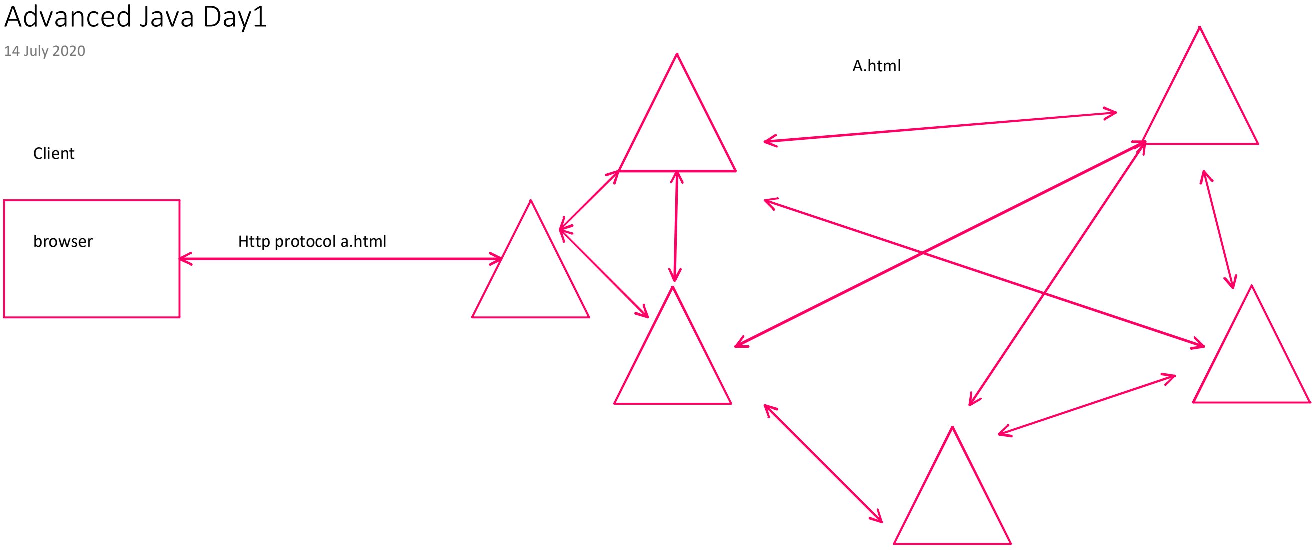
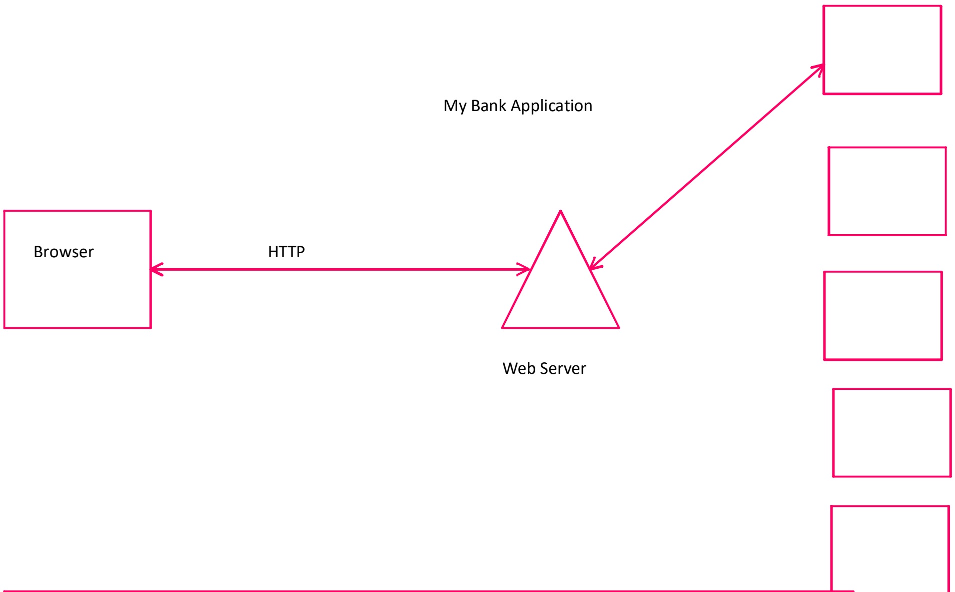
