### Metodologie per la Programmazione per il Web - MF0437 Server-side rendering

Docente

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Informazioni, materiale e risorse su:

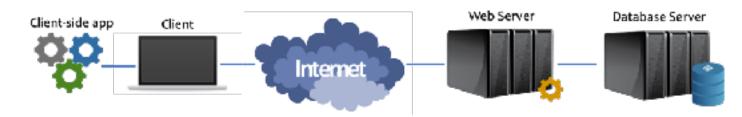
moodle [https://www.dir.uniupo.it/course/view.php?id=16455]

Slide adattate di versioni precedenti a cura dei

Proff. Luigi De Russis ed Alessio Bottrighi

### Current Architecture

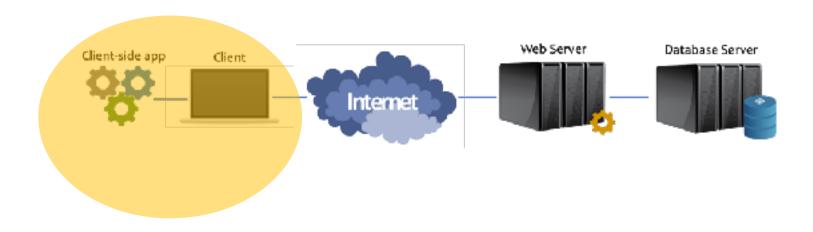
- \* Up to now, we have:
  - a server app that exposes REST API, by exchanging information in JSON
  - \* and it serves a single HTML page for every other request
  - \* a front-end app that "starts" from the single HTML page,
  - consumes the information provided through the REST API and render itself
- \* All the rendering of the web app is in the client
  - \* each browser receive the single HTML page and renders the same web app
  - \* we have a single-page application

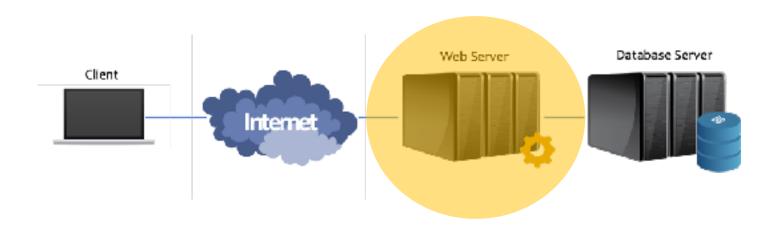


# Rendering Everything in the Server

- \* We can move all the rendering in the server and obtain a multi-page web application
  - \* this is what we called the "traditional" architecture







## What We Need & What Changes

- \* We just need *Express*!
  - plus a templating system to dynamically create (and compose) HTML pages
- \* We can re-use most of the code we developed so far
  - \* it's all JavaScript, in the end
- \* The thing that really changes is the approach
- \* Instead of having a REST server + a front-end app with a lot of JavaScript to get data and manipulate the DOM...
- \* ... we have a server that generates HTML pages ready to be displayed in a browser
  - maybe, with some JavaScript to add a smooth interaction on some elements

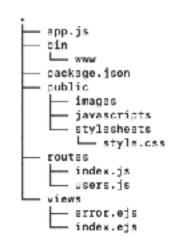
In Practice...

# express-generator

\* Express has a tool to quickly create an application skeleton

npx express-generator

- \* It generates an Express app with various useful dependencies including a template engine
  - \* we are going to use the -v ejs option for this
- \* A **template engine** allows you to easily design and generate an HTML page
  - at runtime, the template engine replaces variables in a template file with actual values
  - \* and transforms the template into an HTML file sent to the browser



#### EJS

- \* A simple template engine that lets you generate HTML markup with plain JavaScript
- \* https://ejs.co
- \* Install with npm install ejs
- \* Sample usage in an .ejs file:

```
<% if (user) { %>
     <h2><%= user.name %></h2>
<% } %>
```

## EJS Tags

'Scriptlet' tag, for control-flow, no output **<**% 'Whitespace Slurping' Scriptlet tag, strips all whitespace before it <% Outputs the value into the template (HTML escaped) <%= Outputs the unescaped value into the template <%-Comment tag, no execution, no output <%# Outputs a literal '<%' < % % Plain ending tag **%>** Trim-mode ('newline slurp') tag, trims following newline **-**%> 'Whitespace Slurping' ending tag, removes all whitespace after it 응>

#### EJS Include

\* It is possible to include a template file in another, thus composing the page with different "pieces"

```
    <% users.forEach(function(user){ %>
         <%- include('user/show', {user:
    user}); %>
    <% }); %>
```

```
<%- include('header'); -%>
<h1>
   Title
</h1>

   My page

<%- include('footer'); -%>
```

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