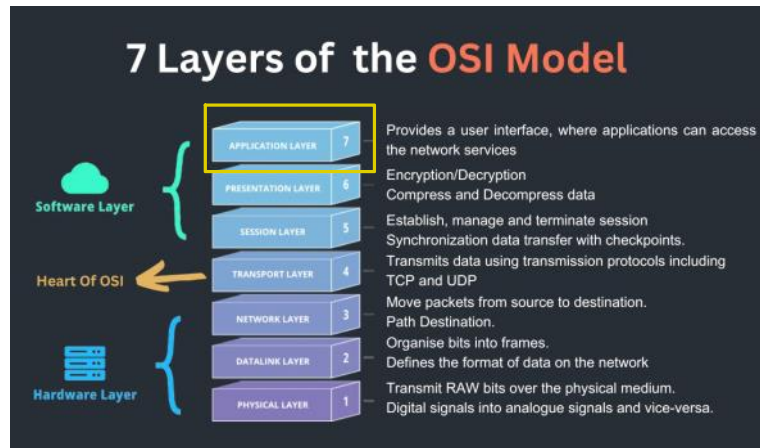# 7 Layers of the OSI Model

What is HTTP ?
1. HTTP (hypertext transfer protocol) is a stateless application level protocol
   that operates on top of TCP/IP stack and follow the client-server model

What is TCP/IP ?
TCP(transmission control protocol) - ensure reliable data delivery
IP(internet protocol) - routes data packets to the correct destination (IP address)

3-Way Handshaking(for establishing connection)
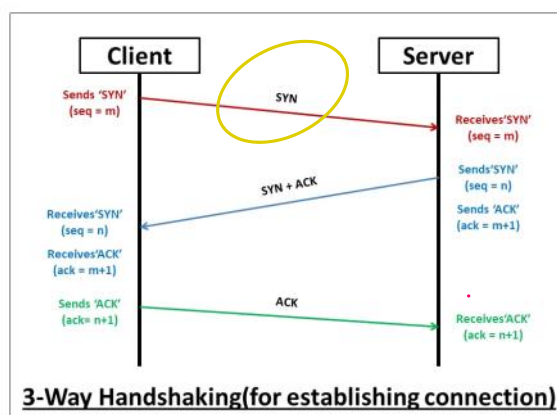
Flow:
1. Browser hit : http://codeforsuccess.in/login
2. DNS lookup
   a. Resolves codeforsuccess.in -> 10.22.123.44
3. TCP handshake and establishing connection ✓
4. HTTP request sent via TCP stream
   a. TCP breaks HTTP into packets
   b. Each packet has a seq num
   c. IP route them to server
   d. Server read that req and return response
5. HTTP response sent via TCP
6. TCP close the connection

