Tomcat -----------   Tomcat is a web server !!!!!!

What is a web server ?

Server ?
        Server is a program = that runs on a FIXED IP PORT
                That runs continuously waiting for the client request !!
                When it gets the client request - it will process the request
                Create a response and send to client

Client ?
        Client is a program = that runs on ANY IP PORT
                It runs when it has to do something
                It will create a request and send
                Waits for the response
                Processes the response

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Client or Server are two different programs
Locations will be different !!!
Location IP   +   Port number

The machine of the server is found by the IP address --------
IP address = Internet Protocol address   =   localhost , 127.0.0.1 (loopback address)
OR
IPv4 Address. . . . . : 192.168.1.101 on a particular network

Port number of the server -------- the program number assigned to the server on that machine

        We can assign a port number = integer = fixed
        OR
        OS also assigns a port number randoml

MySQL --- localhost : 3306
Tomcat ----localhost :8080

PORT numbers are UNIQUE on the same machine !!!
        BINDING PORT number to the SERVER or to Client
        If the port number is already bound then the server wont start
                Solution
        1. Close the program on that port
                OR
        2. change the port number of tomcat

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Web Server ----- the server that understands requests and response in http format
Web Client ---- the client that understands requests and response in http format
Web application ---- application that has web server and web client .

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Hyper text transfer protocol   = Http

Http Request Format	
(first line of http request) Http Method URL http version	GET /hello.htm HTTP/1.1

Http Header
  hostname :
  useragent:
  accept:
  ….
….
….
…
	User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
	Host: 192.168.1.101:8080
	Accept:
	`text/html,application/xhtml+xml,application/xml;q=`
	`0.9,image/webp,image/apng,*/*;q=0.8`
	
	Accept-Language: en-us
	Accept-Encoding: gzip, deflate
	Connection: Keep-Alive
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	POST /cgi-bin/process.cgi HTTP/1.1
	User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
	Host: www.tutorialspoint.com
	Content-Type: application/x-www-form-urlencoded
	Content-Length: **length**
	Accept-Language: en-us
	Accept-Encoding: gzip, deflate
	Connection: Keep-Alive

Http Request Body	licenseID=string&content=string&/paramsXML=string
the file to be uploaded OR the data to be sent to server	

Http Response Format	
status line } httpversion status-code status-message	Http/1.1 200 OK
Response Header	Content-type : MIME types Content-length : Server : Apache Cookies : ….. Date: _____

Response Body	File / data to be sent to the client

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Http request is created by ? Browser

Accept and Content-Type Headers :   value is the list of MIME types

MIME type = the type of <mark>file formats</mark> that can be accepted by browser or that is sent to the server

Http Methods ---------- different ways of making request !!!
     GET , POST, PUT, DELETE , TRACE ,……..

GET request	Simple http request without request body
	All data that should be sent to server is sent in the URL
	Default Http Request

POST request	Http request that has request body
	All data that should be sent to server is NOT sent in the URL
	It is sent as part of the http request body

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    Use Eclipse --- create a WAR file
    DEPLOY it on tomcat
    Access your html page from tomcat url !!!

    DEPLOY = submit the project to the WEB SERVER
             Web server will publish it on its IP PORT number

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    WAR = Web Archive ---- this is a JAR file used for web application
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    Access the web application from the browser ----
        create URL = Uniform Resource Locator ----
               protocol :// ip : port / WARFILENAME/html name

               http://localhost : 8080/FirstWebApp/first.html

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      1. JEE Perspective
      2. Dynamic Web Application

3. we added our own HTML
4. deploy the war in the Tomcat (copy the war in tomcat/webapps)
5. access the html from the browser !!!

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html Links ------
      `<a  href= "" >`

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Create a dynamic web project ---- HWExample
    First page ---
          WELCOME   and an Image of your choice !!
            Show links ----
            Convert Rupee To Dollar
            Register
            Good Bye

On each html add a home link that will take you welcome page !!!!
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Static HTML   , DYNAMIC HTML ------------------------

      STATIC HTML ---- hard coded html that is created BEFORE DEPLOYMENT
      DYNAMIC HTML ----- html generated AFTER DEPLOYMENT when the request is made

READ about difference between static and dynamic html !!!