



IMT Mines Alès
École Mines-Télécom

WEB DEVELOPMENT

JAVA JEE

HTML5

CSS

JAVASCRIPT

JQUERY

JSON

jQuery



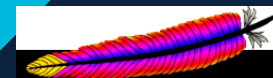
NGINX



HTML



CSS



Apache

HTTP SERVER PROJECT

WHY

< CANDIDAT

RECHERCHER UNE OFFRE

DÉVELOPPEUR WEB FULL-STACK

2 947 Offres correspondent à vos critères

DÉVELOPPEUR FULL STACK JAVA F/H

Descriptif du poste
Nous recherchons pour le compte de notre client un développeur full stack (F/H) en CDI.

Profil recherché
De formation >Bac+5, Domaine de compétences demandées : Java, Java EE, SQL, GIT, CSS3/ HTML5, JPA (hibernate), Spring MVC / Spring boot

Développeur JAVA F/H

Descriptif du poste
En tant que développeur Java J2EE, vous intégrerez une équipe projet dans un environnement agile en participant à la conception et au développement des applications de nos clients. Vous participerez aux

Profil recherché
De formation supérieure en informatique vous disposez à minima d'une première expérience significative dans le développement d'application Java J2EE.
Environnement technique : Java, SQL, hibernate, spring, Struts, JQuery, Angular2+, Apache, etc.

Développeur Full Stack C# .NET F/H

Descriptif du poste
Missions :
-Conduire les ateliers et rédiger les spécifications
-Développer, concevoir et analyser les fonctionnalités spécifiques
-Intégrer les Web-Design sur-mesure

Profil recherché
-Vous avez une bonne maîtrise de l'environnement technique .NET (C#, ASP.NET, Web Services), SQL Server et des Frameworks Javascript/CSS (jQuery, Bootstrap)

Développeur(se) Back-End Python Junior F/H

Descriptif du poste
Participer au développement, à l'intégration et aux tests des outils internes et vendus en SaaS ;

Profil recherché
Connaissance de Python et d'au moins un framework web (Django, Flask).
Environnement technique : HTML, CSS, JavaScript

FULL-STACK WEB
as a stack see below

Web Servers
Apache, Tomcat, Django, Struts, Flask, Spring

HTML / HTML 5
tags, form, svg, API Rest

CSS / CSS 3
Div, SASS , Bootstrap

Java / Java EE
or C# , Python, NodeJS

Hibernate / JPA
with SQL, Databases, NoSQL

JavaScript
Ajax, Jquery, Angular

Tools and more
Git, Web Services, logs Dev Web Tools, MVC

TRAINER BACKGROUND



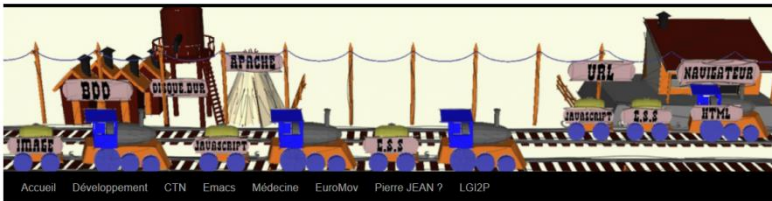
Pierre Jean

Software engineer CERIS - IMT Mines Alès
R&D computer science, arduino, linux, android,
wings 3D, 3D print, java

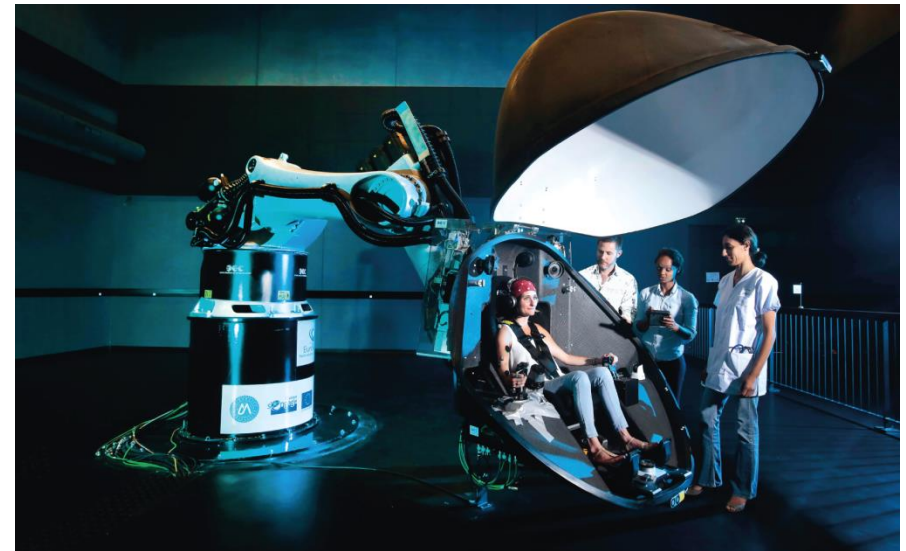
pierre.jean@mines-ales.fr

Pierre Jean – Ingénieur de Recherche

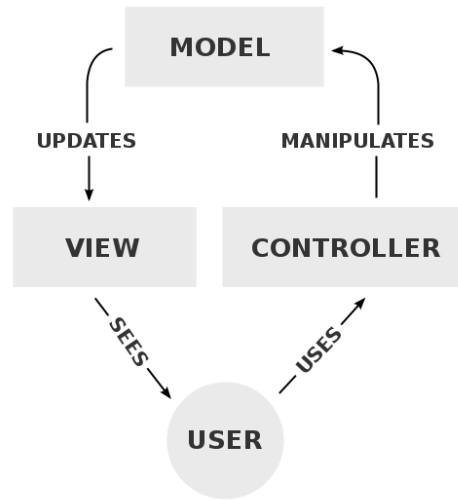
LGI2P-Ecole des Mines d'Alès



<http://pierrejean.wp.imt.fr>



GOALS



```
Debug Servers
  Daemon Thread [http-bio-8080-exec-9] (Suspended (breakpoint at line 21 in lestodos.jsp))
    owns: SocketWrapper<E> (id=402)
      lestodos.jsp line: 21
      lestodos.jsp(HttpJspBase).service(HttpServletRequest, HttpServletResponse) line: 70
      lestodos.jsp(HttpServlet).service(ServletRequest, ServletResponse) line: 728

lestodos.jsp Page d'erreur Application.java Controleur.java Application à-faire
17 <ul>
18 <li>
19     for(ToDo todo : Application.getInstance().getLesTodo() ){
20
21     String checkedOrNot = "checked";
22     if( todo.isActive() == false ) {
23     checkedOrNot = "";
24
```

Pierre Jean – Ingénieur de Recherche
LGIaP-Ecole des Mines d'Alès

Accueil Développement CTN Emacs Médecine EuroMov Pierre JEAN ? LGI2P


ACS Développement Web
Twitter: pierrejean_ema

```

</div>
<!--#branding-->
<div id="access" role="navigation"></div>
<!--#access-->
<!--#masthead-->
</div>
<!--#header-->
</div>
<!--#main-->
</div>
```

FINAL EXAMINATION

- ▶ Last day is examination
- ▶ Individual project
- ▶ Very limited time
- ▶ On your computer as usual
- ▶ eXtreme Programming concepts
- ▶ Send on campus web site
- ▶ Same as usual practical work



IMT Mines Alès
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(2-M1-EMACS)Technologies Web

Site Institutionnel Ressources communes Ingénieur Généraliste Ingénieur par apprentissage

Accueil ▶ Mes cours ▶ (2-M1-EMACS)Technologies Web ▶ Examen final CRUD année 2017 - 2018

Navigation

- Accueil
 - Tableau de bord
 - Pages du site
- Mes cours
 - (2-M1-EMACS)Technologies Web
 - Participants
 - Badges
 - Compétences
 - Notes
 - Généralités
 - Examen final
 - CRUD Rendu
- dppa_fla_
- INF10
- MCTN

Rendu

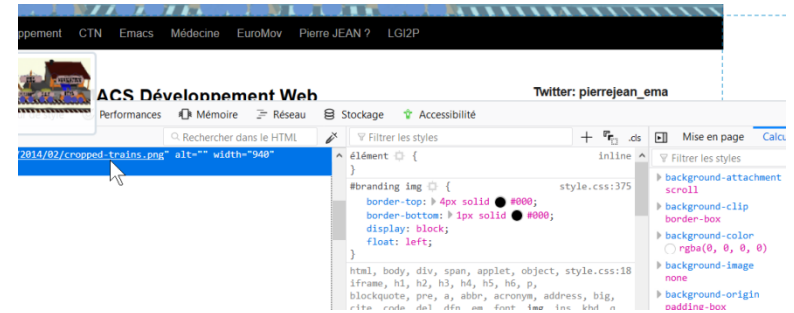
Le CRUD est l'acronyme de Create/Retreave données dans un navigateur moderne (inclu Ce logiciel doit implémenter les fonctions du (Retreave), de mettre à jours les informations confirmation. Cette liste d'éléments doit pouv Une attention toute particulière sera portée s uniquement le CRUD).
A 12h15, merci d'envoyer le zip des dossiers (/mod/assign/view.php?id=11750) . Le nom d email).

