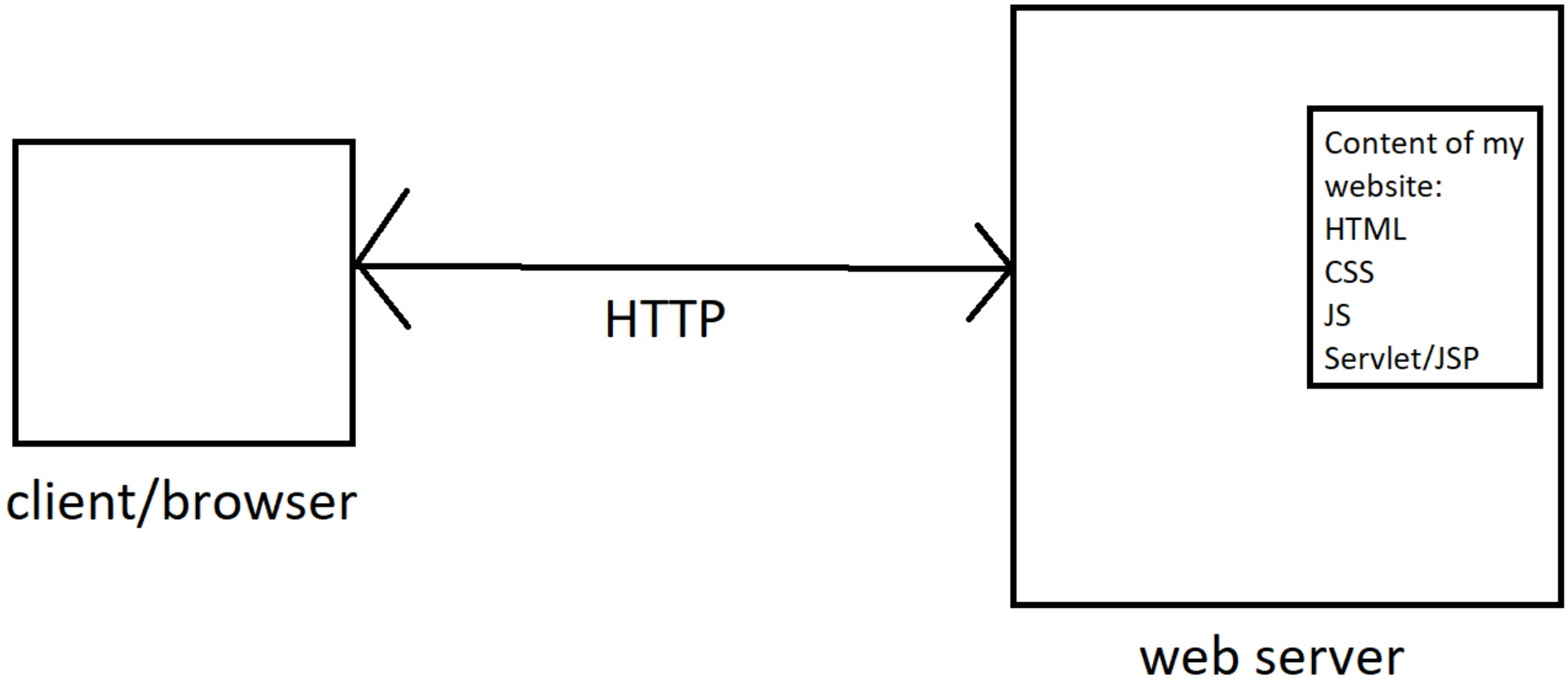
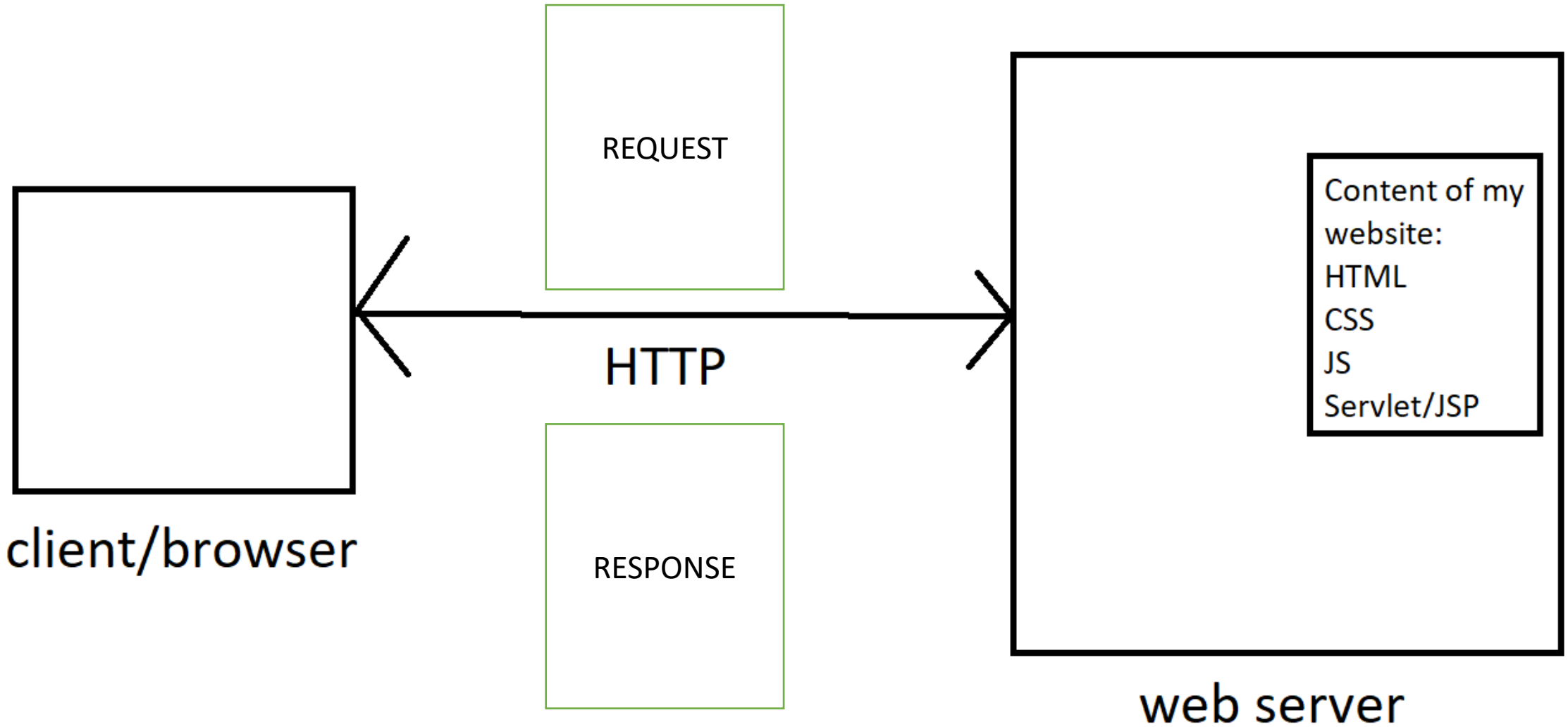
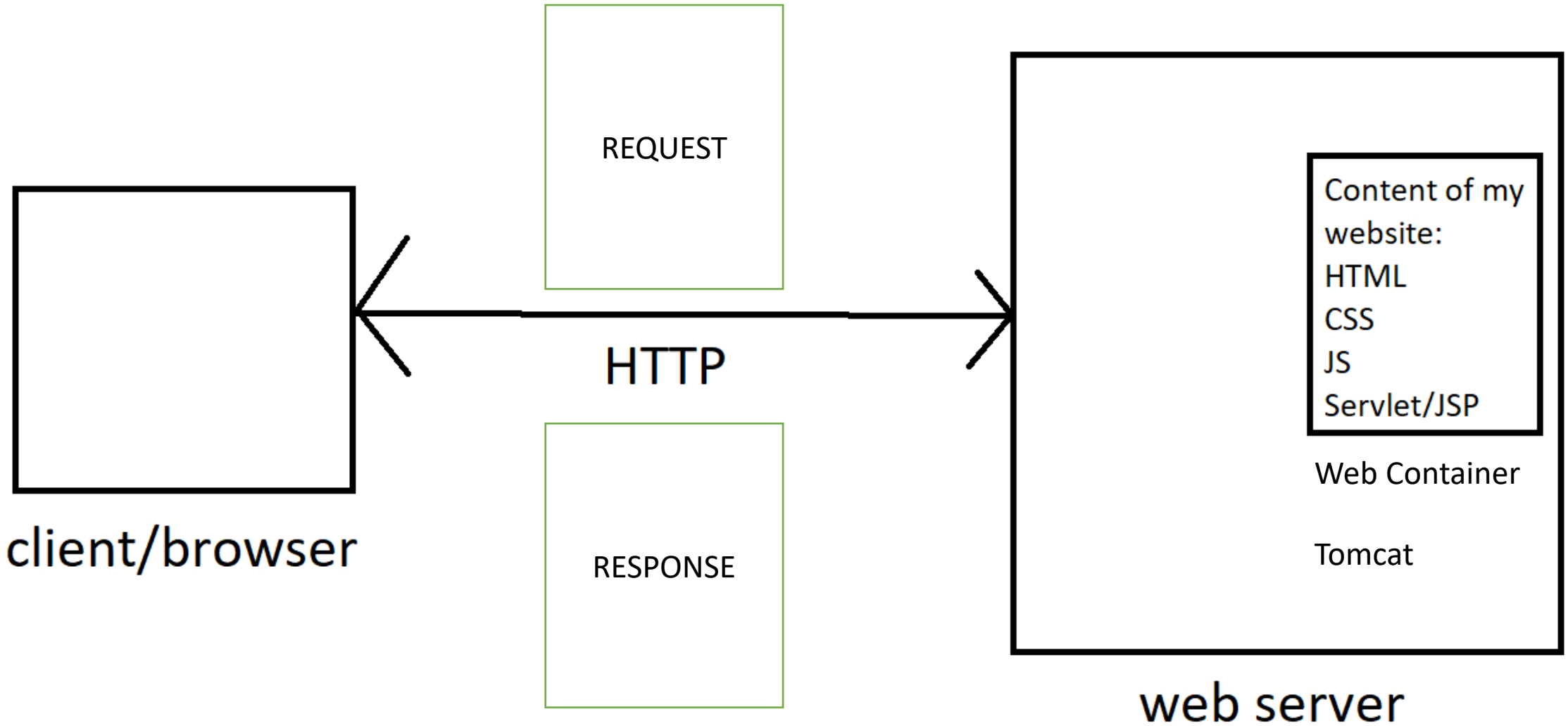