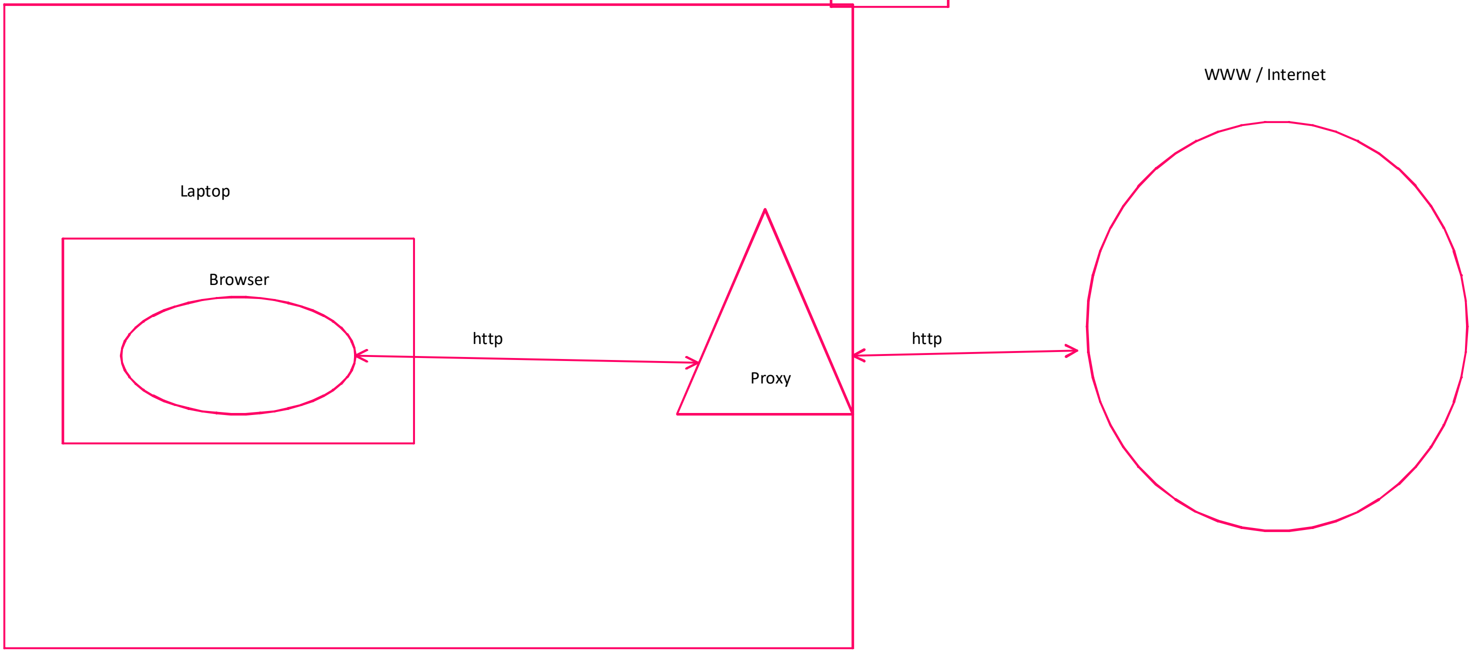
Advanced Java Day1

