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Software Engineering II project

Travlendar+

Implementation & **T**esting

Document

V1

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1 Introduction

1.1 Scope

The main focus of our system design phase will be to create an application capable of reaching the vast majority of users. Thus the architecture must be designed with the intent of being maintainable and extensible, also forseeing future changes. It should also be flexible enough in order to make future integration of features or adaptations and deploy on other type of platforms and devices as easy as possible. This document aims to drive the implementation phase so that cohesion and decoupling are increased in full measure. In order to do so, individual components must not include too many unrelated functionalities and they should reduce interdependency between one another.

1.2 Revision

2 Implemented functionalities

2.1 Scope

3 Adopted development frameworks

3.1 Adopted programming languages

3.2 Adopted middlewares

3.3 Used APIs

4 Source Code structure

5   Testing

6 Installation Instructions

6.1 System Requirements

6.1.1 JDK

In case you don't have any version of Java Development Kit you should download its latest version from:
http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

6.1.2 Glassfish Web Server

Being Travlendar+ a web application, it is essential to have a web server installed, here we provide information about the installation and deployment on Glassfish 4.1.1. You can download it from
https://javaee.github.io/glassfish/download

6.1.3 DBMS

For simplicity, we decided to use the basic DBMS provided by glassfish, Apache Derby RDBMS, thus you do not need anything else if you have installed Glassfish Server.

6.1.4 Browser

For the development and testing we always used Google Chrome as browser, we recommend installing the latest version of Chrome and we do not guarantee the absence of bugs and poor performances on other Browsers, even if they would probably work just as fine.

6.2 Environment Setup

6.2.1 Starting up Glassfish Server

- On Windows, open command prompt as administrator (right click on cmd.exe and click Run as administrator), on Linux or MacOS open Terminal.

- browse to Glassfish installation path and open bin folder, usual installation path on Windows: *C:\Program Files\glassfish-4.1.1\bin*, execute command *cd C:\Program Files\glassfish-4.1.1\bin*

- execute command *asadmin start-domain*

Figure 1: Commands to execute in order to start Glassfish Server

After the server has started you will be able to access the Admin Console at
https://localhost:4848 and the web server at
https://localhost:8080
(If you need to stop Glassfish server just execute command *asadmin stop-domain*

6.2.2   Setting up JDK path

Sometimes an error is displayed if Glassfish does not find the JDK automatically, you can execute the command
asadmin set "server.java-config.java-home=C:\Program Files\Java\jdk1.8.0_-121"
Just substitute *C:\Program Files\Java\jdk1.8.0_121* with your path to the JDK
you previously downloaded.

6.2.3   Database configuration

In order to make it simpler to create the database you can download the already
configured Derby database from
https://linkdropbox
Unzip it and put it in the folder: *.\glassfish\databases*
in the glassfish installation path (on Windows usually
cd C:\Program Files\glassfish-4.1.1

Figure 2: Location in which the database should be stored

6.2.4   Starting Apache Derby DBMS

Execute command
asadmin start-database
in order to start the database.

Figure 3: Commands to execute in order to start Apache Derby DBMS

Be sure the port is the default one (1527).
If at any moment you want to stop the database just execute command
asadmin stop-database

6.3   Application Deployment

After having configured and set up the environment, download the `.war` file
`Travlendar.war` at
link release in github.

You can now follow one of these ways in order to deploy the Application on Glassfish.

6.3.1 Manual deployment from Admin Console

After the server has started you will be able to access the Admin Console at
https://localhost:4848
Click on `Applications` tab on the left. Then click `Deploy...` button.

Figure 4: Glassfish admin console

Click on `Choose file` and select the `Travlendar.war` release file previously downloaded, then click ok.

Figure 5: Glassfish admin console

If everuthing went fine you should see something similar to this.

Figure 6: Glassfish admin console

Just click on `Launch` to start the application.
You can access the application opening the URL:
https://localhost:8080/Travlendar

6.3.2 Manual deployment from Command Line

Supposing you already started the server and the database, and you are in the bin folder in the Glassfish installation path, just execute
asadmin deploy C: \Users\Mirko \Desktop\Travlendar.war
substituting *C: \Users\Mirko \Desktop* with your path to `Travlendar.war` release file.

Figure 7: Commands to execute in order to Deploy the application on Glassfish Server

You can now access the application by executing
start http://localhost:8080/Travlendar/ on Windows, *open http://localhost:8080/Travlendar/*

on MacOS X, or *xdg-open http://localhost:8080/Travlendar/* on Linux, or simply open the browser and type *localhost:8080/Travlendar* in the URL bar and press Enter.

6.3.3 Autodeployment

Just put the `Travlendar.war` file in *¡GlassFish-Installation-Path¿/domains/domain1/autodeploy* and restart the server.