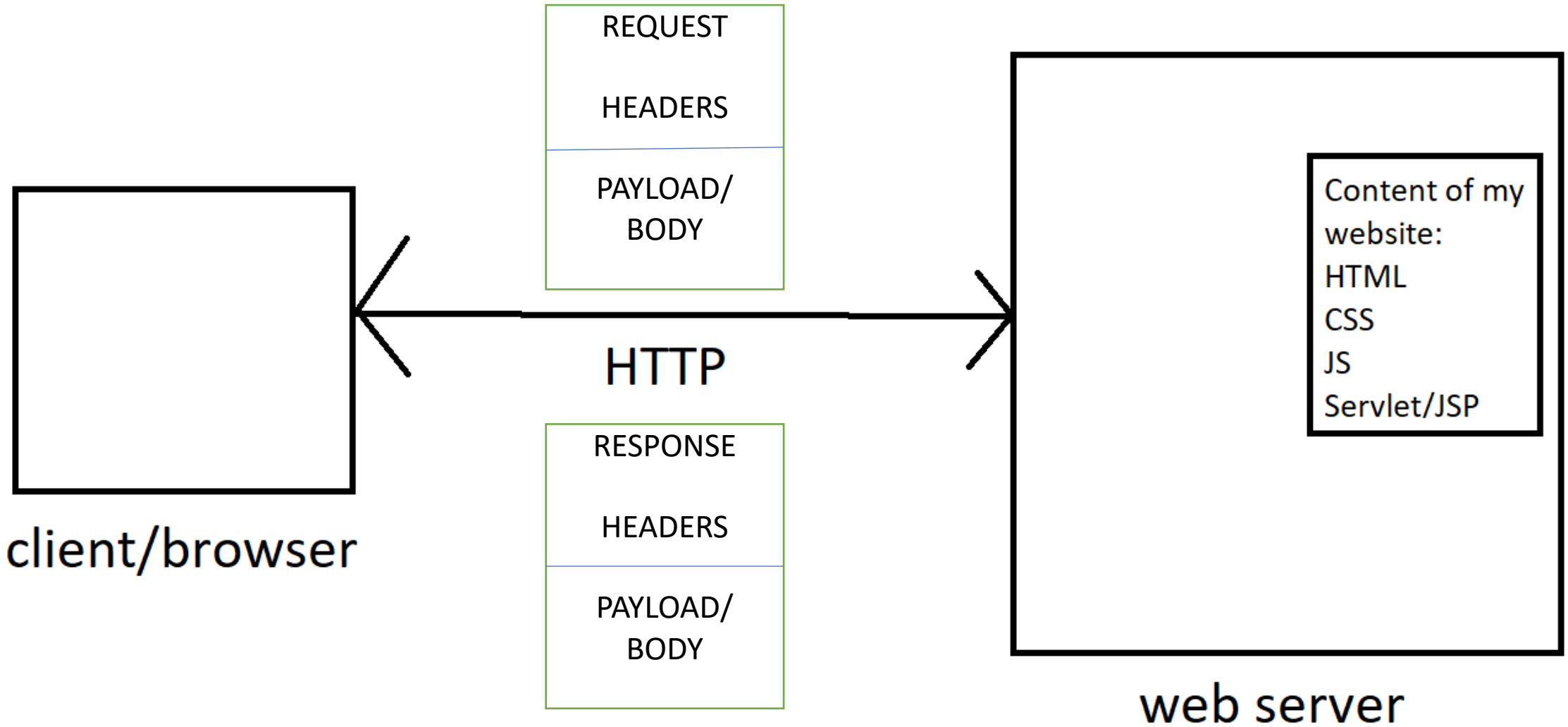
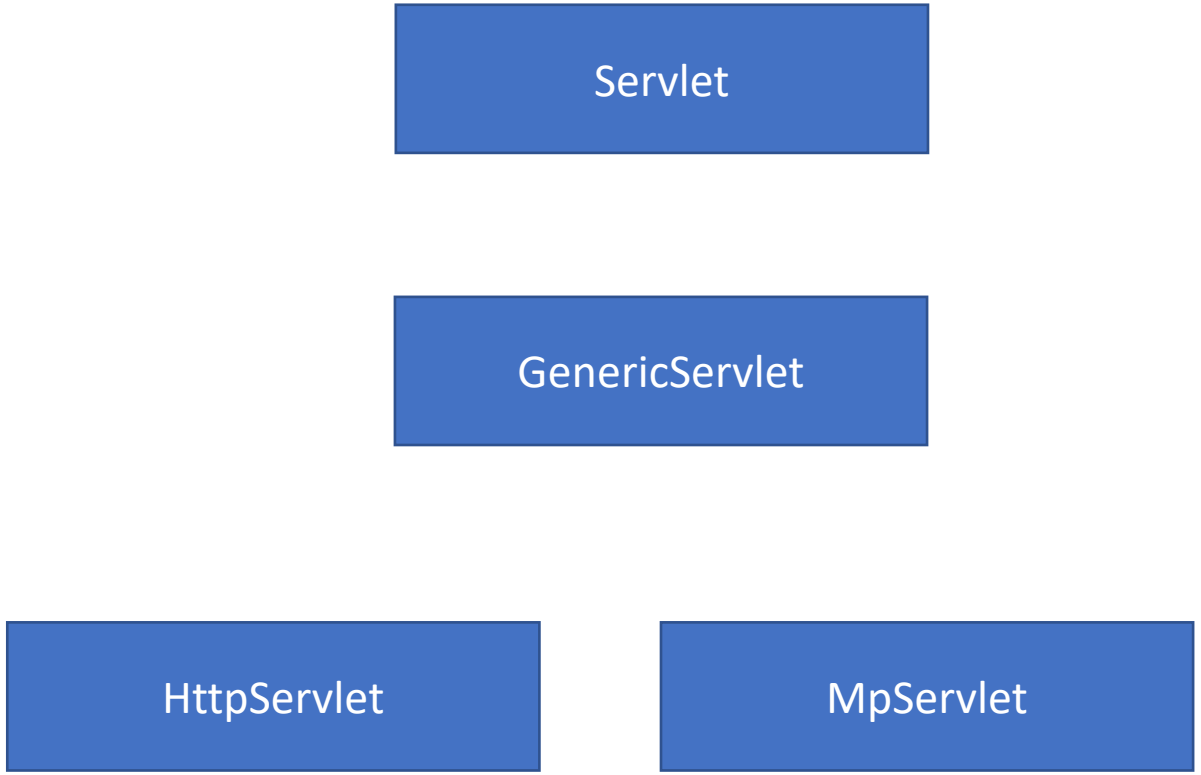
roughwork