Statut de remise

Statut des travaux remis	Aucune
Statut de l'évaluation	Non év
Date de remise	mardi 1
Temps restant	
Dernière modification	-
Commentaires	▶ Corr

TOOLS: FREE AND OPENSOURCE

- ▶ Modern browser with Dev Tools
- ▶ Database: Sqlite, MySql
- ▶ Web server : Apache WS, Tomcat, Django, NodeJs
- ▶ Language: Asp.Net/C#, Java J2EE, Python, Javascript
- ▶ Editor: Eclipse J2EE, IntelliJ Ultimate, Vscode :-)

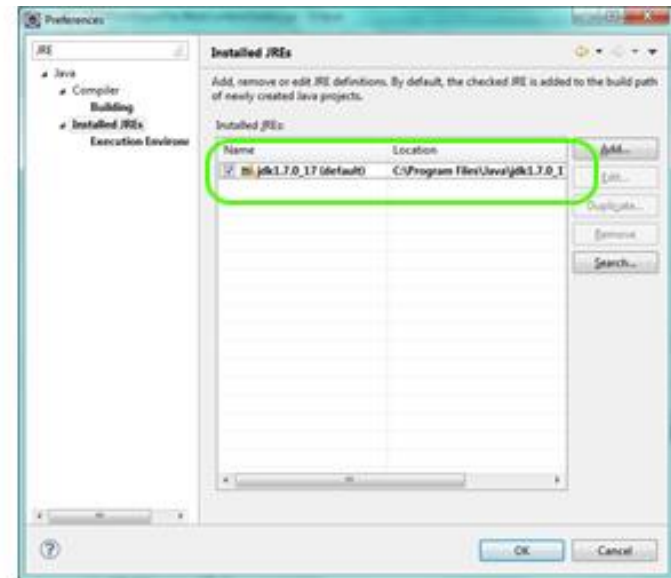
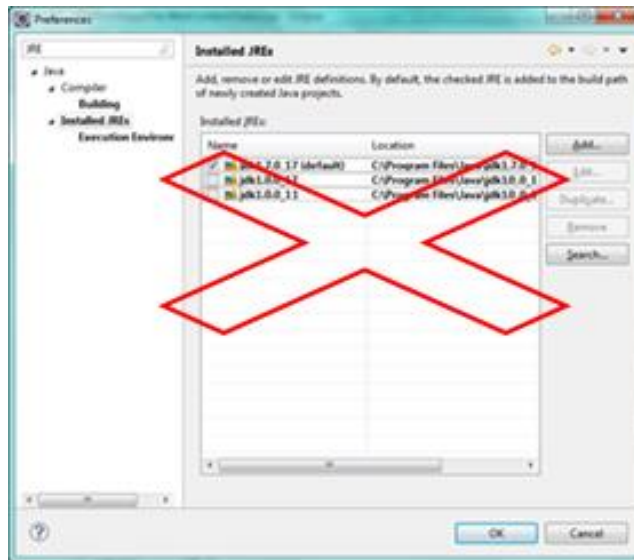


We will use Eclipse J2EE with Java Servlet & JSP



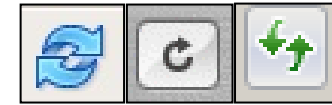
CRITICAL INFORMATION

- ▶ Start Apache Tomcat Web Server with a Java Oracle JDK not a JRE even from Oracle
- ▶ My advise: only one JDK into Eclipse

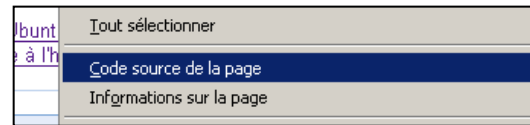


ADVISES

- ▶ All the time, refresh the browser (F5 key)



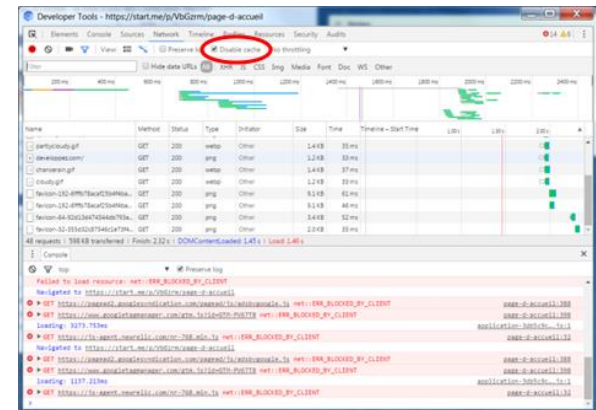
- ▶ Study HTML source code



- ▶ Learn to use Dev tools into a modern browser

- ▶ Disable browser cache

- ▶ Backup yours files



FIRST STEP BASIC CONCEPTS



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BASIC CONCEPTS

- ▶ TCPI/IP and DNS
- ▶ Lookback and port
- ▶ Asynchronous communication
- ▶ URL
- ▶ HTML
- ▶ Basic HTML
- ▶ Samples of HTML Tag
- ▶ URL and Web Server
- ▶ Virtualhost and alias

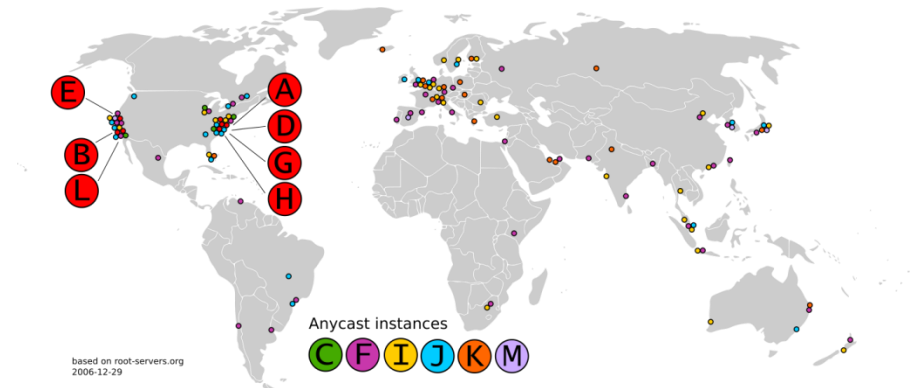
TCP/IP AND DNS

Extract TCP packet sniffer tcpdump from ssh link between 2 computers

```
12:10:08 IP 193.51.154.140.10600 > 159.31.200.21.ssh: Flags [.]
```

Try command this command:

```
nslookup euromov.fr
```



euromov.fr

```
@ 10800 IN A 193.51.158.210
pop 10800 IN CNAME access.mail.gandi.net.
smtp 10800 IN CNAME relay.mail.gandi.net.
webmail 10800 IN CNAME webmail.gandi.net.
www 10800 IN A 193.51.158.210
```

IP web server www.euromov.fr

LOOKBACK AND PORT

ssh connection from one ip:port to 159.31.200.21:22 with Tcpview (Sysinternal)

Process	PID	Protocol	Local Address	Local Port	Remote Address	Remote Port	Sent Packets	Rcvd Packets
putty.exe	4724	TCP	desktop-bpkalf4.univ-montp3.fr	4392	159.31.200.21	ssh	10	11
...	7076	TCP	DESKTOP-BPKALF4	4424	localhost	22	0	0

Short common default port list on a computer

Port	Service name
20, 21	File Transfer Protocol (FTP)
22	Secure Shell (SSH)
23	Telnet
25	Simple Mail Transfer Protocol (SMTP)
50, 51	IPSec
53	Domain Name Server (DNS)
80	Web Server http
443	Web Server https
3306	Mysql database Server
8080	Tomcat Web Server

Internal network IP
127.0.0.1 or
localhost



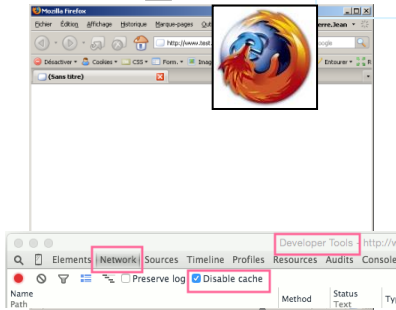
First network card IP 192.168.1.20

Second network card IP 146.19.2.23

ASYNCHRONOUS COMMUNICATION

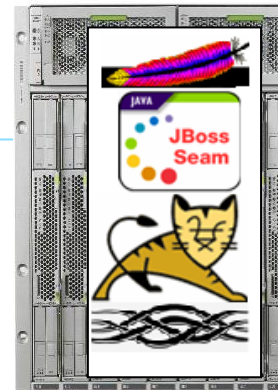
1

```
GET /index.html HTTP/1.1
Host: www.example.com
Accept: text/plain
Accept-Charset: iso-8859-5
Accept-Encoding: compress, gzip
Accept-Language: fr
Date: Tue, 14 Jan 2023 08:12:31 GMT
User-Agent: Mozilla/5.0 (Linux; X11; UTF-8)
```