14 July 2020

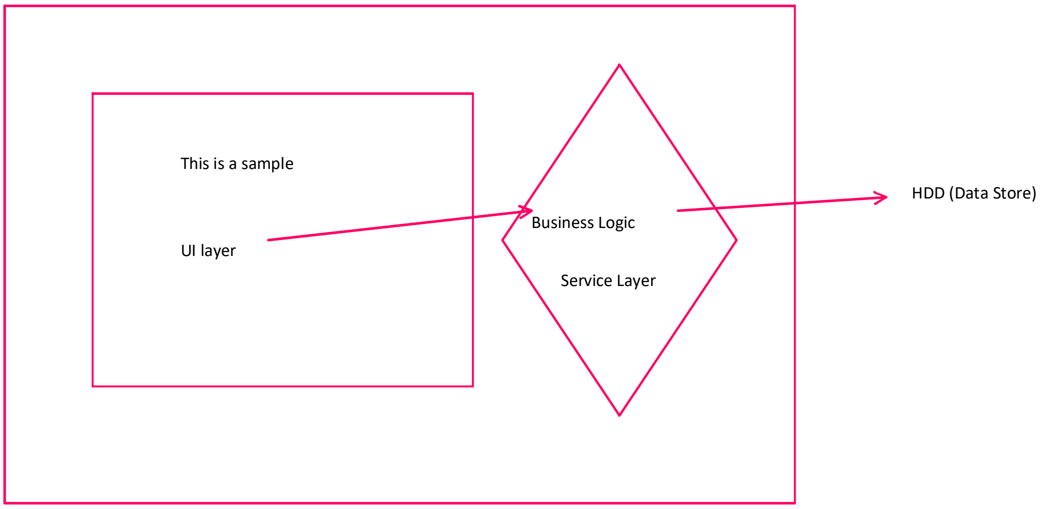


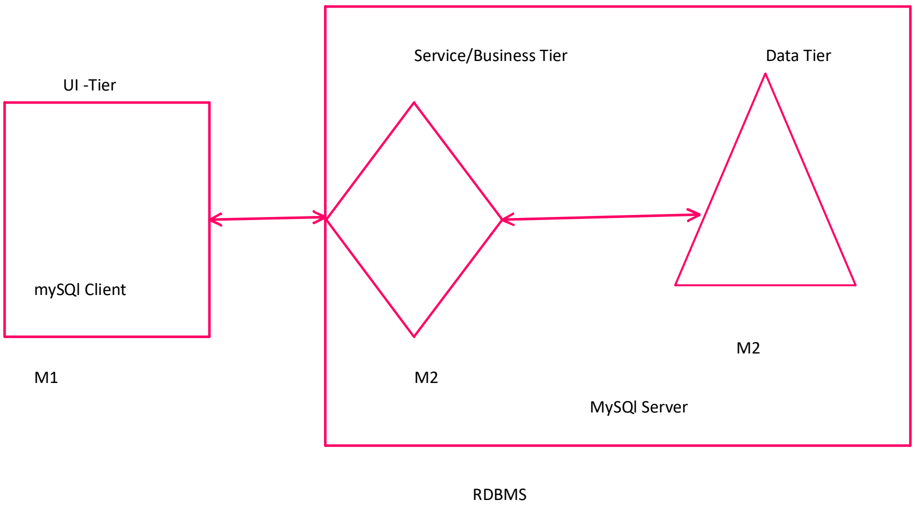
WEB of Interconnected Machines

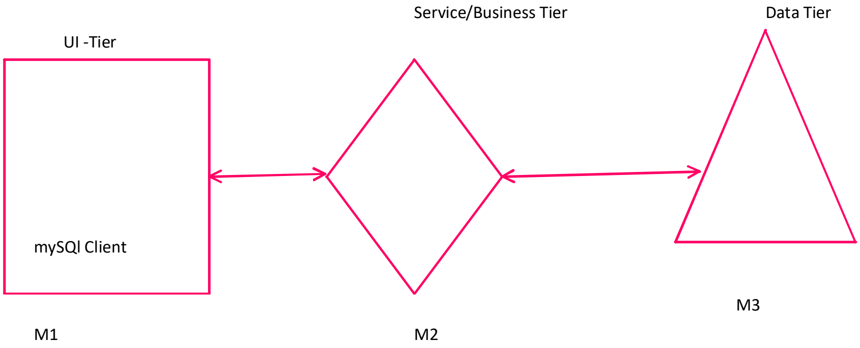


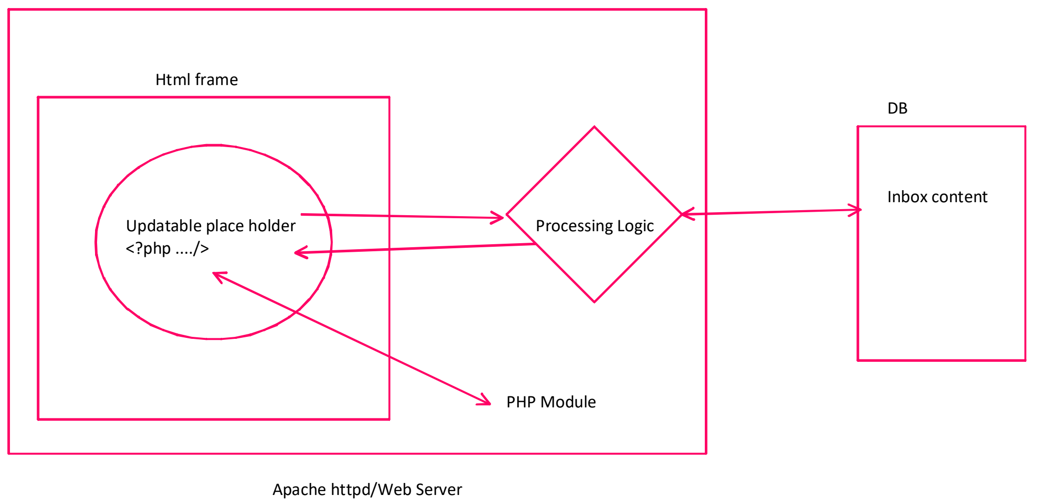


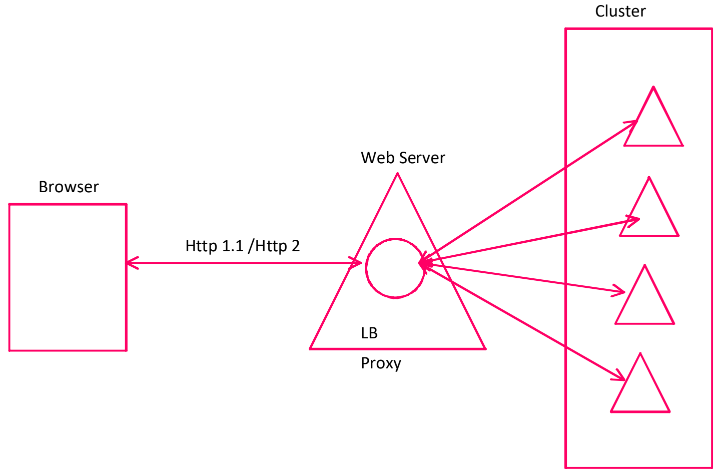
Notepad application


This is a sample
UI layer
Business Logic
Service Layer
HDD (Data Store)


UI -Tier
mySQl Client
M1
Service/Business Tier
M2
Data Tier
M2
MySQl Server
RDBMS


UI -Tier
mySQl Client
M1
Service/Business Tier
M2
Data Tier
M3

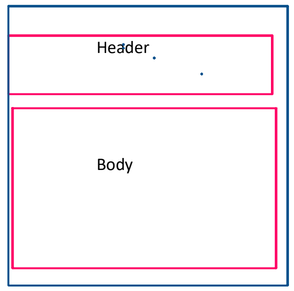




Synchronous
Asynchronous

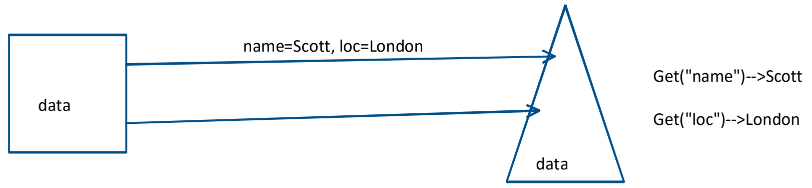
message

Http Message (Request/Response)



cache

GET http://developer.mozilla.org?name=Scott&loc=London



Non Java Domain

1. Apache Web Server/nginx/IIS/iPlanet
2. PHP For Dynamic Content generation/Processing
3. CGI for the above purpose too

In Java Platform
1. Apache Tomcat/Undertow/Jetty
2. Servlets/JSP for Dynamic Content generation/Processing

Servlet --> Code Based approach
JSP --> Page based approach

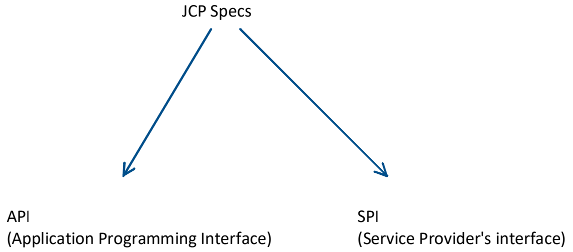
JCP (java Community Process)

JCP Specs

Specifications

JCP (java Community Process)

Specifications


JCP Specs

API
(Application Programming Interface)

SPI
(Service Provider's interface)

Container: Runtime (where your specific type of applications run)-->

Gold fish, cat fish, all other sweet water fishes
Can you keep Shark in the same Box?