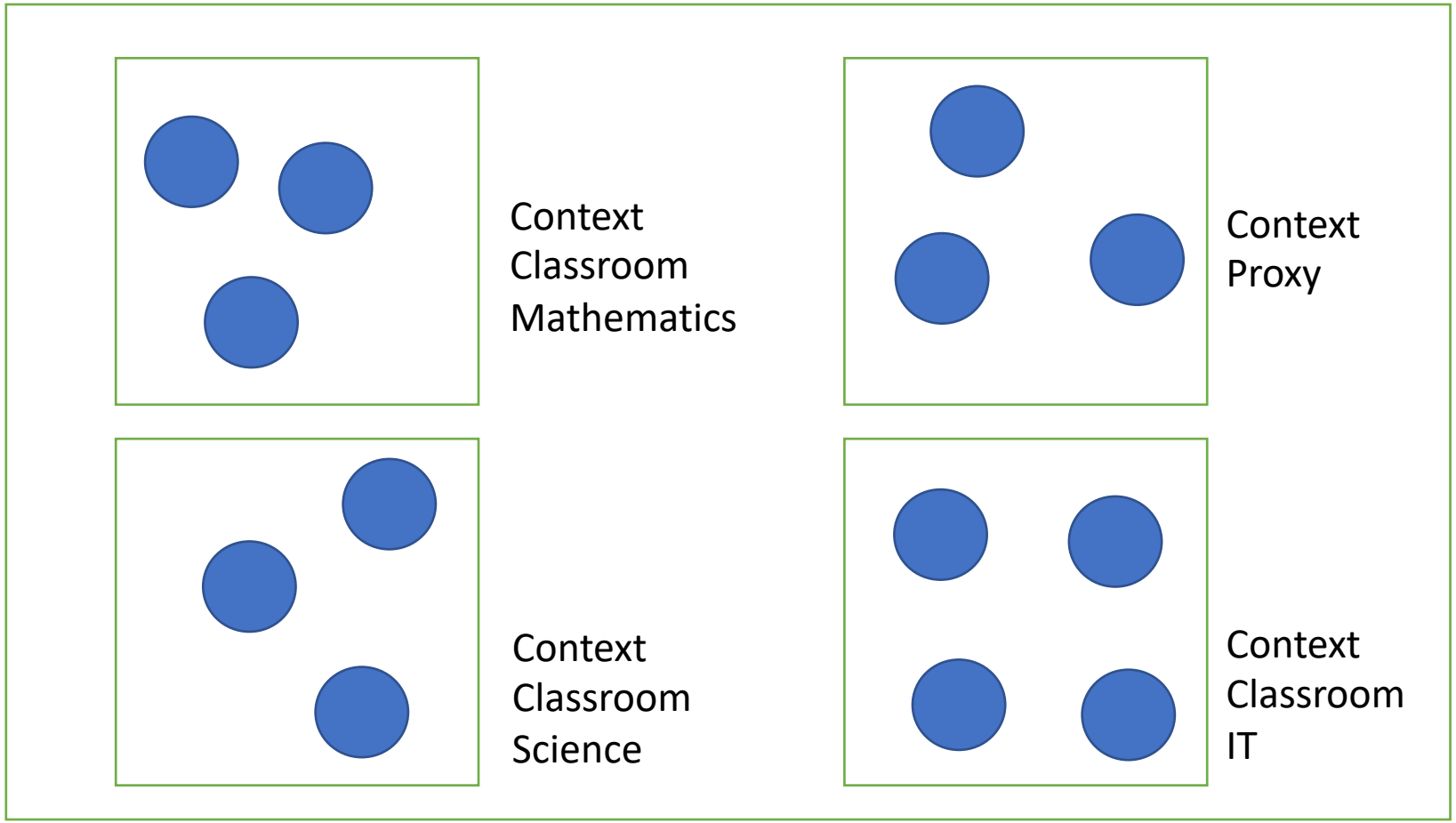

Content of my website:
HTML
CSS
JS
Servlet/JSP
HTTP
client/browser
web server

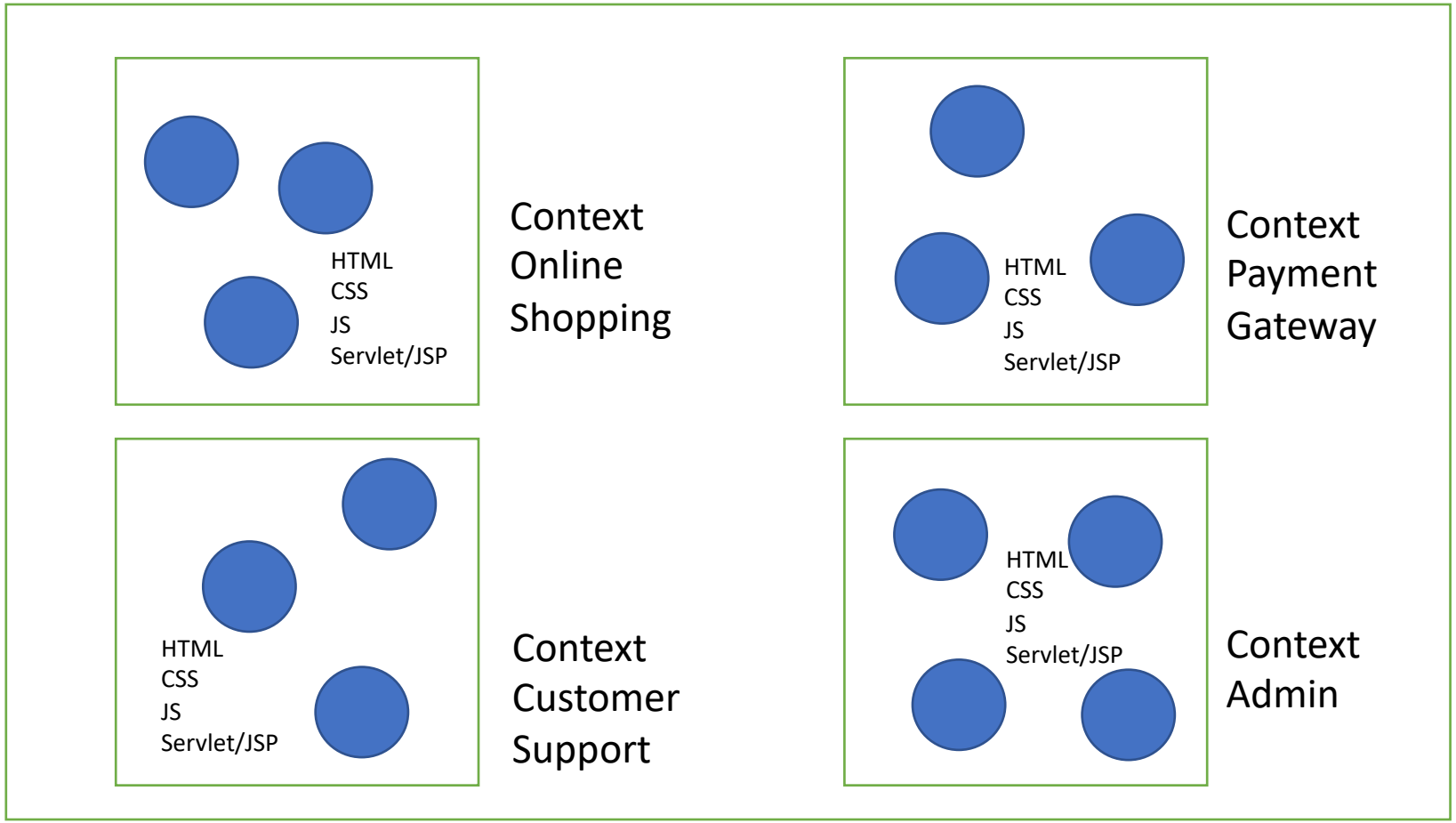

REQUEST
Content of my website:
HTML
CSS
JS
Servlet/JSP
HTTP
client/browser
RESPONSE
web server

