

## Web technology -

### Individual Assignment 2: Build your own web app

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#### General

The topic of my web application is a personal introduction page, to meet the anonymous requirement for the peer review, I chose a famous figure Bill Gates. The app is divided in several sections which include the top part of personal introduction, "Work experience", "projects" and "Education".

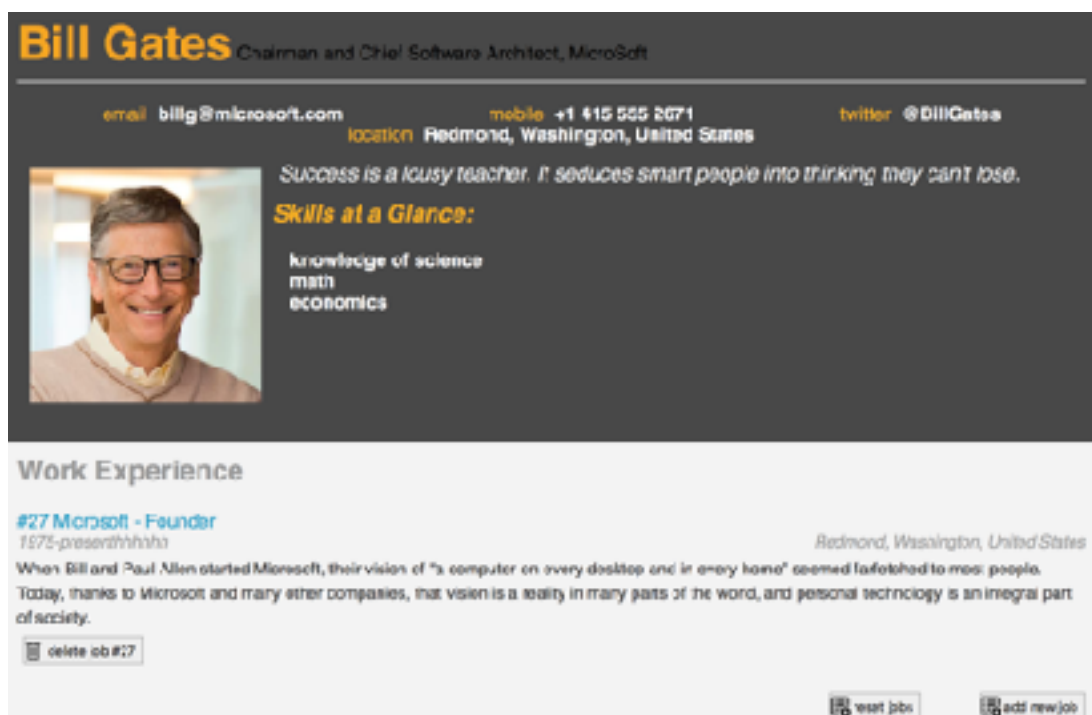
This website is hosted in AsWS (Amazon Web Services). AWS is a very famous world cloud service provided by Amazon. One of these services is EC2 (Elastic Compute Cloud). EC2 provides a so-called virtual instance, which you can host your website. It is free for beginners and pretty easy to use - the url of the app is <http://35.157.2.21:8080/myWeb>

The browser I have used to test is Chrome and Safari. No additional information is required to evaluate the application.

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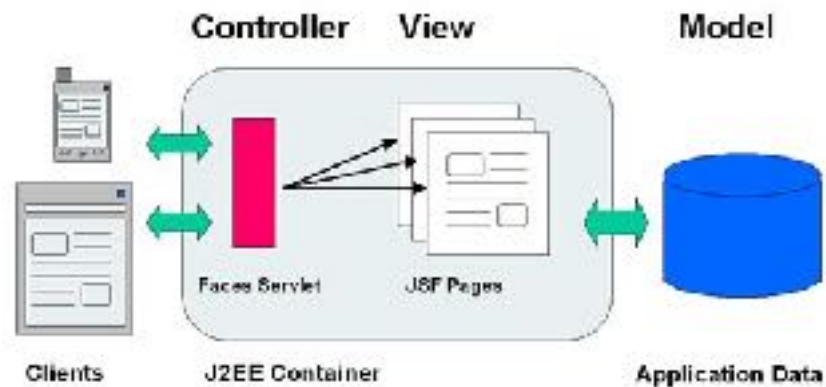
#### Design: Frontend