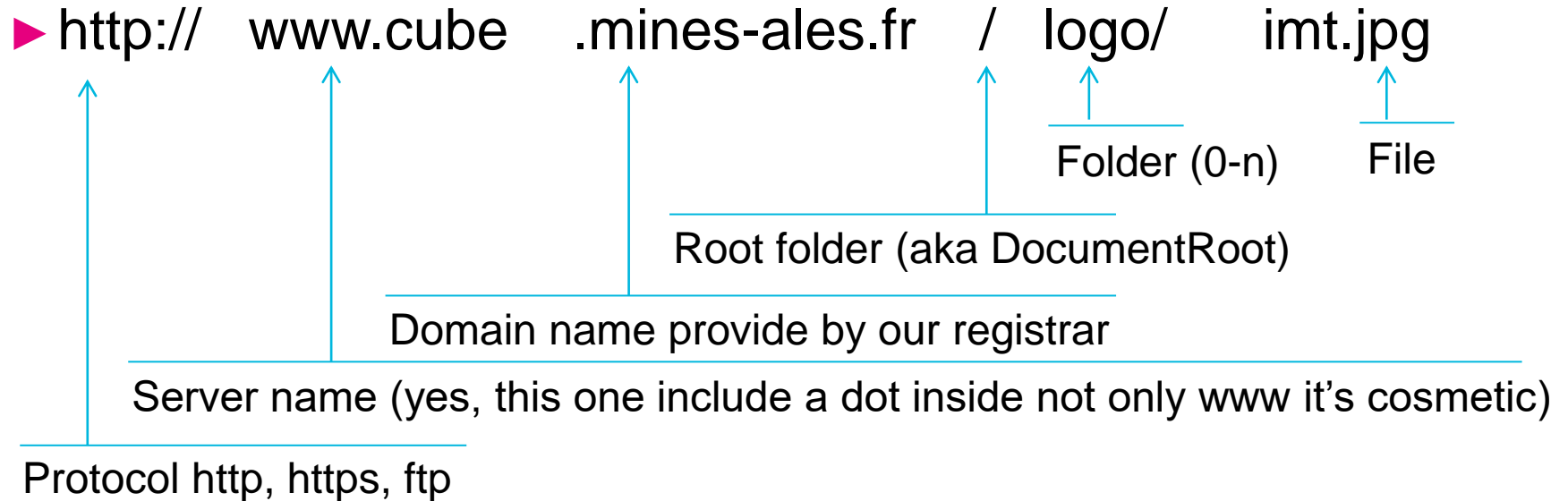
Disable
cache !

```
HTTP/1.1 200 OK
Date: Mon, 14 January 2023 08:13:34 GMT
Server: Apache/1.3.3.7 (Unix) (Red-Hat/Linux)
Last-Modified: Wed, 09 Jan 2008 13:11:55 GMT
Accept-Ranges: bytes
Content-Length: 438
Connection: close
Content-Type: text/html; charset=UTF-8
```



2

UNIFIED RESSOURCE LOCATOR



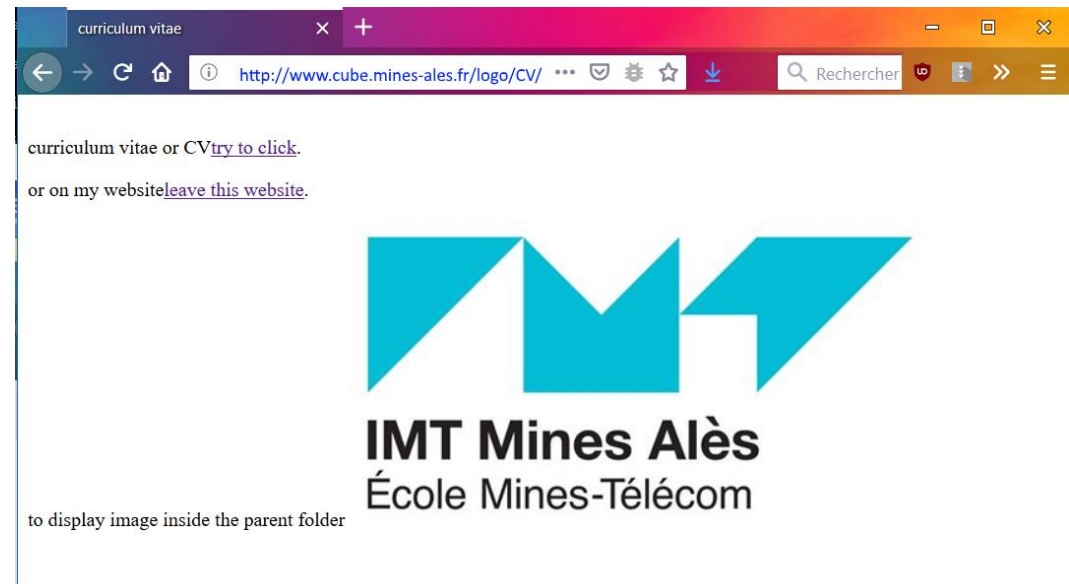
► Try also <http://www.cube.mines-ales.fr/logo/>

HYPER TEXT MARKUP LANGUAGE

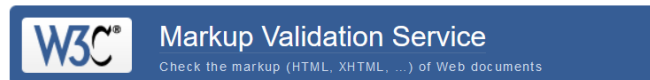
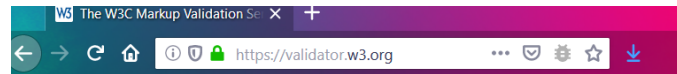
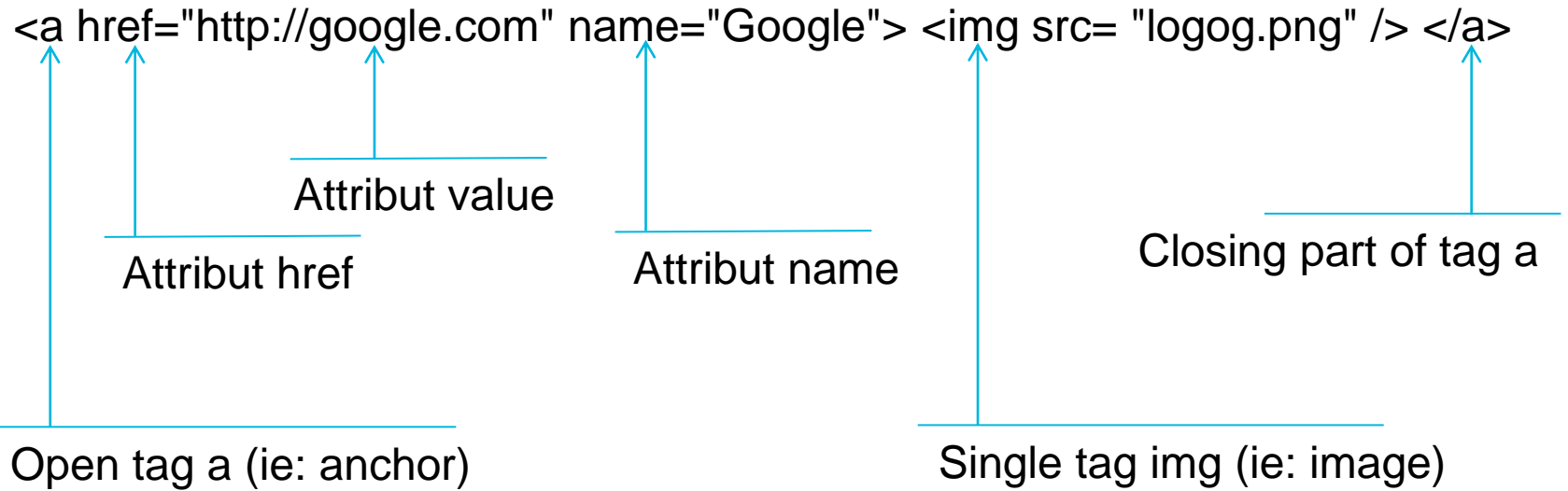
```
1 <!DOCTYPE html PUBLIC "-//IETF//DTD HTML 2.0//EN">
2 <html>
3 <head>
4 <title>
5   curriculum vitae
6 </title>
7 </head>
8 <body>
9 <p>
10 curriculum vitae or CV<a href="cv.html">try to click</a>.
11 </p>
12
13
14
15 <p>
16 or on my website<a href="http://pierrejean.wp.imt.fr">leave this website</a>.
17 </p>
18
19 <p>
20 to display image inside the parent folder
21
22
23 
24 </p>
25 </body>
26 </html>
27
```

HTML Source

Webkit rendering engine



BASIC HTML



Validate by URI Validate by File Upload Validate by Direct Input

Validate by URI

Validate a document online:

Address:

▶ More Options

SAMPLES OF HTML TAG

`<title></title>` – Web pages must have a text into the title bar of your browser

`<a>` – Since the web exist this is hypertext

`` – Web pages are supposed to show images together with text.

`<p></p>` – Paragraph text

`<h1> ... <h6></hX>` – Header size as historical printer and publisher

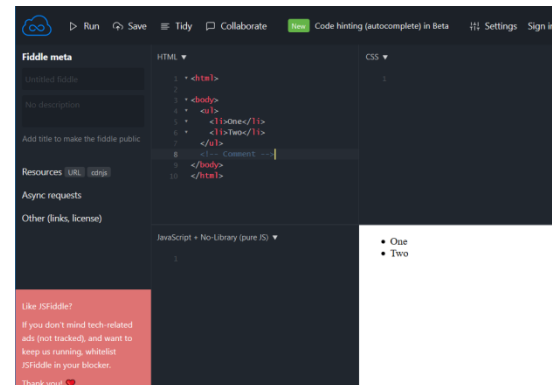
`` – A tag to start an unordered list with bullet points