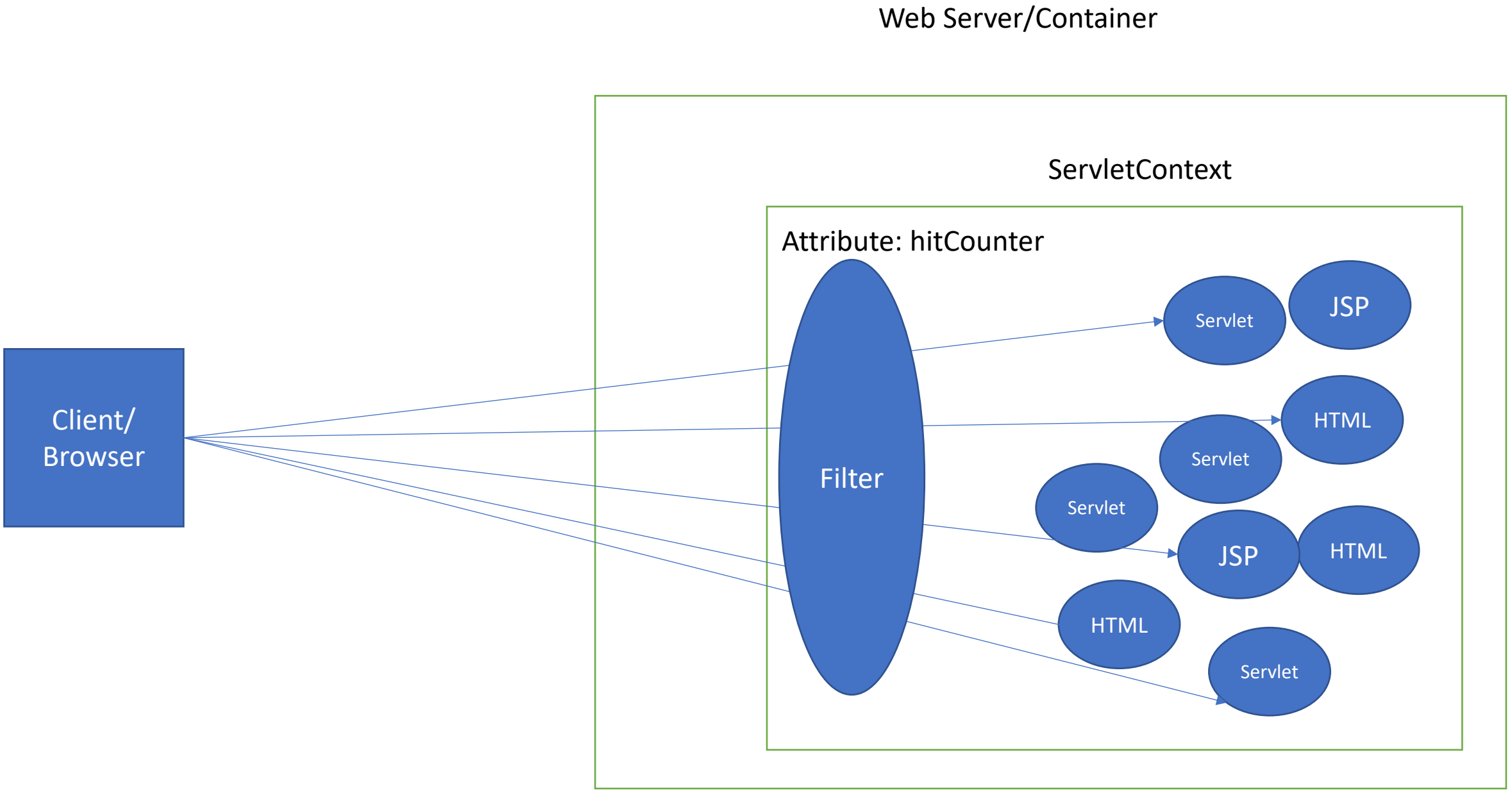

REQUEST
HTTP
RESPONSE
client/browser
Content of my website:
HTML
CSS
JS
Servlet/JSP
Web Container
Tomcat
web server
IIS

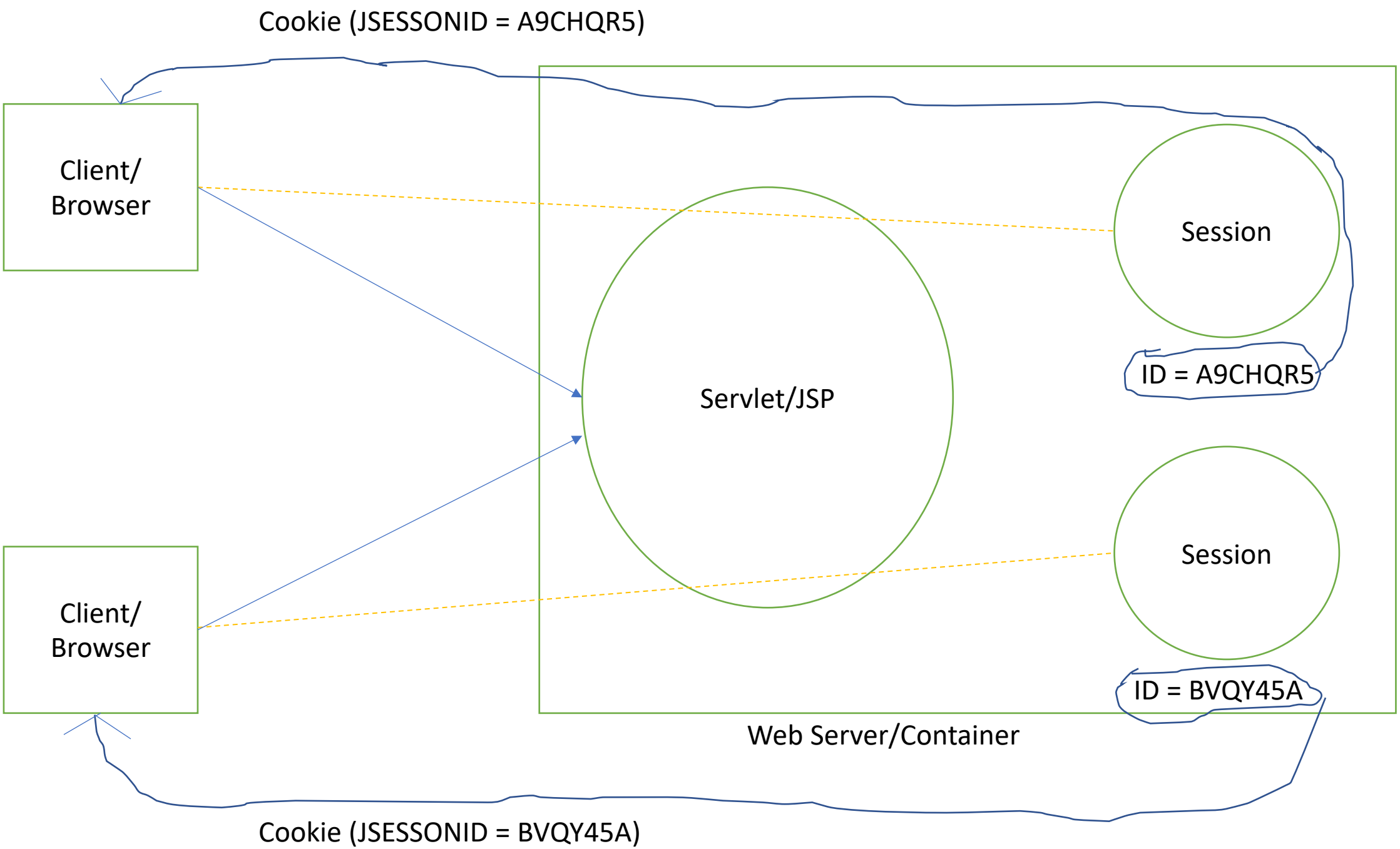

REQUEST
HEADERS
PAYLOAD/
BODY
HTTP
RESPONSE
HEADERS
PAYLOAD/
BODY
client/browser
Content of my
website:
HTML
CSS
JS
Servlet/JSP
web server

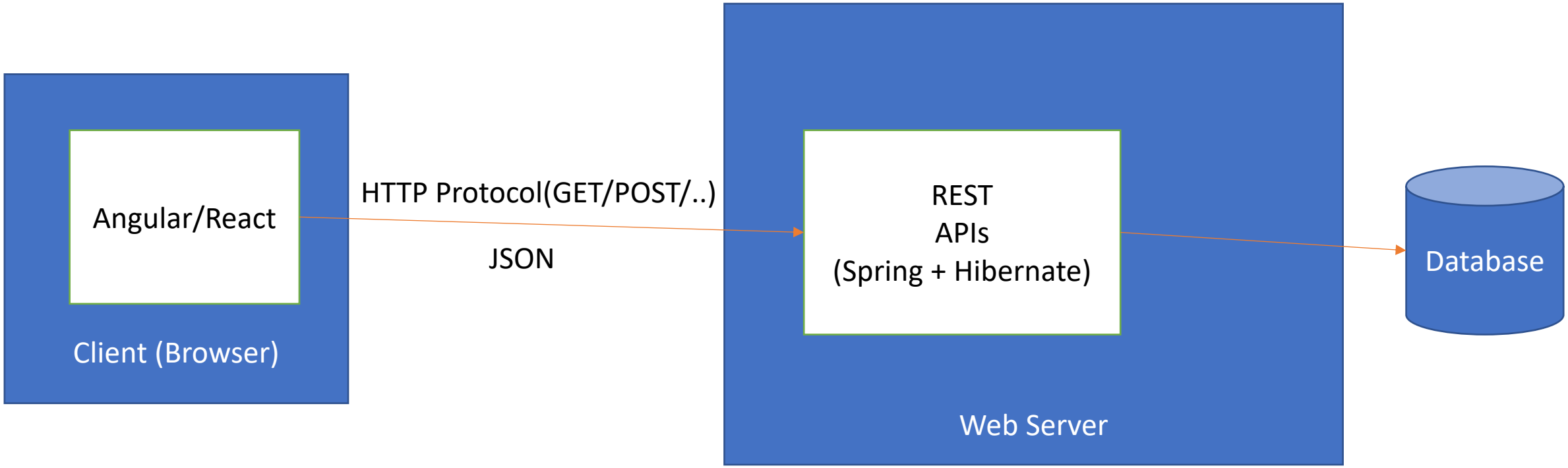

Servlet
GenericServlet
HttpServlet
MpServlet

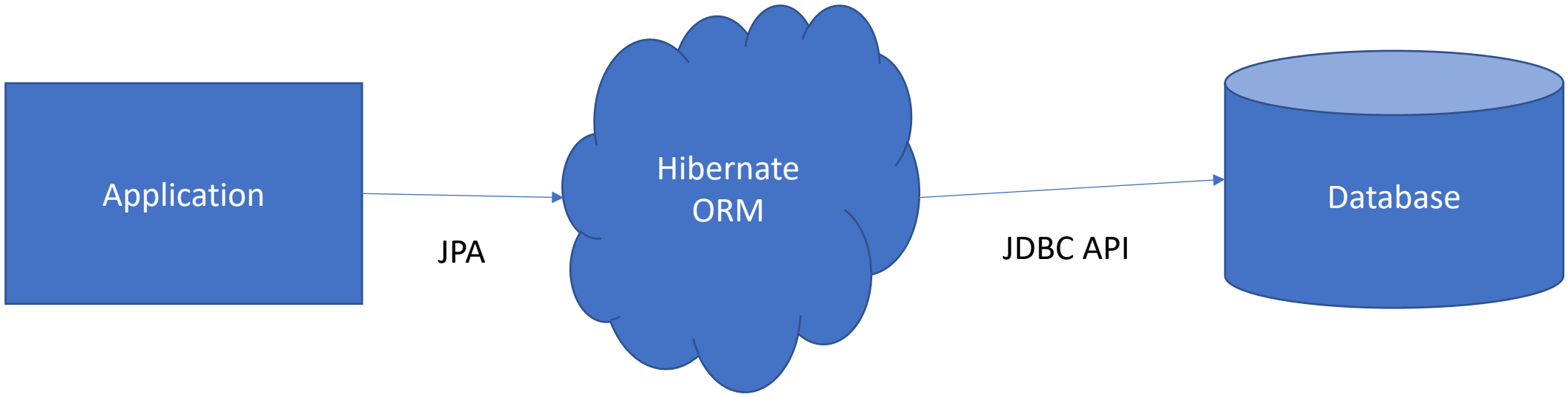

Context
Classroom
Mathematics
Context
Proxy
Context
Classroom
Science
Context
Classroom
IT
Web Server/Container