The design of the frontend is implemented by JSF server component called "view". A view is rendered as a HTML backbone. Additionally, CSS is used to decorate the HTML webpage. JavaScript is used to define the webpage behaviour. Furthermore, a front-end framework jQuery is used to ease the development. A screenshot of the webpage is shown as follows:



## Design: Backend

The web framework used is JSF (Java server faces), in the framework, a very common web design pattern, MVC (Model-View-Controller) is used. MVC model is a very classic design pattern, which provides clear separation between user interface and business logic. This makes the software easy to maintain. A typical JSF architecture is shown as the following figure:



In the meanwhile, an ORM (Object Relation Mapping) framework is used, which is hibernate. Hibernate provides convenient object/SQL mapping, which provides clear separation between software developer and the database administrator.

## Databases

Table structure

#	Name	Type
1	jobId	int(11)
2	dates	varchar(255)
3	description	longtext
4	employer	varchar(255)
5	location	varchar(255)
6	title	varchar(255)

In the database, the data stored is my personal work experience. Because these data will be persisted and live across different browser sessions. The database I use is MySQL. The connexion technology is JDBC (Java Database Connectivity). The table structure of the working experience is shown as the left figure.

The database is located in the same host as the web server. The remote access is forbidden for the security reason, however, the database is available via phpMyAdmin, which is a convenient web interface to access MySQL database. The url of phpMyAdmin is <http://35.157.2.21/phpmyadmin>

The user name is **root**, the password is **Derdeer\_191960**.

A typical work experience data is shown as follows:

jobId	dates	description	employer	location	title
31	1975-present	When Bill and Paul Allen started Microsoft, their ...	Microsoft	Redmond, Washington, United States	Founder
32	2000-present	Gates studied the work of Andrew Carnegie and John...	Bill & Melinda Gates Foundation	500 Fifth Avenue North, Seattle	Chair

## Interaction

The website supports working experience deletion, insertion, and reset to the initial state. The detail can be referred to from the web interface, e.g., the deletion of the a specific working experience can be achieved by clicking the “delete job” button under the work experience.

## REST API

A brief overview of the REST APIs is shown as the above table. A query of a specific

Operation Description	Resource URL	HTTP Method
Update an existing job	<a href="http://35.157.2.21:8080/myWeb/restapi/jobs/{jobId}">http://35.157.2.21:8080/myWeb/restapi/jobs/{jobId}</a>	PUT
Delete an existing job	<a href="http://35.157.2.21:8080/myWeb/restapi/jobs/{jobId}">http://35.157.2.21:8080/myWeb/restapi/jobs/{jobId}</a>	DELETE
Get an existing job	<a href="http://35.157.2.21:8080/myWeb/restapi/jobs/{jobId}">http://35.157.2.21:8080/myWeb/restapi/jobs/{jobId}</a>	GET
Create a new job	<a href="http://35.157.2.21:8080/myWeb/restapi/jobs">http://35.157.2.21:8080/myWeb/restapi/jobs</a>	POST
Get all jobs	<a href="http://35.157.2.21:8080/myWeb/restapi/jobs">http://35.157.2.21:8080/myWeb/restapi/jobs</a>	GET

working experience and all the working experiences are supported. Additionally, the update, create and delete of working experience are supported. A typical job information in the message body is shown as follows:

```
<job>
  <dates>1975-present</dates>
  <description>When Bill ... society.</description>
  <employer>Microsoft</employer>
  <jobId>30</jobId>
  <location>Redmond, Washington, United States</location>
  <title>Founder</title>
</job>
```