http://codeforsuccess.in/login

① DNS

http://codeforsuccess.in/login

Chrome

10.242.114.22

②

SYN

SYN + ACK

ACK

TCP/IP
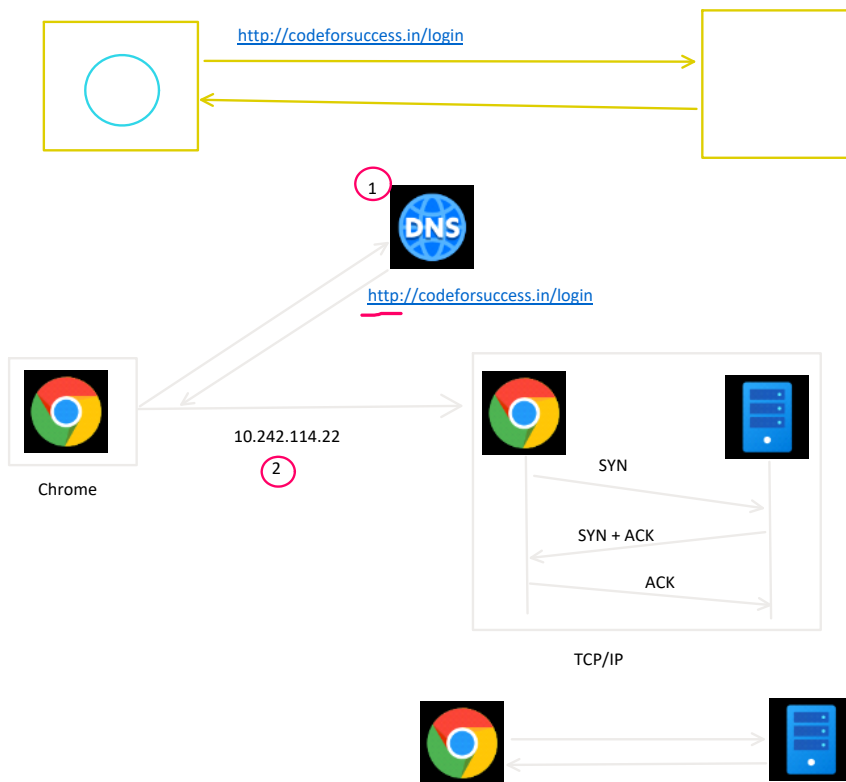
How to create servlet program

 Servlet is technology used for making web application

What is web application ?
A web application is a program that runs on a server and can be accessed
through browser by multiple users.
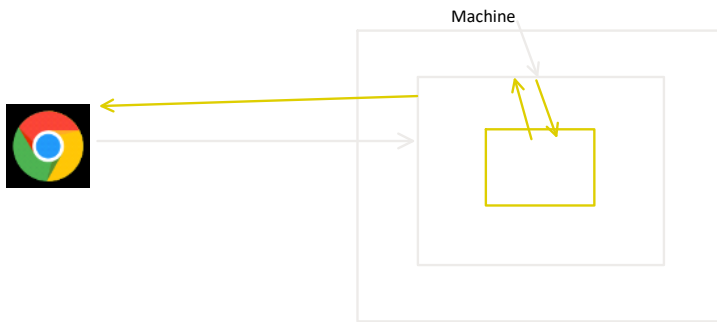
What is server ?
A server is a special program running on the machine where we will host/deploy
our application
This program will handle request from client
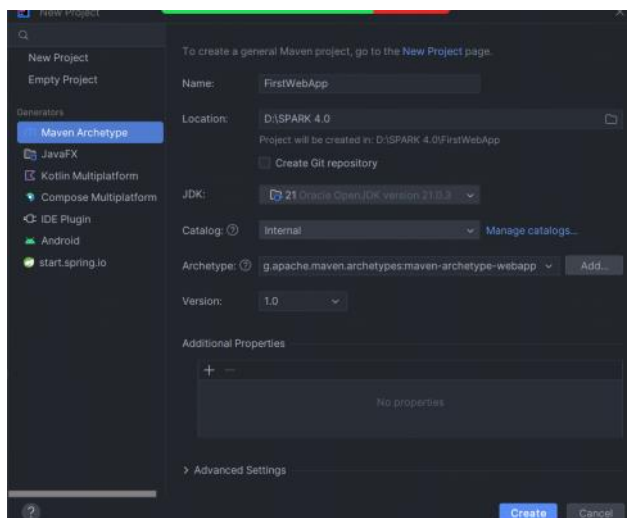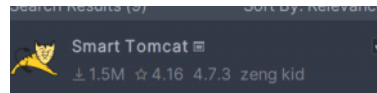This program will sends response back to client

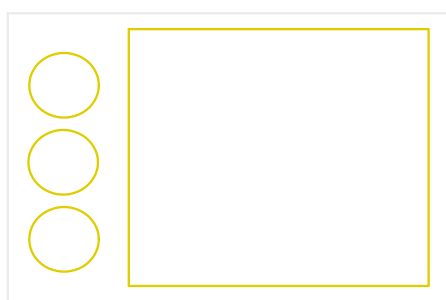Note: without server, a web application cannot function.