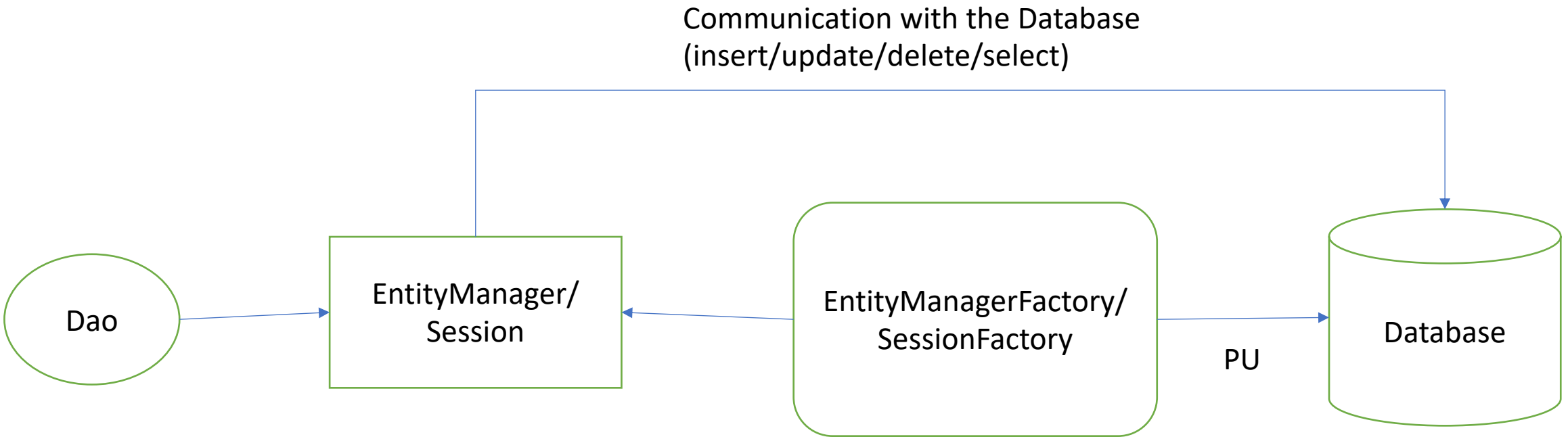

HTML
CSS
JS
Servlet/JSP
Context
Online
Shopping
HTML
CSS
JS
Servlet/JSP
Context
Payment
Gateway
HTML
CSS
JS
Servlet/JSP
Context
Customer
Support
HTML
CSS
JS
Servlet/JSP
Context
Admin
Web Server/Container


Web Server/Container
ServletContext
Attribute: hitCounter
Client/
Browser
Filter
Servlet
JSP
HTML
Servlet
Servlet
JSP
HTML
HTML
Servlet


Cookie (JSESSONID = A9CHQR5)
Client/
Browser
Client/
Browser
Servlet/JSP
Session
ID = A9CHQR5
Session
ID = BVQY45A
Web Server/Container
Cookie (JSESSONID = BVQY45A)


Angular/React
Client (Browser)
HTTP Protocol(GET/POST/..)
JSON
REST
APIs
(Spring + Hibernate)
Web Server
Database


Application
JPA
Hibernate
ORM
JDBC API
Database


Communication with the Database
(insert/update/delete/select)
Dao
EntityManager/
Session
EntityManagerFactory/
SessionFactory
PU
Database

ASSOCIATION (ONE TO ONE)

TBL_CUST

CUST_ID (PK)	NAME	EMAIL	ADDR_ID (FK)	
111	MAJRUL	MAJRUL@GMAIL	100	

TWO CHOICES:

SHOULD I KEEP ADDR_ID AS FK IN CUST TABLE

OR

SHOULD I KEEP CUST_ID AS FK IN ADDRESS TABLE

TBL_ADDRESS

ADDR_ID (PK)	CITY	PINCODE	STATE	
100	MUMBAI	400001	MH	
200	PUNE	421001	MH	

ASSOCIATION (ONE TO ONE)

TBL_PERSON

PERS_ID (PK)	NAME	DATE_OF_BIRTH	EMAIL

TBL_PASSPORT

PASSPORT_NO (PK)	ISSUE_DATE	EXPIRY_DATE	ISSUED_BY	PERS_ID (FK)

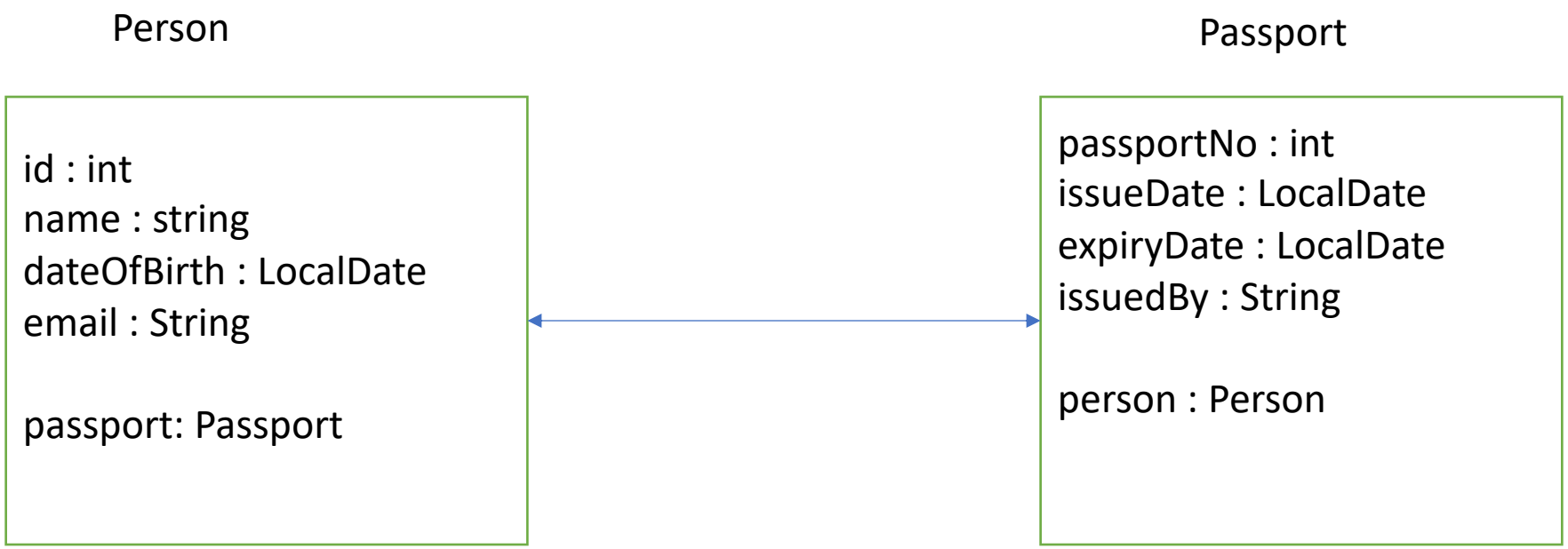
ASSOCIATION (ONE TO ONE)