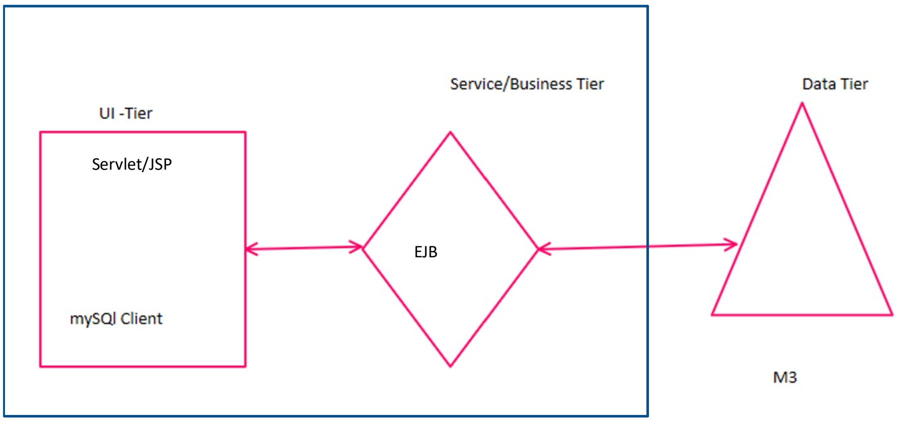
Enclosure for all Types
You need appropriate ENV for each type of Fish

Container --> Enclosure+ENV

In java, You have various types of Application Components

You need JVM for all Types
You need component wise ENV
Runtime: JVM + component wise ENV--> Container

Main Based Applications--> Application Container (JRE-->JVM+java runtime)
Web Components -> Web Container (JRE+Servlet+JSP Runtime)
Applet--> Applet Container(Browser+JRE)
EJB -> EJB Container (JRE+EJB Runtime)


UI -Tier

Servlet/JSP

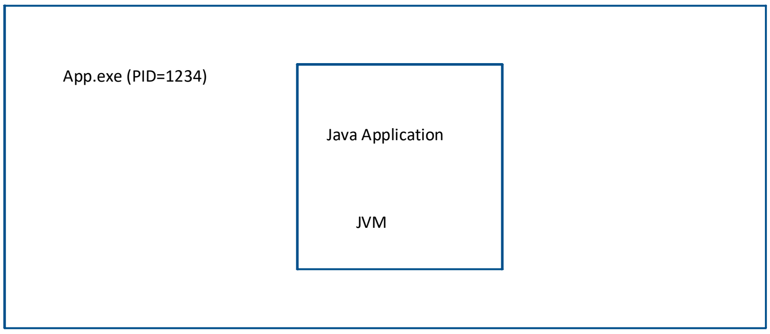
mySQl Client

Service/Business Tier

EJB

Data Tier

M3

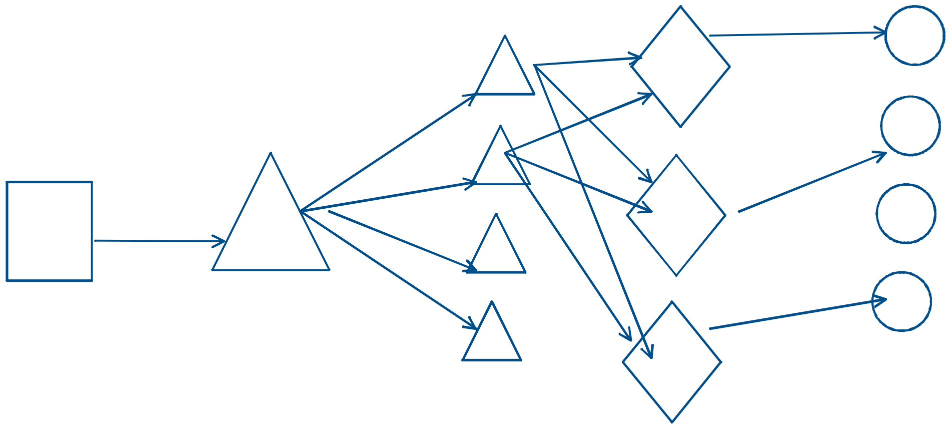

App.exe (PID=1234)