Machine

How to create your first web application
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1. Download IntelliJ
2. Install smart tomcat plugin
3. Create new project

Search Results (9)   Sort By: Relevance

Smart Tomcat ☰   ✓
⤓ 1.5M ☆ 4.16 4.7.3 zeng kid

New Project   ✕

Q

New Project   To create a general Maven project, go to the New Project page.
Empty Project   Name: FirstWebApp

Generators   Location: D:\SPARK 4.0   📁
  Maven Archetype   Project will be created in: D:\SPARK 4.0\FirstWebApp
  JavaFX   ☐ Create Git repository
  Kotlin Multiplatform
  Compose Multiplatform JDK: □ 21 Oracle Open JDK version 21.0.3 ⌄
  IDE Plugin
  Android   Catalog: ⑦   Internal   ⌄   Manage catalogs...
  start.spring.io
                     Archetype: ⑦ g.apache.maven.archetypes:maven-archetype-webapp ⌄ Add...

                     Version: 1.0   ⌄

                     Additional Properties
                     ┌ + — ─────────────────────────────────┐
                     │   │
                     │   No properties   │
                     └───┘

                     > Advanced Settings

   ?   Create   Cancel

What is maven ?

                                                                        ◯
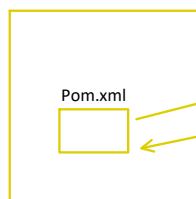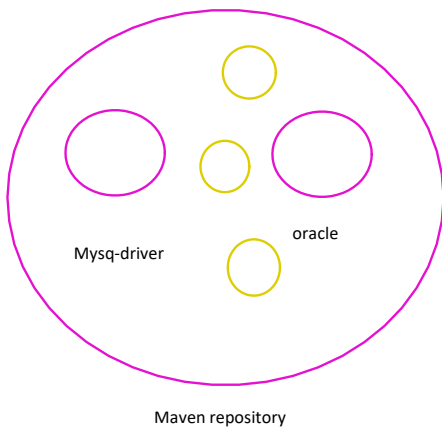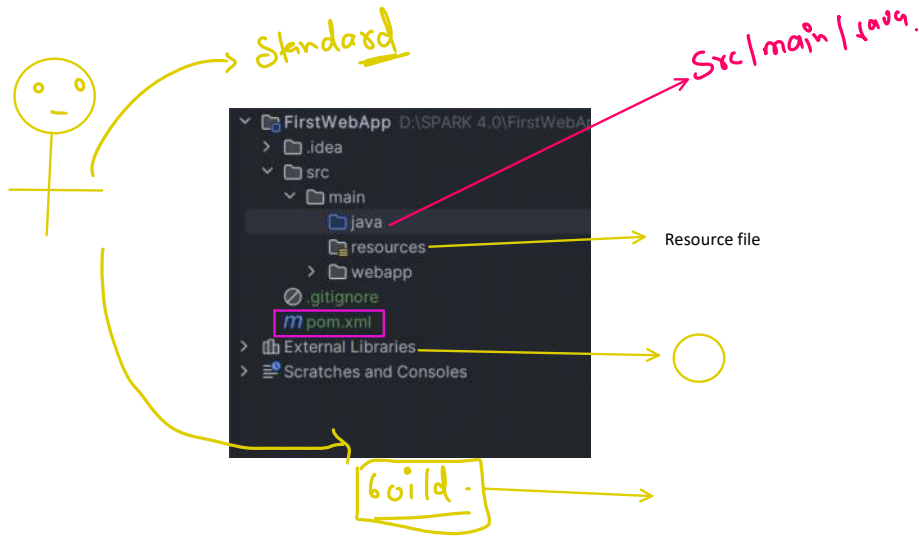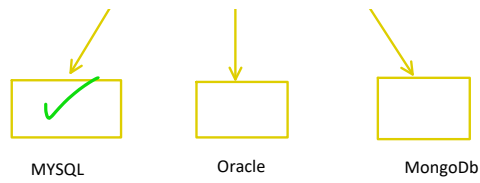
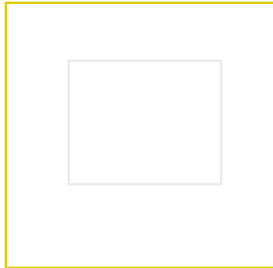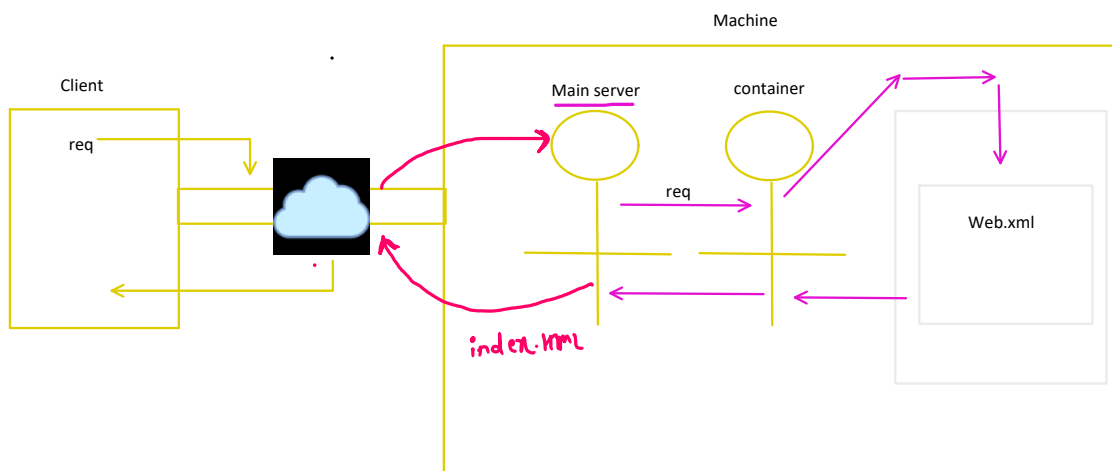   Jar file