TBL_PERSON

PERS_ID (PK)	NAME	DATE_OF_BIRTH	EMAIL

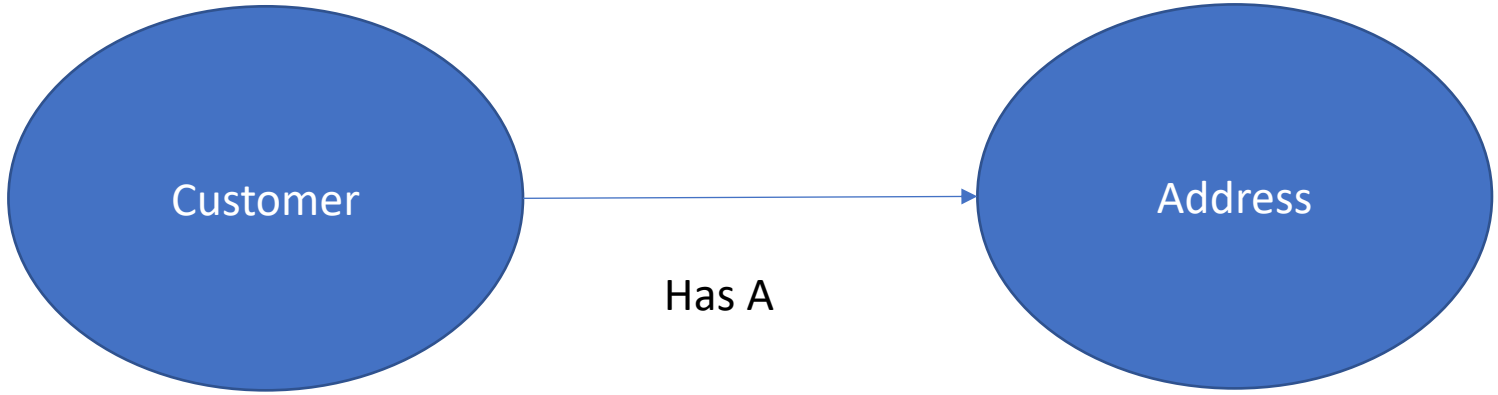
TBL_PASSPORT

PASSPORT_NO (PK)	ISSUE_DATE	EXPIRY_DATE	ISSUED_BY	PERS_ID (FK)



What we need is, if the customer data is inserted, the address of the customer should also get inserted automatically

The above is achieved by using cascade property



TBL_ALBUM/MOVIE
ONE TO MANY

ASSOCIATION (ONE TO MANY/MANY TO ONE)

ALBUM_ID	NAME	RELEASE_DATE	COPYRIGHT
111	HITS OF 2021	2021-12-25	SONY MUSIC
222	HITS OF 2020	2020-11-30	AMAZON MUSIC

TBL_SONG
MANY TO ONE

SONG_ID	TITLE	ARTIST	DURATION	ALBUM_ID
100	ABC	ED SHEERAN	3.30	111
200	XYZ	TAYLOR SWIFT	4.00	111
300	GHI	ED SHEERAN	3.45	111
400	AAA	ED SHEERAN	4.00	222
500	BBB	TAYLOR SWIFT	3.00	222

TBL_DEPT

ASSOCIATION (ONE TO MANY/MANY TO ONE)

DEPTNO	NAME	LOCATION	
10	IT	ANDHERI	
20	HR	VASHI	

TBL_EMP

EMPNO	NAME	SALARY	DATE_OF_JOINING	DEPTNO
1001	RAJ	50000	10-JAN-2020	10
1002	RAVI	35000	15-MAR-2021	20
1003	SNEHA	45000	30-JAN-2019	20
1004	SITA	50000	15-APR-2022	10
1005	MICHAEL	50000	30-MAR-2022	20

TBL_BOOK

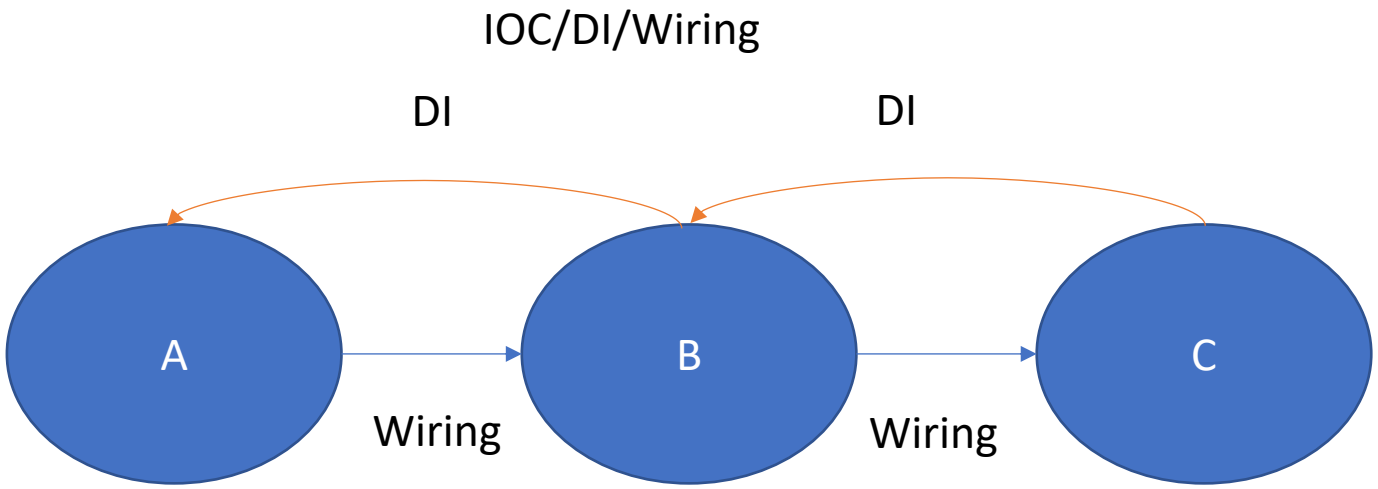
ID	NAME	COST
111	HEAD FIRST DESIGN PATTERNS	2500
222	HEAD FIRST JAVASCRIPT	1500

TBL_AUTHOR

ID	NAME	EMAIL
100	ERIC FREEMAN	ERIC@GMAIL
200	ELISABET ROBSON	ELISA@GMAIL

TBL_BOOK_AUTHOR

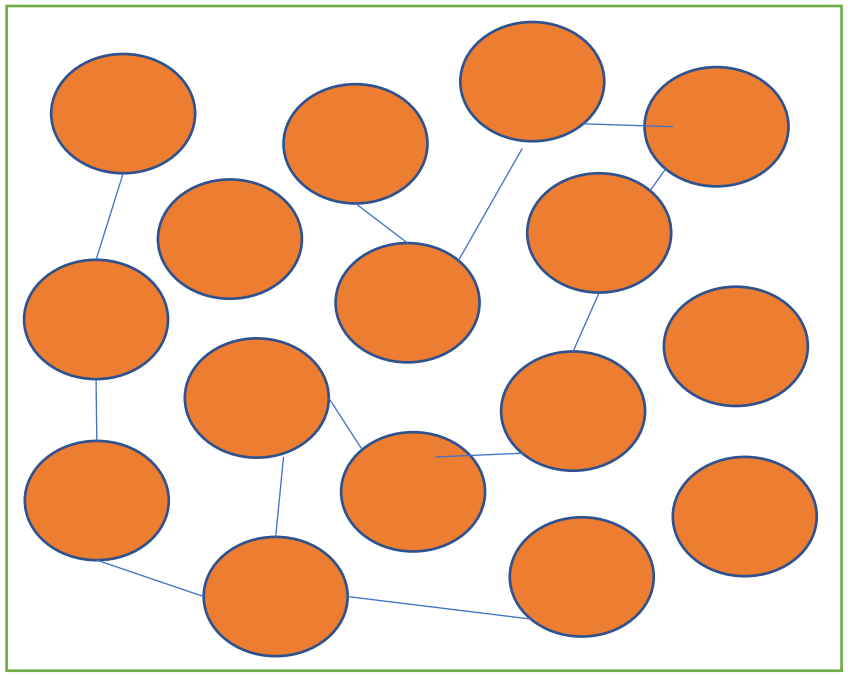
BOOK_ID	AUTHOR_ID
111	100
111	200
222	100
222	200