`` – an item that belongs to a list

`<body></body>` a section of html that contains content

`<!-- -->` a section of comment, not displayed in the browser

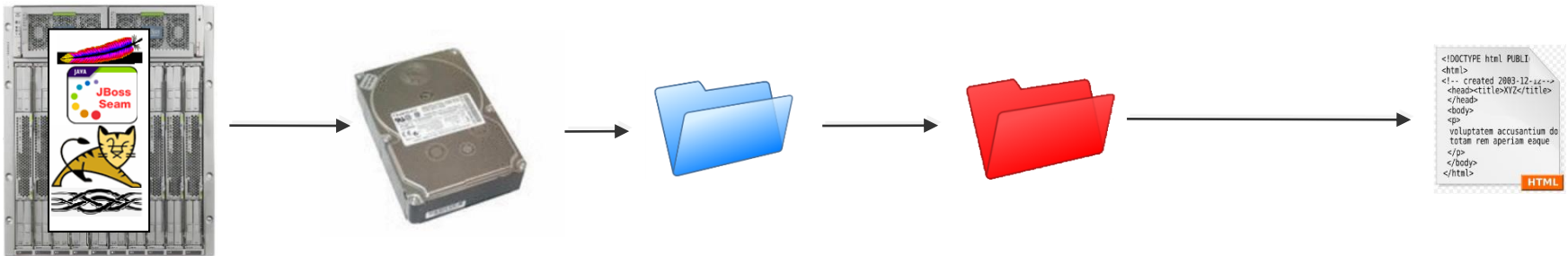
<https://jsfiddle.net/>



URL AND WEB SERVER

URL <http://www.test.fr/rep1/srep12/page4.html>

Web Server Sites [wwwsite1/](#) [rep1/srep12/](#) [page4.html](#)



Computer [/var/www/](#) [wwwsite1/](#) [rep1/srep12/](#) [page4.html](#)

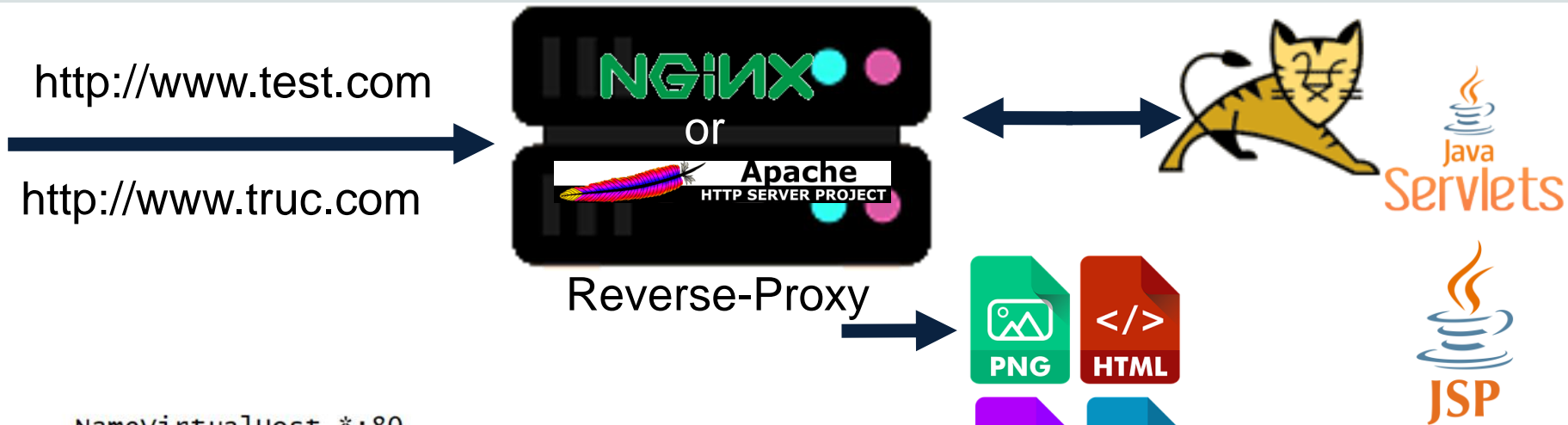
URI <file:///d:/web/wwwsite1/rep1/srep12/page4.html>

Relatif URL instead of absolute URL

``

``

VIRTUALHOST AND ALIAS



```
NameVirtualHost *:80
<virtualHost *:80>
  ServerName www.test.com
  DocumentRoot /var/www/test.com/
</virtualHost>
<virtualHost *:80>
  ServerName truc.com
  DocumentRoot /var/www/truc.com/
  ServerAlias www.truc.com
  Alias "/logos/" "/var/local/ftp/logos/"
  ProxyRequests On
  ProxyPass /application ajp://192.168.2.1:8000/app-v1
  ProxyPassReverse /application ajp://192.168.2.1:8000/app-v1
</virtualHost>
```

SECOND STEP ADVANCED CONCEPTS



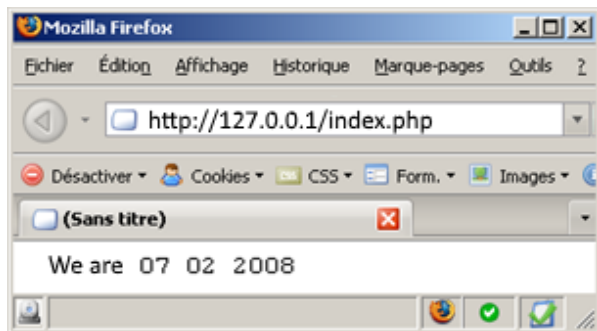
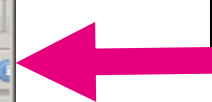
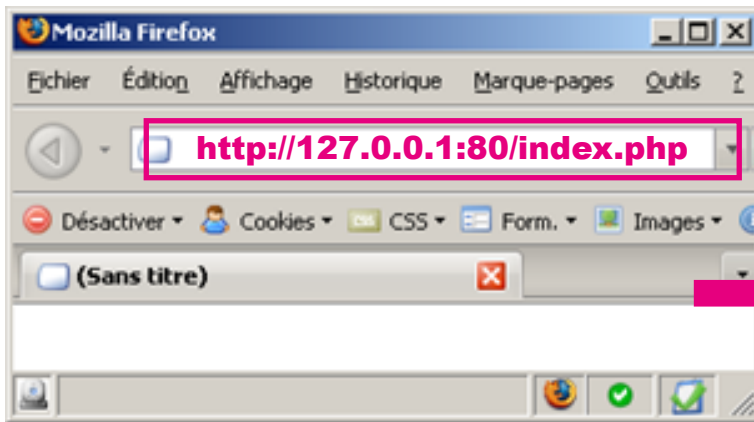
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ADVANCED CONCEPTS

- ▶ Dynamic website
- ▶ Html Generator by JSP, PHP, NodeJs, Python, Servlet
- ▶ How to use JSP and HttpServlet
- ▶ A Form
- ▶ The most important slide
- ▶ How to debug
 - ▶ Most everything inside Eclipse Ide
 - ▶ Debug with browser
 - ▶ Hello world form in PHP
 - ▶ Hello world form in Java


DYNAMIC WEBSITE

Client story: a website shows the date from 0 to 2030
First solution: 741 457 HTML pages



1 File `c:/wamp/www/index.php`

```
<html>
<head></head>
<body>
<p> We are
  <?php
    echo( date ("d m Y" ) );
  ?>
</p>
</body>
</html>
```

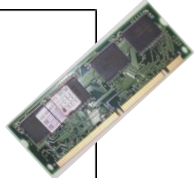


2 Apache Web server + php module



3 Html generation in memory

```
<html>
<head>
</head>
<body>
<p>We are
  07 02 2008
</p>
</body>
</html>
```

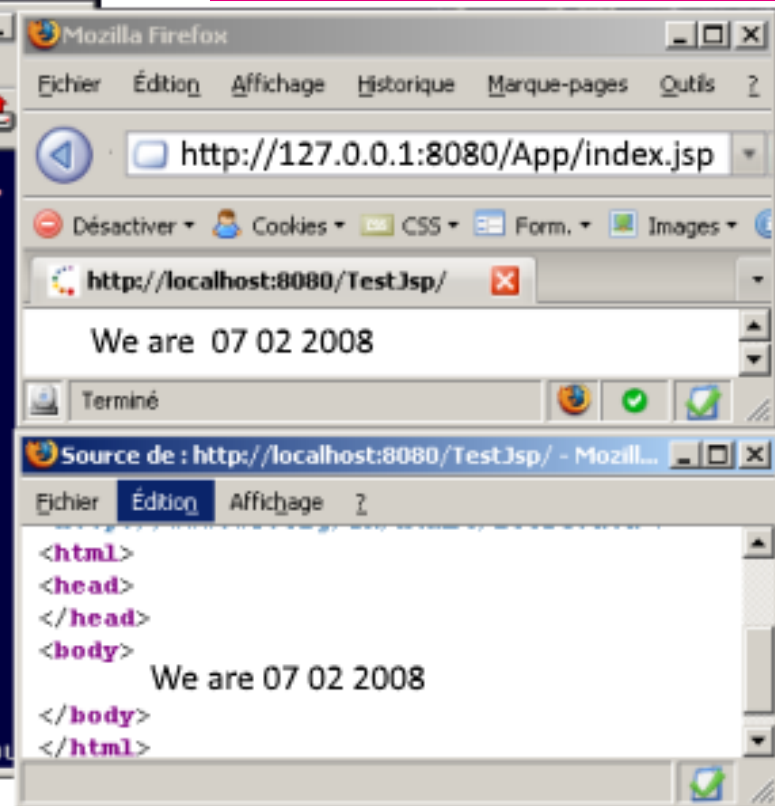


HTML GENERATOR BY JSP

Initial JSP code to generate HTML

```
index.jsp + (E:\w...WebContent) - GVIM1
Fichier Edition Outils Syntaxe Tampons Fenêtre Aide
[Icons]
<%@ page language="java"
contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO-8859-1"%>
<html>
<head>
</head>
<body>
We are
<%= java.text.DateFormat.getDateInstance
( java.text.DateFormat.MEDIUM )
.format( new java.util.Date() )%>
</body>
</html>
~
~
~
~
13,7 Tou
```