JDBC application

Java

MYSQL   Oracle   MongoDb

Standard

Src/main/java.

FirstWebApp D:\SPARK 4.0\FirstWebA
- .idea
- src
  - main
    - java
    - resources   Resource file
    - webapp
  - .gitignore
  - pom.xml
- External Libraries
- Scratches and Consoles

build.

Mysq-driver   oracle

Maven repository

Pom.xml

```
<dependency>
  <groupId>mysql</groupId>
  <artifactId>mysql-connector-java</artifactId>
  <version>8.0.32</version>
</dependency>
```

Pom.xml

Cloud repo

.m2
Local repo

Servlet

Tomcat server

Break ⟶ 11:20

Servlet life cycle

Int()
Service()
Destroy()

Machine

Client

Main server   container

req

req

Web.xml

index.html

/login

/login

protocol

http://localhost:8081/ServletLifeCycle/login

domain

port

Wep app

servlet

HttpServlet

Init()
Service()
Destroy()

GenericServlet

User defined servlet
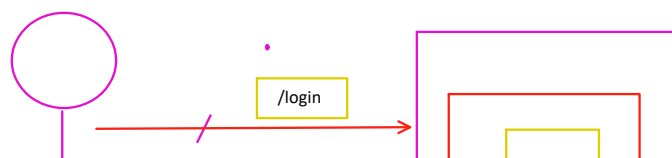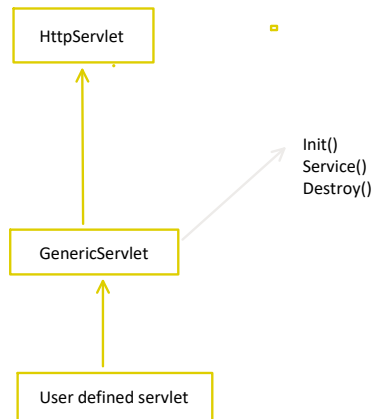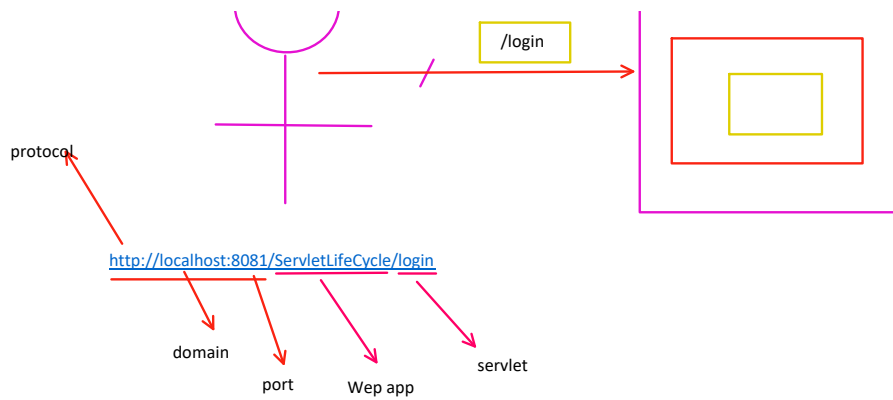
Http : stateless protocol
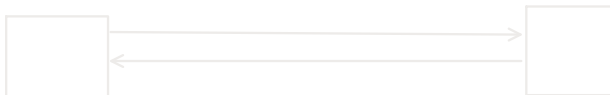
HTTP Request Methods

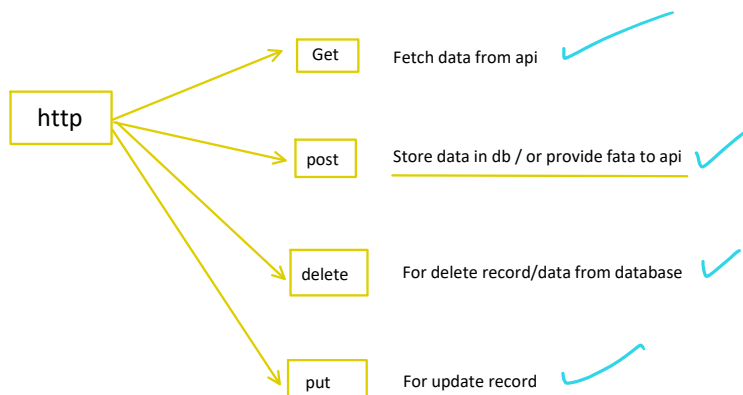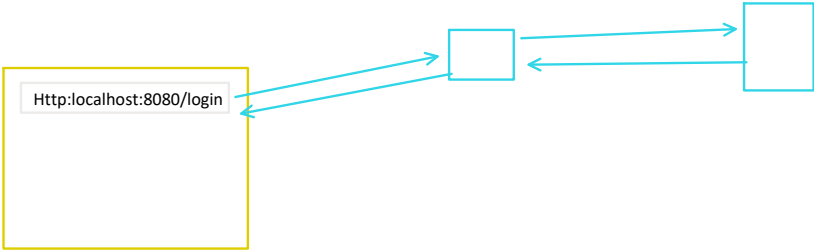| Method	Description
GET	Retrieves data or resource from a specified URL. It is used to retrieve information without modifying it.
POST	Submit data or creates a new resource on the server. It is used to send data to be processed by the server. It often results in the creation of a new resource on the server.
PUT	Updates the existing resource with the new data. It replaces the entire resource or creates it if it does not exist.
DELETE	Deletes the specified resource from the server.
PATCH	Partially updates the existing resource with the provided data. PATCH request does not create a new resource if the specified resource does not exist on the server.
HEAD	Retrieve only the headers of a response. It is used to check the status or headers of a resource without fetching the actual content.
OPTIONS	Fetch or Retrieve the allowed methods and other information of the specified resource.
TRACE	The TRACE method echoes back the received request to the client, allowing clients to inspect the request and see any modifications or additions made by intermediaries. It is mainly used for the diagnostic purposes.
CONNECT	Converts the request connection to a transparent TCP/IP tunnel, commonly used for establishing secure SSL/TLS connections through proxies.