An application is nothing but collection of objects, all interconnected

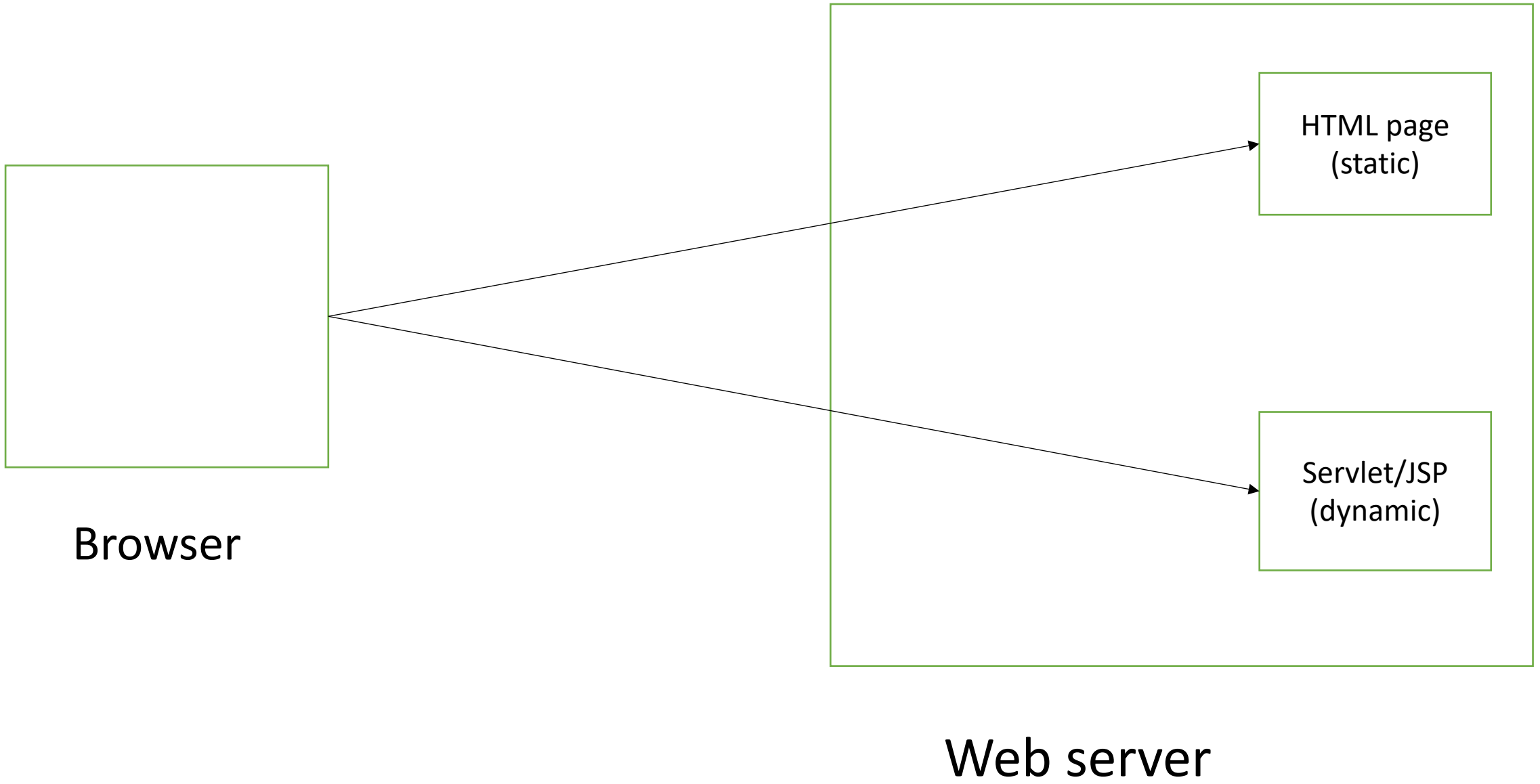
In Spring, creation of objects and injecting their dependencies is performed by the IoC Container

This container is loaded by creating an ApplicationContext object

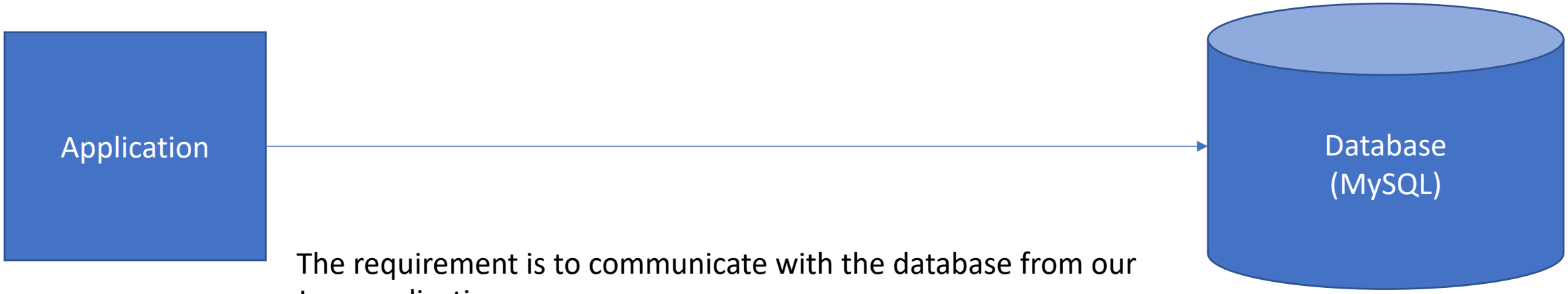


Examples on server side technologies

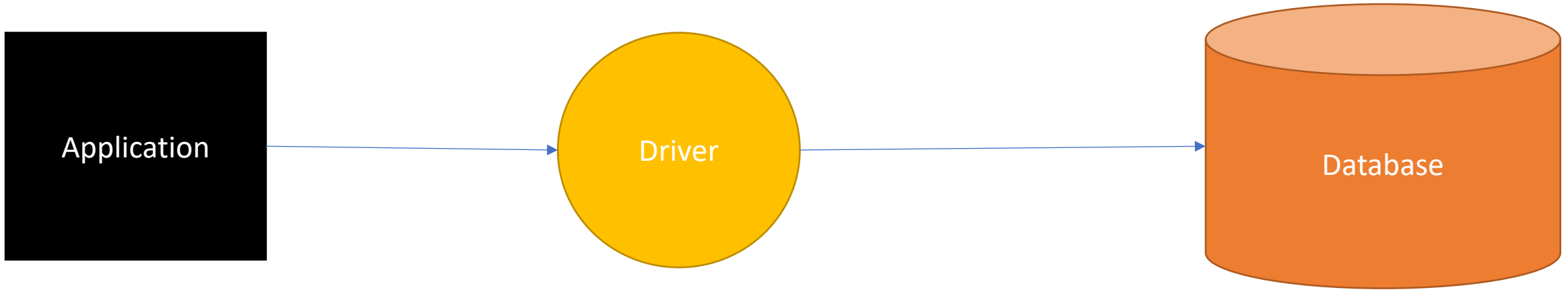
- servlet/jsp
- Asp
- Php
- Django/flask
- Node.js