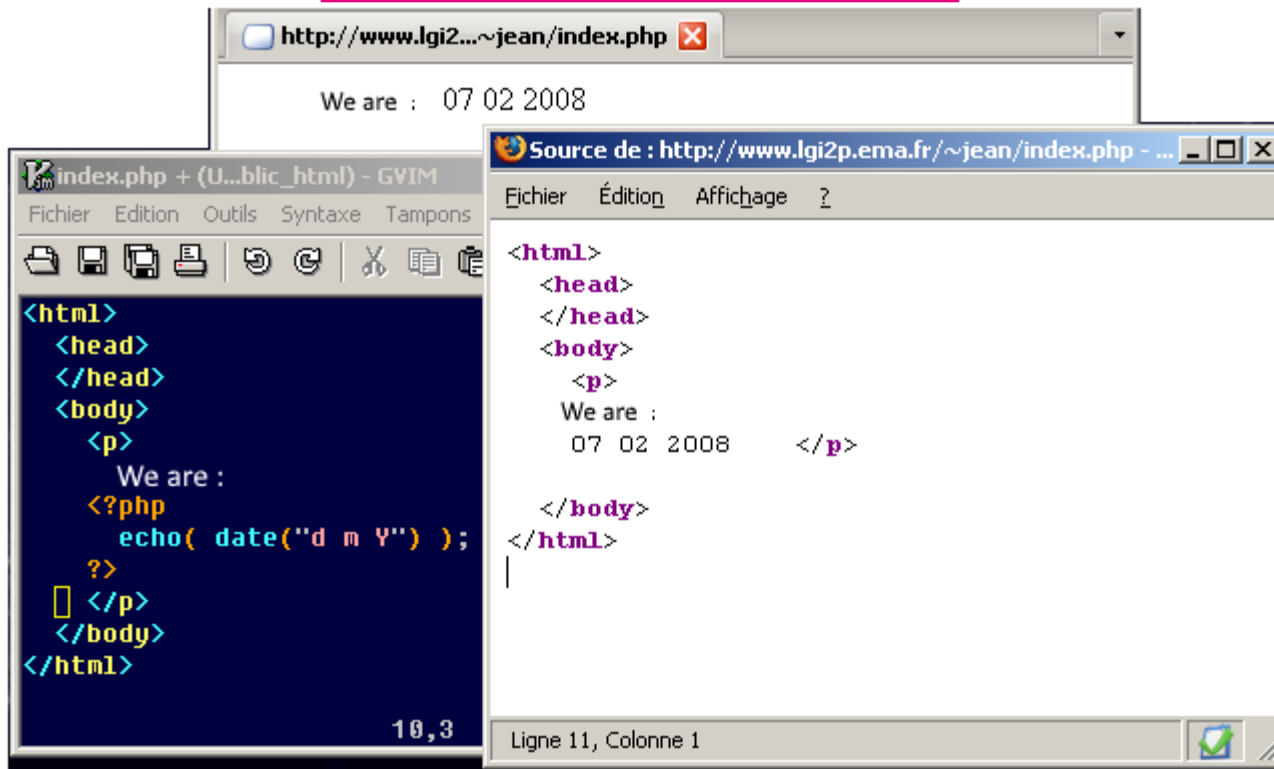
HTML result into the browser



Show HTML Source code

HTML GENERATOR BY PHP

HTML result into the browser

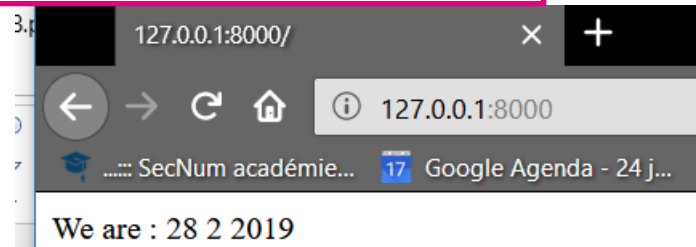


Initial PHP code to generate HTML

Show HTML Source code

HTML GENERATOR BY NODEJS

HTML result into the browser



```
const http = require('http');
const port = 8000;

const requestHandler = (request, response) => {
  var now = new Date();
  var html = `
<html>
<head>
</head>
<body>
We are :
  ${ now.getDate() } ${ now.getMonth()+1 } ${ now.getFullYear() }
</body>
</html>`;

  response.end( html );
}

const server = http.createServer(requestHandler);
server.listen(port, (err) => {
  if (err) {
    return console.log(err);
  }
  console.log(`server is listening on ${port}`);
})
```

Initial JS code to generate HTML

```
1
2 <html>
3 <head>
4 </head>
5 <body>
6 We are :
7   28 2 2019
8 </body>
9 </html>
```

Show HTML Source code

HTML GENERATOR BY PYTHON DJANGO

HTML result into the browser

```
templates/base.html  saved
1  {% load staticfiles %}
2  | | | <!DOCTYPE html>
3
4  <html>
5  <head>
6  </head>
7  <body>
8  |   <p>
9  |   | {% now "d m Y" %}
10  |   </p>
11  </body>
12 </html>
```

http://127.0.0.1:8000/index.co

28 02 2019

Initial Python code to generate HTML

view-source:https://usablemuted

view-source

```
1
2   <!DOCTYPE html>
3
4  <html>
5  <head>
6  </head>
7  <body>
8  |   <p>
9  |   | 28 02 2019
10  |   </p>
11  </body>
12 </html>
```

Show HTML Source code

HTML GENERATOR BY SERVLET OR JSP

JSP VERSION

```
index.jsp Now.java
1 <%@ page language="java" contentType="text/html; charset=UTF-8"
2   pageEncoding="UTF-8"%>
3 <%@ page import="java.text.DateFormat" %> Import
4 <%@ page import="java.util.Date" %>
5 <!DOCTYPE html>
6 <html>
7 <head>
8 <meta charset="UTF-8">
9 <title>My first JSP</title>
10 </head>
11 <body>
12 We are: <%= DateFormat.getDateInstance( DateFormat.SHORT).format( new Date() ) %>
13 </body> Java echo without ; at the end
14 </html>
```

SAME HTML

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="UTF-8">
5 <title>My first JSP</title>
6 </head>
7 <body>
8 We are 16/03/19
9 </body>
10 </html>
11
12
```

SERVLET VERSION

```
index.jsp Now.java
1 package main;
2
3 import java.io.IOException;
4
5 import javax.servlet.ServletException;
6 import javax.servlet.annotation.WebServlet;
7 import javax.servlet.http.HttpServlet;
8 import javax.servlet.http.HttpServletRequest;
9 import javax.servlet.http.HttpServletResponse;
10 import java.text.DateFormat;
11 import java.util.Date; imports
12
13
14 @WebServlet("/Now")
15 public class Now extends HttpServlet {
16     private static final long serialVersionUID = 1L;
17
18     public Now() {
19         super();
20     }
21
22     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
23         response.getWriter().append("<!DOCTYPE html>\r\n" +
24             "<html>\r\n" +
25             "<head>\r\n" +
26             "<meta charset=\"UTF-8\">\r\n" +
27             "<title>My first JSP</title>\r\n" +
28             "</head>");
29         response.getWriter().append("<body>");
30         response.getWriter().append("We are :");
31         response.getWriter().append(DateFormat.getDateInstance( DateFormat.SHORT).format( new Date() ));
32         response.getWriter().append("</html>");
33     }
34 }
35
36
```

Extend HttpServlet

HTML GENERATOR

HOW TO USE JSP AND HTTPSERVLET

JSP is :

- ▶ cool to read as HTML
- ▶ close to PHP/template style
- ▶ easy to import into Css designer tools like Dreamweaver
- ▶ one JSP by user interface
- ▶ some JSP to export Json/XML
- ▶ group into Web-Content folder

HttpServlet

- ▶ cool to read as Java
- ▶ first technology before JSP
- ▶ manage de C of MVC
- ▶ call by # URLs and with *
- ▶ every JSPs are converted into HttpServlet by Tomcat Web Server

```
index.jsp Now.java
1 <%@ page language="java" contentType="text/html; charset=UTF-8"
2   pageEncoding="UTF-8"%>
3 <%@ page import="java.text.DateFormat" %>
4 <%@ page import="java.util.Date" %>
5 <!DOCTYPE html>
6 <html>
7 <head>
8 <meta charset="UTF-8">
9 <title>My first JSP</title>
10 </head>
11 <body>
12 We are: <%= DateFormat.getDateInstance( DateFormat.SHORT).format( new Date() ) %>
13 </body>
14 </html>
```

Import

Java echo without ; at the end