TestKarts.com

```
public class MyFirstWebApp extends GenericServlet {
    public void service(ServletRequest req, ServletResponse res) throws
ServletException, IOException {
        res.setContentType("text/html");
        PrintWriter out=res.getWriter();
        out.println("<h2> Hello from genie ashwani </h2>");
    }
}
```
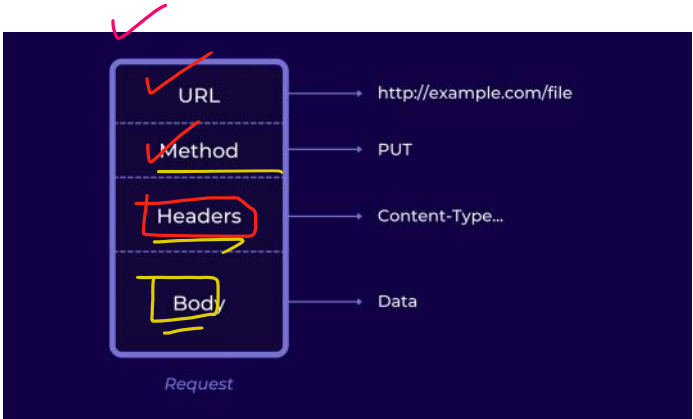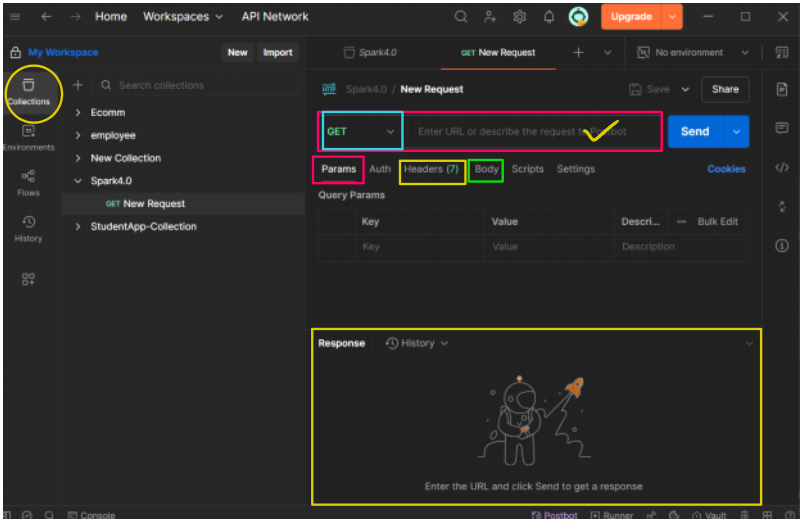
Http

http

- Get — Fetch data from api
- post — Store data in db / or provide fata to api
- delete — For delete record/data from database
- put — For update record

https://my-json-server.typicode.com/horizon-code-academy/fake-movies-api/movies

Http:localhost:8080/login

Postman : testing tool for testing API

ServletConfig
ServletContext

Cookies And Session

Cookies :
1. Key-value pair
2. Use for small amount for data like user info
3. Store data at client(browser) side

Session:
1. Store server data at side
2. We can store much bigger amount of data as compare to cookies

JSESSIONID

User = Dipali

Id = jsessionid

JSESSIONID

1