6.4 Running the app

Once the deployment is finished you can access the Application at *localhost:8080/Travlendar* on a browser in your local machine, at *192.168.1.3:8080/Travlendar* on a device connected to the same LAN (just replace *192.168.1.3* with the private IP address of the machine the server is running on.
You can even access the application from a remote device, you just need to open the port 8080 of the router of your LAN by creating a virtual server and NATting the external access onto the private IP address of the machine your server is running on (private IP should be configured as static). Then you can access from wherever you want just by going to *xx.xx.xx.xx:8080/Travlendar*, replace xx.xx.xx.xx with the public IP address of your router.
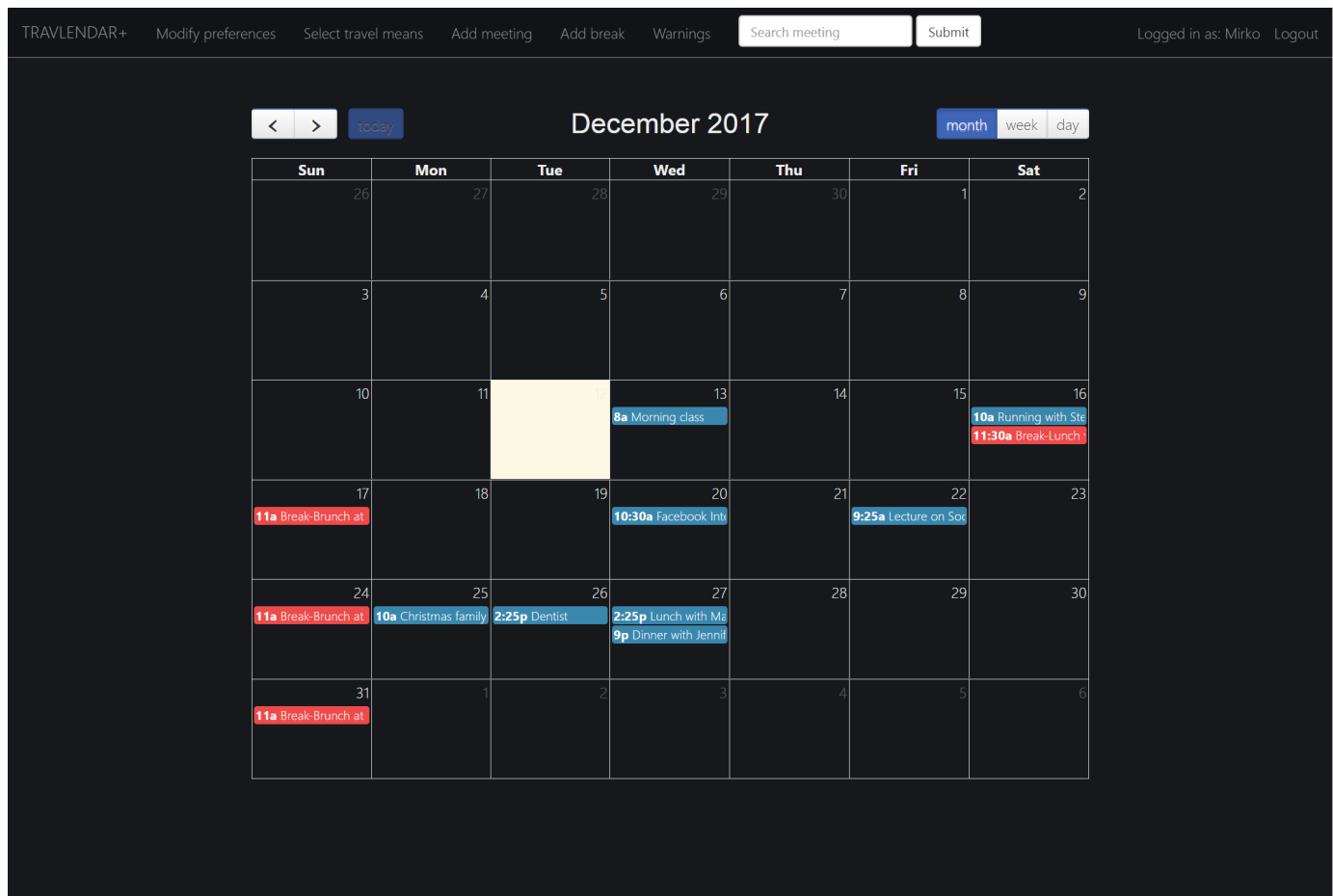
Figure 8: Travlendar Homepage

6.5　Possible issues and solutions

If you encounter any problem in the deployment regarding a database connectivity problem you could download Netbeans IDE (which includes Glassfish and Derby installation) and replace the Environment setup steps by creating a database with databasename = travlendar, name = mirko, password = mirko. Start glassfish server from there and then pass to the deployment phase as explained in these instructions.
If also this does not let you deploy the app as last chance you could clone the travlendar repository, import it as a project in netbeans build and clean the project, and run it.

7 Appendix

7.1 Used software

Task	Software
Edit and compile LaTeX code	TeXmaker, TeXstudio
Development IDE	Netbeans
Application server	Glassfish 4.1.1
DBMS	Java DB (Derby)

7.2 Effort spent

- Matteo Marziali working hours: $\cong 80$ hours

- Mirko Mantovani working hours: $\cong 80$ hours