```
index.jsp Now.java
1 package main;
2 import java.io.IOException;
3
4 import java.servlet.ServletException;
5 import java.servlet.annotation.WebServlet;
6 import java.servlet.http.HttpServlet;
7 import java.servlet.http.HttpServletRequest;
8 import java.servlet.http.HttpServletResponse;
9 import java.text.DateFormat;
10 import java.util.Date;
11
12 @WebServlet("/now")
13 public class Now extends HttpServlet {
14     private static final long serialVersionUID = 1L;
15
16     public Now() {
17         super();
18     }
19
20     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
21         response.getWriter().append("<!DOCTYPE html>");
22         "content-type" +
23         "meta charset="UTF-8">";
24         "expires" + "3000";
25         "content-type";
26         response.getWriter().append("<body>");
27         response.getWriter().append("We are ");
28         response.getWriter().append(DateFormat.getDateInstance( DateFormat.SHORT).format( new Date() ));
29         response.getWriter().append("</body>");
30     }
31 }
32 }
```

Extend HttpServlet

imports

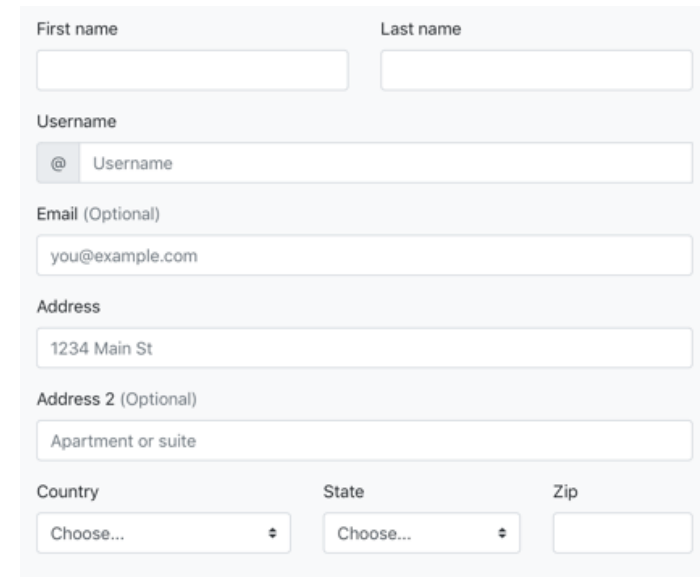
HTML GENERATOR

[.metadata\plugins\org.eclipse.wst.server.core\tmp0\work\Catalina\localhost\Project1\org\apache\jsp](https://www.eclipse.org/wst/server/core/tmp0/work/Catalina/localhost/Project1/org/apache/jsp)

A FORM

A Html form is capable to

- ▶ show fields to input informations into the browser
- ▶ submit/send fields from browser to one servlet
- ▶ receive a response into the browser after submit information
- ▶ GET method, fields are visible into the URL
- ▶ POST method, fields are into the header perfect to send files

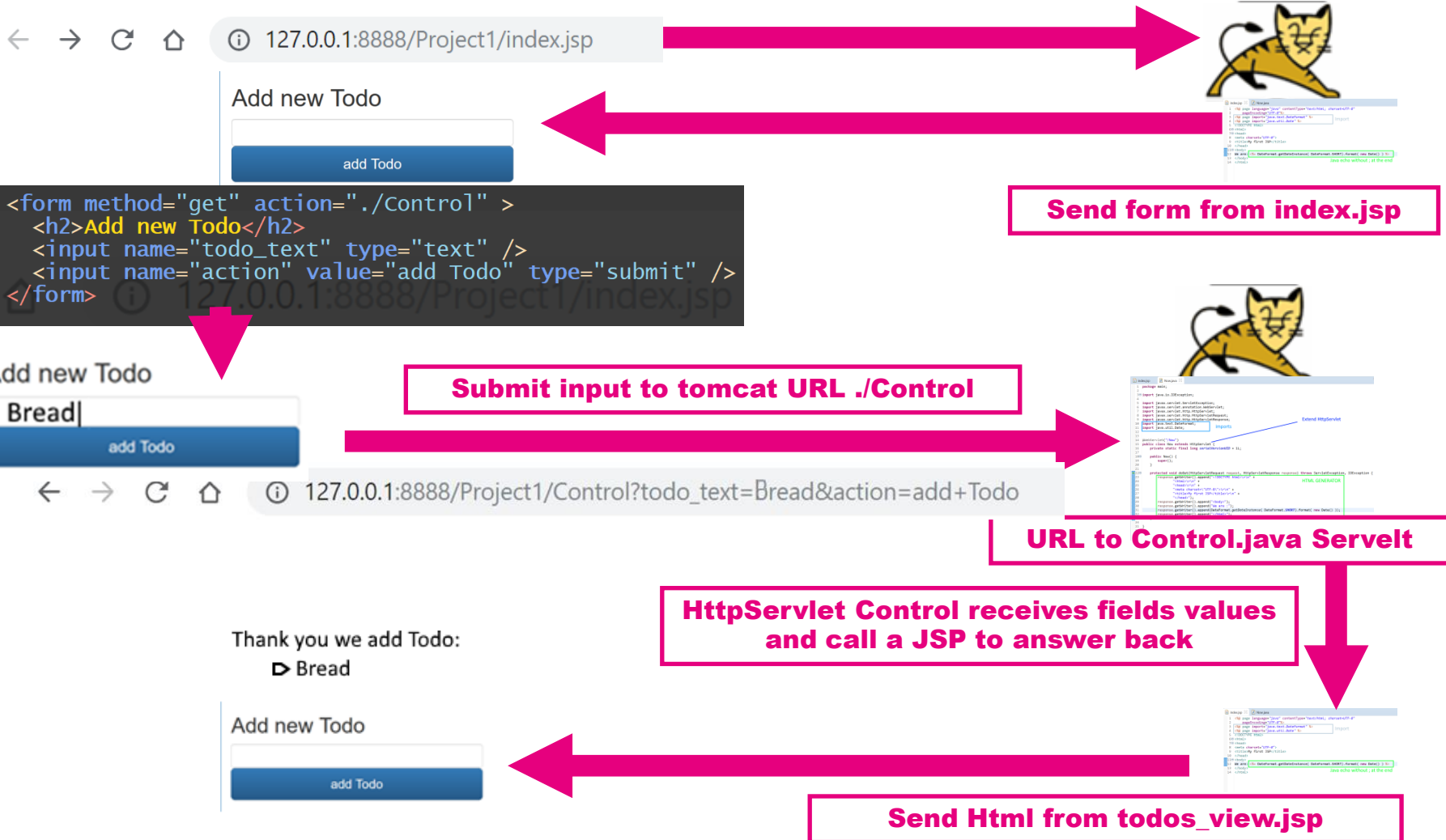


The image shows a web form with the following fields:

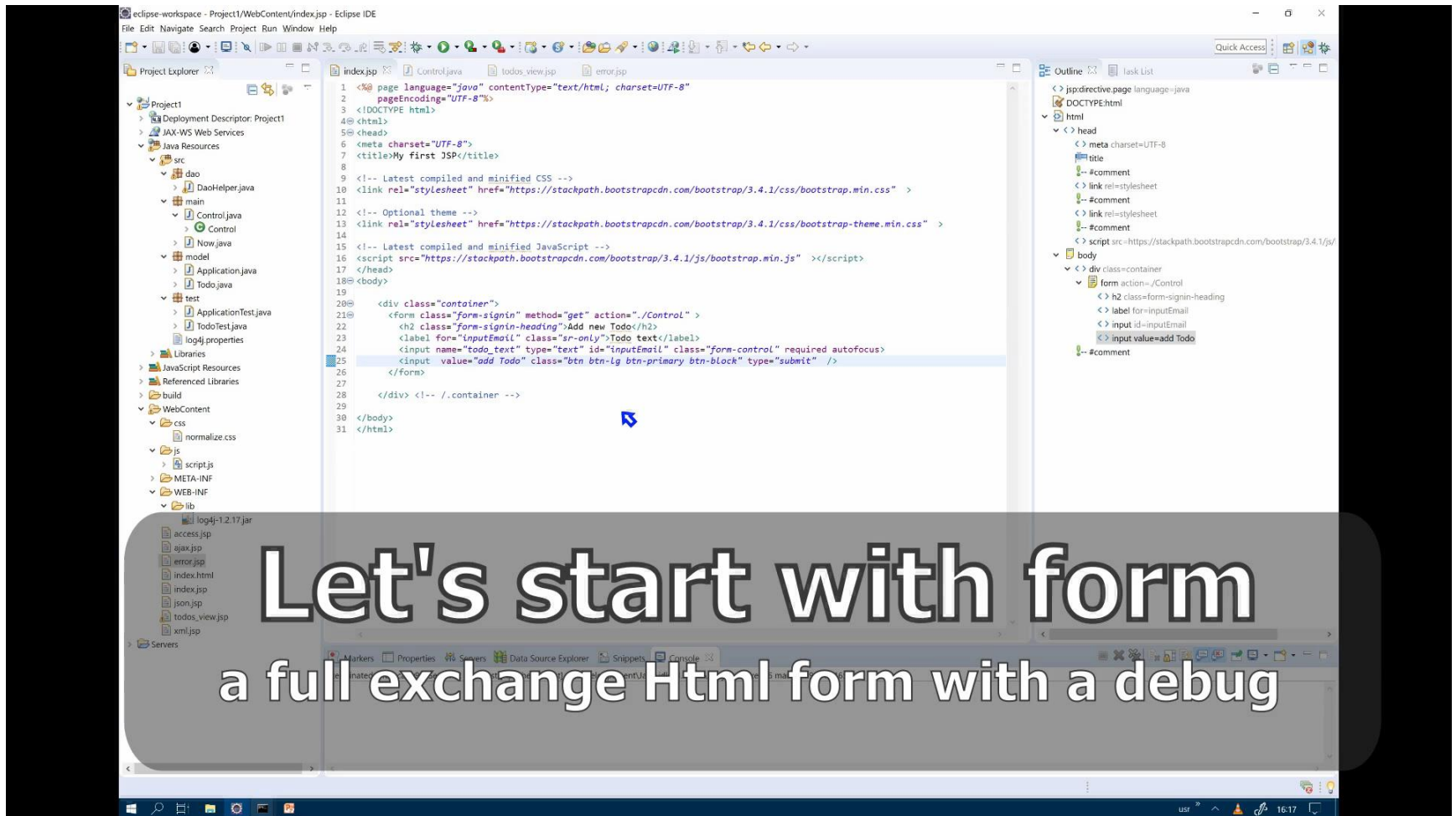
- First name:
- Last name:
- Username:
- Email (Optional):
- Address:
- Address 2 (Optional):
- Country:
- State:
- Zip:

Use the network tab into your browser's web development tools to see submit header and response

THE MOST IMPORTANT SLIDE



HOW TO DEBUG



The screenshot shows the Eclipse IDE interface. The main editor displays the code for `index.jsp`, which includes a form for adding a new todo item. The code is as follows:

```
1 <% page language="java" contentType="text/html; charset=UTF-8"
2 pageEncoding="UTF-8"%>
3 <!DOCTYPE html>
4 <html>
5 <head>
6 <meta charset="UTF-8">
7 <title>My first JSP</title>
8
9 <!-- Latest compiled and minified CSS -->
10 <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css" >
11
12 <!-- Optional theme -->
13 <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap-theme.min.css" >
14
15 <!-- Latest compiled and minified JavaScript -->
16 <script src="https://stackpath.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js" ></script>
17 </head>
18 <body>
19
20 <div class="container">
21 <form class="form-signin" method="get" action="/Control" >
22 <h2 class="form-signin-heading">Add new Todo</h2>
23 <label for="inputEmail" class="sr-only">Todo text</label>
24 <input name="todo_text" type="text" id="inputEmail" class="form-control" required autofocus>
25 <input value="add Todo" class="btn btn-lg btn-primary btn-block" type="submit" />
26 </form>
27
28 </div> <!-- /.container -->
29
30 </body>
31 </html>
```

The Project Explorer on the left shows the project structure, including `src`, `dao`, `main`, `Control.java`, `model`, `Application.java`, `Todo.java`, `test`, `ApplicationTest.java`, `TodoTest.java`, `log4j.properties`, `Libraries`, `JavaScript Resources`, `Referenced Libraries`, `build`, `WebContent`, `css`, `normalize.css`, `js`, `script.js`, `META-INF`, `WEB-INF`, `lib`, `log4j-1.2.17.jar`, `access.jsp`, `ajax.jsp`, `error.jsp`, `index.html`, `index.jsp`, `json.jsp`, `todos.view.jsp`, and `xml.jsp`. The Outline view on the right shows the DOM structure of the page, including `html`, `head`, `body`, and `form`.

Let's start with form
a full exchange Html form with a debug

MOST EVERYTHING INSIDE ECLIPSE IDE JEE

The screenshot displays the Eclipse IDE JEE interface. The Project Explorer on the left shows a project named 'todos' with the following structure:

- src/main/java (SERVLET CONTROLLER)
 - todos.controller
 - Controller.java
 - todos.dao (DAO/PERSISTENCE)
 - DaoHelper.java
 - DaoManager.java
 - todos.model (MODEL)
 - Application.java
 - Todo.java
 - todos.test (UNIT TESTS)
 - TodoTest.java
 - log4j.properties (LOG CONF)
- Referenced Libraries
- build
- src
 - main
 - java
 - webapp
 - css (CSS)
 - normalize.css
 - print.css
 - js (Javascript)
 - jquery.js
 - script.js
 - META-INF
 - MANIFEST.MF
 - WEB-INF
 - lib (JARS)
 - log4j-1.2.17.jar
 - jsp (JSP/VIEWS)
 - ajax.jsp
 - confirm-delete-todo.jsp
 - index.jsp
 - login.jsp

The central editor shows the code for `DaoManager.java`, which includes methods like `getInstance()`, `createDatabase()`, and `addTodo()`. The right-hand side shows the Outline view with 2 perspectives: JEE and DEBUG.

At the bottom, the Servers view shows a Tomcat v9.0 Server at localhost [Stopped, Republish] with the project 'todos' associated with it.

Missing Javascript debugger, CSS designer and database manager

DEBUG WITH BROWSER

Inspect element

Phone/Tablet

Html Element

Console to show error

A very important tabs

HTML PAGE

Final size of this element

Edit any CSS of this element

RECORD EVENT

DISABLE CACHE FOR DEVELOPMENT

HTML PAGE

LIST OF CONTENT LOAD BY THIS HTML PAGE

LEADER REVIEW RESPONSE OF ONE CONTENT

DETAILED INFORMATION ABOUT EACH RESOURCE

Name	Method	Status	Type	Size	Time	Waterfall
bootstrap-theme.min.css	GET	200	stylesheet	(from disk c...)	4 ms	
bootstrap.min.css	GET	200	stylesheet	(from disk c...)	3 ms	
bootstrap.min.js	GET	200	script	(from mem...)	0 ms	
index.jsp	GET	200	document	1.1 KB	13 ms	

Resource	Time
Queued at 0	
Started at 0.79 ms	0.79 ms
Resource Scheduling	
Queueing	
Connection Start	
Stalled	127 ms
DNS Lookup	16 µs
Initial connection	0.76 ms
Request/Response	
Request sent	0.16 ms
Waiting (TTFB)	9.28 ms
Content Download	1.12 ms
Total	13.56 ms

LAST STEP ADDITIONAL CONCEPTS

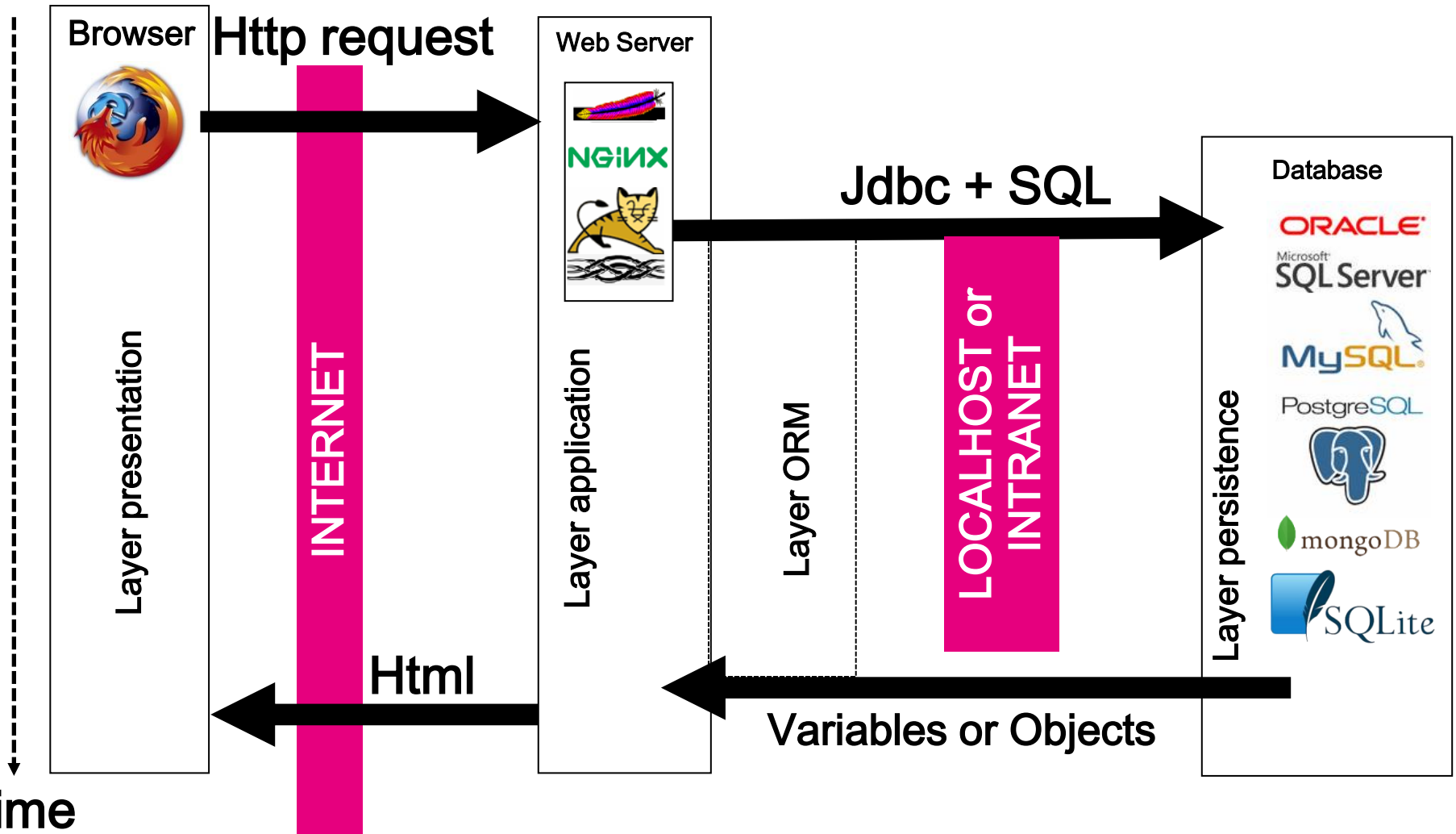


IMT Mines Alès
École Mines-Télécom

ADDITIONAL CONCEPTS

- ▶ 3-tiers architecture
- ▶ URL Rewriting & RESTFull
- ▶ CSS
- ▶ How to Ccss
- ▶ Framework as Boostrap
- ▶ Javascript & Jquery
- ▶ Ajax
- ▶ Framework JS: AngularJS, ReactJS
- ▶ At the end

3-TIER ARCHITECTURE



Potential timeout on each layer

URL REWRITING & RESTFULL

http://www.site.com/2018/02/27/