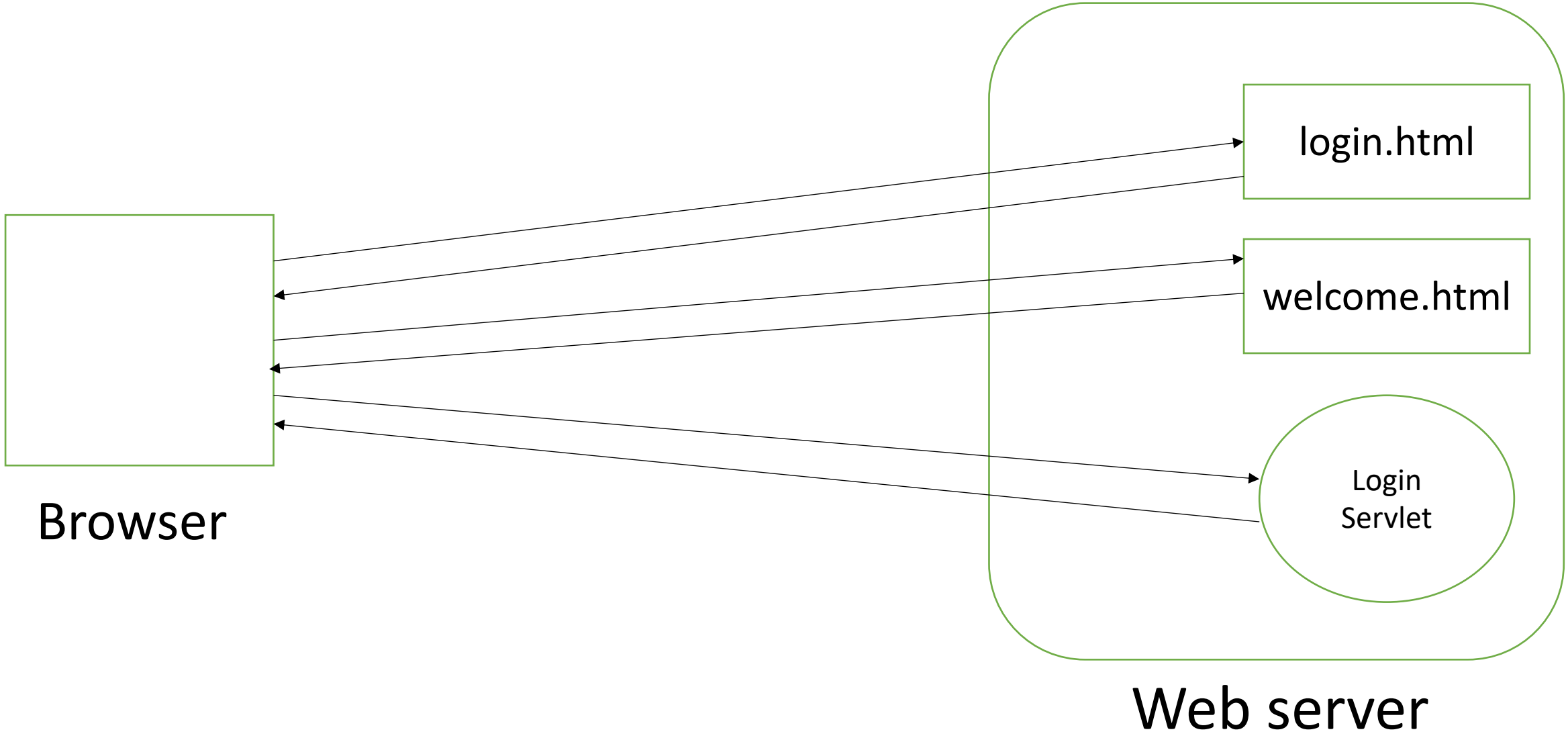

HTML page
(static)
Servlet/JSP
(dynamic)
Browser
Web server

client
stream
server

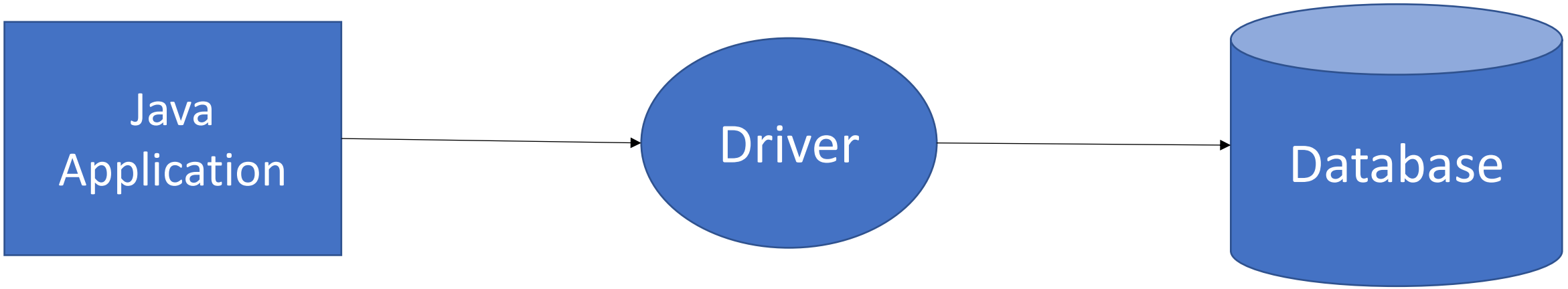


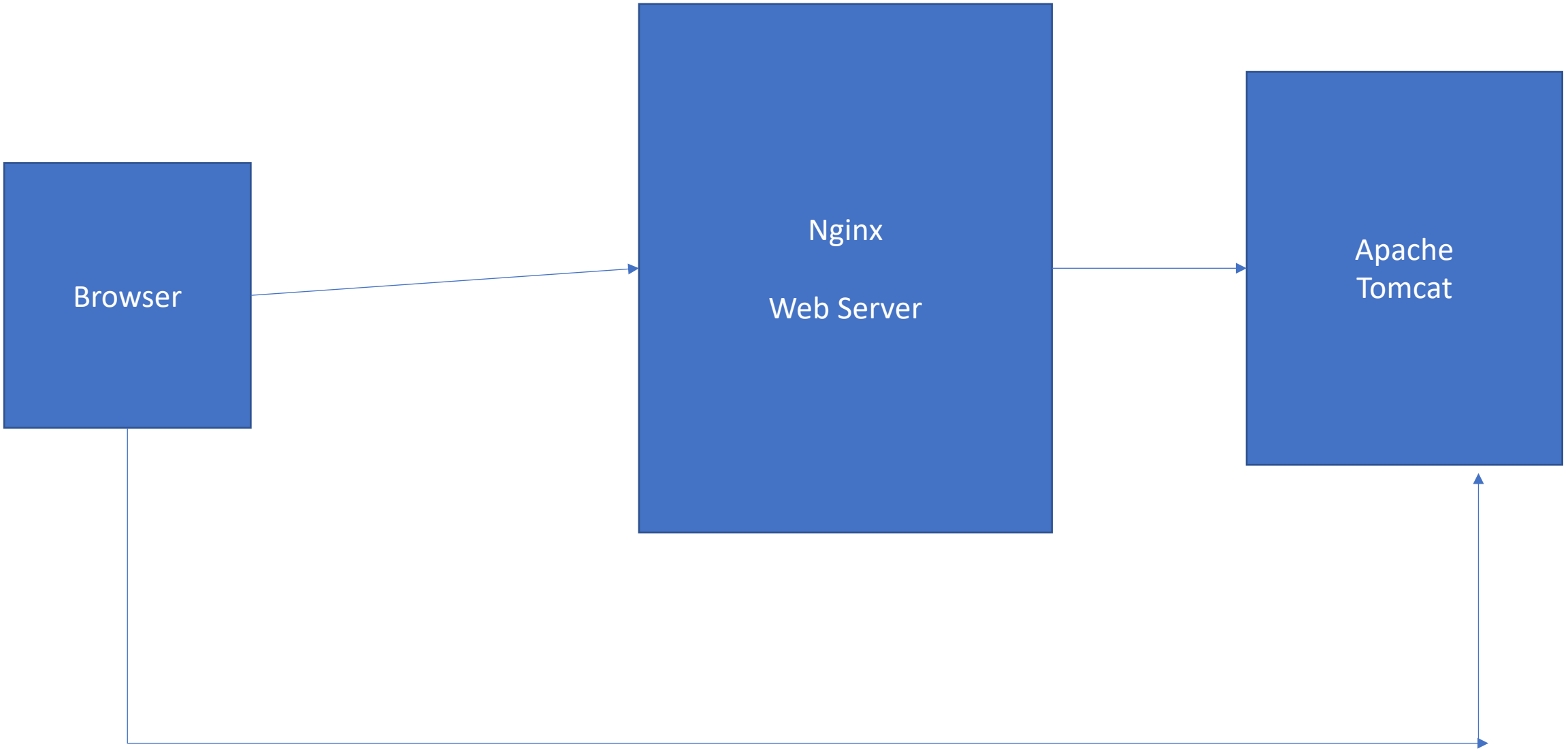
The requirement is to communicate with the database from our Java application

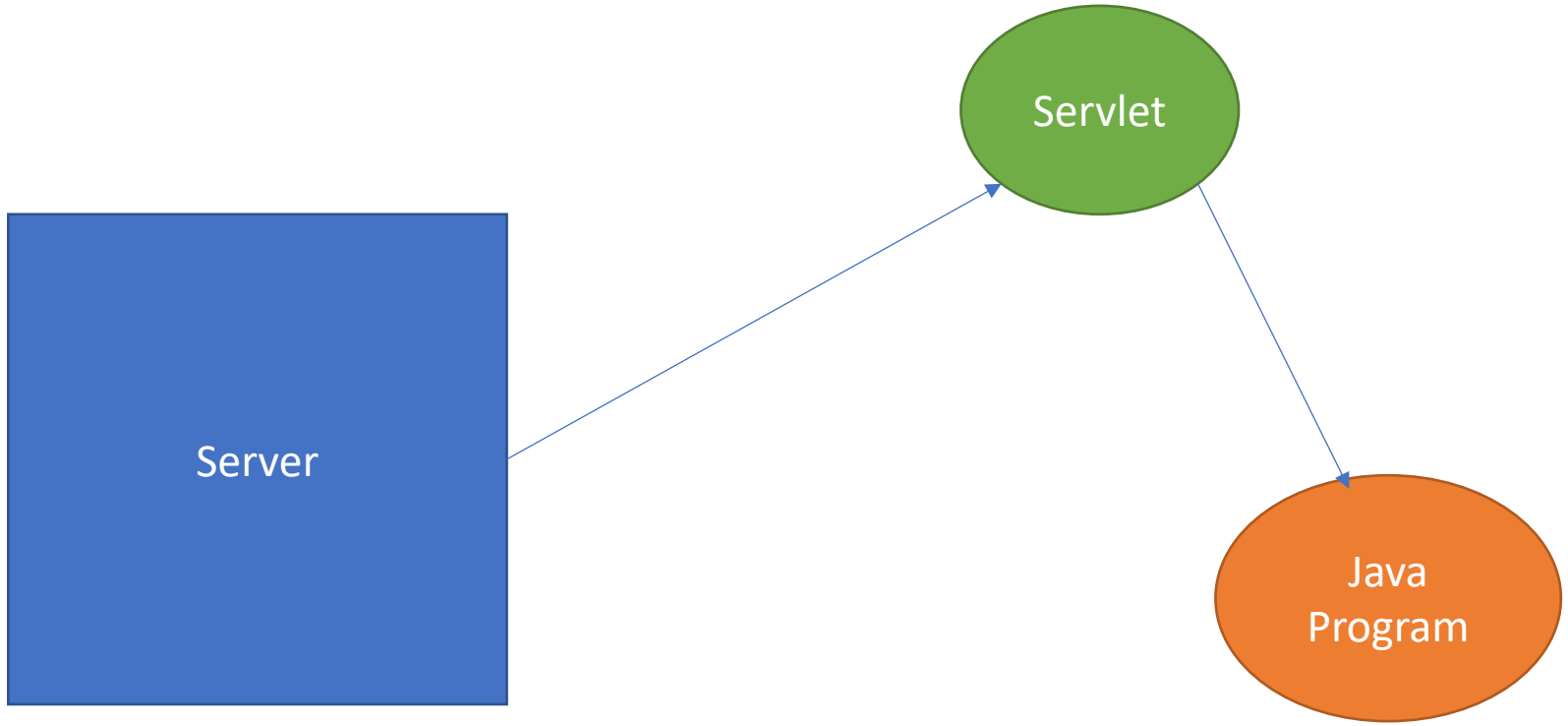



login.html
welcome.html
Login
Servlet
Browser
Web server

JDBC




Browser
Nginx
Web Server
Apache
Tomcat


Servlet
Server
Java
Program