Java Application

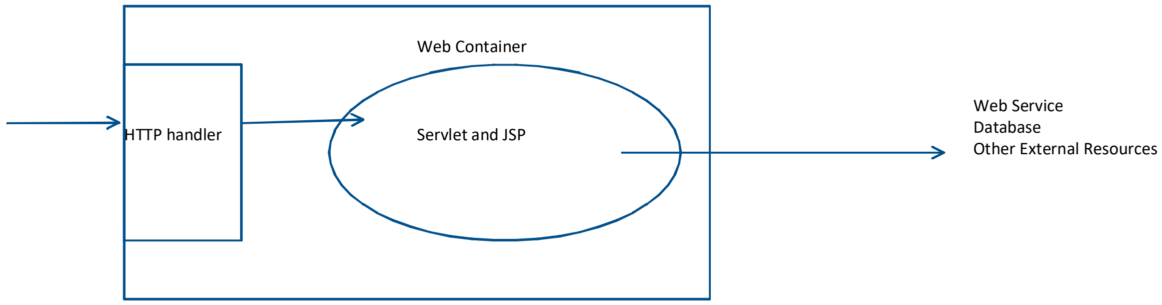
JVM

Java EE Framework (reusable software design, customisable)
Used to create Enterprise applications

It has support for UI Tier, Business Tier and Data Tier



Apache Tomcat (Web Server, with embedded Web Container) /Jetty/Undertow etc



Can Serve Web Applications created using Servlet and JSP
Part implementation of Java EE Specs (Web Profile)

Web Applications in Java are deployed as .war file e.g. MyApp.war

MyApp (Context Root)

↓

WEB-INF
- classes
- lib
- Web.xml

Create the WAR Structure
- Code the components and place them in respective locations
- Servlets are kept in /WEB-INF/classes
- JSP/HTML/IMAGE etc are kept under context root or in sub folders
- Create the .war file using java 'jar' command
- Copy the .war file to deploy location of the Web Server
- Start the Web Server
- Use the appropriate URL to access the application
- http://server:port/ContextRoot/resource
- E.g. http://localhost:8080/MyApp/demo.html

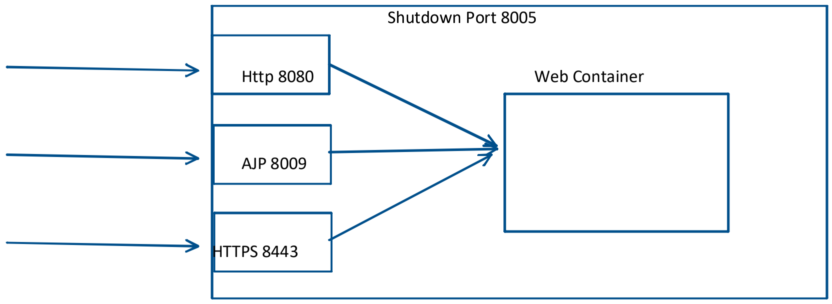
Prerequisites:
1. Make sure you have installed Java and set JAVA_HOME and Path
2. Make sure you extracted Apache Tomcat in a convenient Location
3. And it starts....

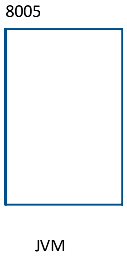
How to create the .war
1. Move inside MyApp Folder
2. Jar -cvf MyApp.war .

Task -- Make a 6 seater oval Dinning Table

1. Automated Machine
2. Manual Labourer
3. .....

Apache Tomcat Web Server Config Part


Shutdown Port 8005
Http 8080
AJP 8009
HTTPS 8443
Web Container


8005
JVM