```
RewriteRule ^[/]*/(.*/)(.*/)(.*/)$ index.php?year=$1&month=$2&day=$3 [L,QSA]
```

http://monsite.com/index.php?year=2018&month=02&day=27

URL Rewriting and RESTFull

- ▶ GET / POST / DELETE / PUT
- ▶ Bookmark compatible for GET
- ▶ User friendly
- ▶ Javascript and command line API for integration with other system
- ▶ SEO

CSS

```
<html><head>
<style type="text/css">
  h1{font-size : 2em; margin : 0.67em 0;}
  .attention{ color:red; }
  #intro{ font-style: italic; }
  h3.attention{ color: black; }
</style>
<body>
<h1>Web site title</h1>
<p class="attention">This site is under construction</p>
<p id="intro" class="attention">Introduction</p>
<h3 class="attention">Warning </h3>
</body>
</html>
```

Or load from a CSS file

```
<link rel='stylesheet'
href='css/style.css'
type='text/css />
```

CSS ++

- ▶ Preprocessor SASS / LESS
- ▶ Content Delivery Network
- ▶ CSS 4 with variables

HOW TO CSS

Css Zen Garden design challenge : don't touch HTML and no JS only CSS

So visit, learn and copy content !

Zero CSS only Html

css Zen Garden

The Beauty of CSS Design

A demonstration of what can be accomplished visually through CSS-based design. Select any style sheet from the list to load it into this page.

Download the sample [html file](#) and [css file](#).

The Road to Enlightenment

Lettering a dark and dreary road by the part relics of browser-specific tags, incompatible DOMs, and broken CSS support.

Today, we must clear the mind of past practices. Web enlightenment has been achieved thanks to the tireless efforts of folk like the W3C, WaSP and the major browser creators.

The css Zen Garden invites you to relax and meditate on the important lessons of the masters. Begin to see with clarity. Learn to use the (yet to be) time-honored techniques in new and invigorating fashion. Become one with the web.

So What is This About?

There is clearly a need for participation. To begin, visit the page. The code remains the same, the only thing that has changed is the external .css file, really.

css Zen Garden

The Beauty of CSS Design

A demonstration of what can be accomplished visually through CSS-based design. Select any style sheet from the list to load it into this page.

Download the sample [html file](#) and [css file](#).

The Road to Enlightenment

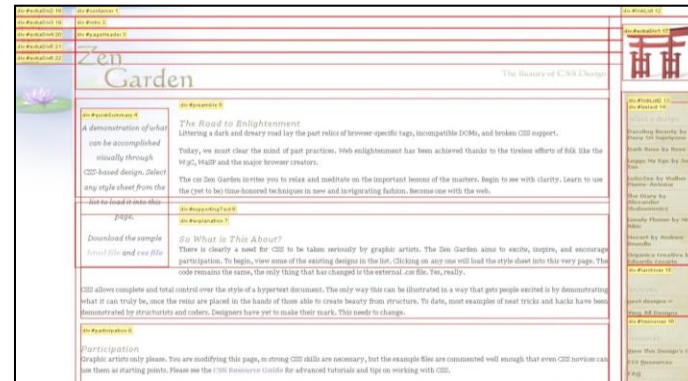
Lettering a dark and dreary road by the part relics of browser-specific tags, incompatible DOMs, and broken CSS support.

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Display DIV grouping tag

Same Html + one Css Design



Same HTML + an other Css Design

<http://www.csszengarden.com/058/>

<http://www.csszengarden.com/202/>

<http://www.csszengarden.com/198/>

FRAMEWORK AS BOOTSTRAP

EXAMPLE

Email

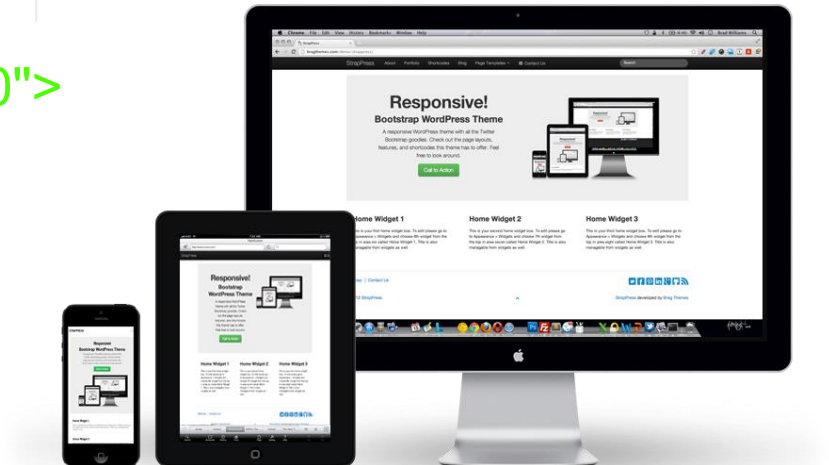
Password

Remember me

```

<div class="col-md-offset-2 col-md-10">
  <div class="checkbox">
    <label>
      <input name="rememberMe"
        type="checkbox">
        Remember me
    </label>
  </div>
</div>

```



.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1	.col-md-1
.col-md-8								.col-md-4			
.col-md-4				.col-md-4				.col-md-4			
.col-md-6						.col-md-6					

JAVASCRIPT & JQUERY

Javascript (Vanilla) is

- ▶ an other language inside the browser
- ▶ able to manipulate DOM from browser event
- ▶ extend into several multi browser framework as jquery

Jquery is

- ▶ write in Javascript
- ▶ with `$(" ")` function to find element with CSS notation
- ▶ Compatible with lot of browsers

```
<html>
  <body>
    <script>
      $( "input#bouton" ).click(function() {
        $( this ).slideUp();
      });
    </script>
    <input type="button" id="bouton" />
  </body>
</html>
```

AJAX

Asynchronous Javascript & Xml is

- ▶ a javascript function
- ▶ a new way to exchange between browser and web server
- ▶ a background browser event function
- ▶ receive data in XML or now more in JSON

```
$(document).ready(function(){  
    setInterval(  
        function(){  
            $.ajax({url:"./ajax-time.jsp" ,  
                dataType: "xml",  
                success: function( result ){  
                    $("#clock").html( result.firstChild.innerHTML );  
                }  
            }, 2000);  
        });  
});  
</script>  
</head>  
<body>  
<div id="clock"></div>
```

Name	Method	Status	Type	Size	Time
<input type="checkbox"/> ajax-time.jsp	GET	200	xhr	199 B	2 ms
<input type="checkbox"/> ajax-time.jsp	GET	200	xhr	199 B	4 ms
<input type="checkbox"/> ajax-time.jsp	GET	200	xhr	199 B	6 ms
<input type="checkbox"/> ajax-time.jsp	GET	200	xhr	199 B	4 ms



x	Headers	Preview	Response	Cookies	Timing
1			<?xml version="1.0" encoding="utf-8"?>		
2			<now>		
3			lundi 18 mars 2019		
4			15:40:47 CET		
5			</now>		

FRAMEWORK JS : ANGULARJS A REACTJS

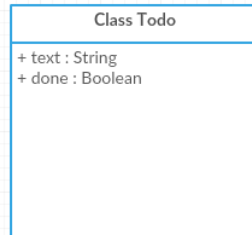
```
<html>
<head>
  <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
  <script src="todo.js"></script>
</head>
<body ng-app="todoApp" >

  <div ng-controller="TodoListController as todoList">
    <ul>
      <li ng-repeat="todo in todoList.todos">
        <input type="checkbox" ng-model="todo.done">
        |
        <span class="done-{{todo.done}}">
          {{todo.text}}
        </span>
      </li>
    </ul>
  </div>
</body>
</html>
```

Todo List for shopping

- Bread
- Egg
- Oil

```
1
2
3 angular.module('todoApp', [])
4   .controller('TodoListController', function() {
5     var todoList = this;
6     todoList.todos = [
7       {text:'learn angular', done:true},
8       {text:'build an angular app', done:false}];
9
10  });
11
```



```
[Aucun nom] + - GVIM
Fichier Edition Outils Syntaxe Tampons Fenêtre Aide
const rootElement = document.getElementById('main')

class TodoItem extends React.Component {
  render() {
    return (
      <li><input type="checkbox" name={this.props.name}
        checked={this.props.checked} />
        {this.props.name}
      </li>
    );
  }
}

class TodoList extends React.Component {
  render() {
    return (
      <div className="todo-list">
        <h1>Todo List for {this.props.name}</h1>
        <ul>
          <TodoItem name="Bread" checked="checked" />
          <TodoItem name="Egg" checked="" />
          <TodoItem name="Oil" checked="checked" />
        </ul>
      </div>
    );
  }
}

function App() {
  return( <div> <TodoList name="shopping" /> </div> )
}

ReactDOM.render( <App />, rootElement )
```

AT THE END

```
Class Todo
+ text : String
+ done : Boolean
```

UNIFIED
MODELING
LANGUAGE



Chain of tools



CSS

HTML

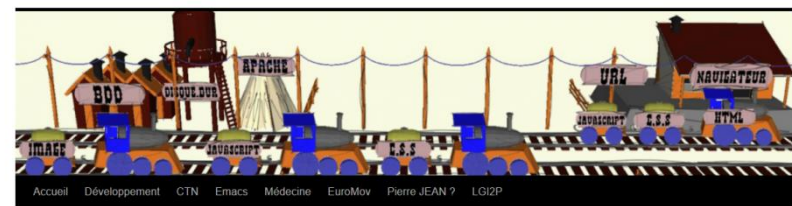


THE END QUESTIONS ?

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<http://pierrejean.wp.imt.fr>