

Exercise III: Web application development and deployment

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Version 1.0



Disclaimer

*This exercise only demonstrates, how a very simply web application running on a Java application server looks like. It does **not** demonstrate the architectural principles discussed in the lecture.*

Setup

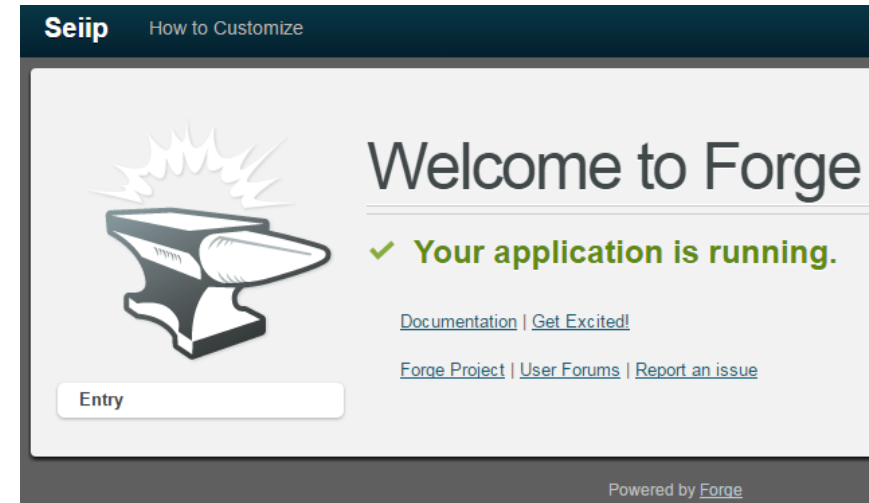
- If not already present: Download and install the Java Development Kit 1.8 from <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html> (A Java Runtime is not sufficient as a Java Compiler is required)
- Download JBoss Forge from <http://downloads.jboss.org/forge/releases/3.0.0.Beta1/forge-distribution-3.0.0.Beta1-offline.zip>
 - Forge is a prototyping tool which generates deployable web applications.
- Download redhat WildFly from <http://download.jboss.org/wildfly/10.0.0.Final/wildfly-10.0.0.Final.zip>
 - WildFly is an application server. Start it by running bin/standalone
 - Open <http://localhost:8080/> in your favorite browser, you should see a Welcome page
- Open a Console/Shell and start forge from the bin Folder. You might have to set JAVA_HOME to the installation path of the JDK (e.g. C:\Program Files\Java\jdk1.8.0_66)
- Use forge to create a simple web application (see next slide), the files will be create in your current shell folder.

Create a simple Web application using forge

- The web application is a simple list manager with text fields.
- Go the forge shell
- Create a new project using `project-new --named <student-id>`
- Create a new entity `jpa-new-entity --named <entity-name>`
- Create a few fields using `jpa-new-field --named <attribute>`
- Create a web application `scaffold-generate --targets org.<student-id>.*`
- Build it `build`
- Leave the shell open for later builds.

Deployment and Administration

- Copy the *.war file from <projectname>/target/ to <wildfly-install-dir>/standalone/deployments
- You should see activity in your wildfly console window
- Open <http://localhost:8080/<projectname>>
- You should see something like this → → → →
- You now have a running web application, congratulations!
- Click on the button below the anvil to get to the input form
- Create a few entries (see task 1 and 2 on last slide)
- Open the admin console (<http://localhost:8080/console>)
- Follow the instructions to create an admin user (hint: use „no“ for the question about slave servers)
- For task 3: Reload the page and go to „Runtime“ → „Standalone server“ → „JVM“ → „View“



Modifying the application

- The web application uses Java Server Faces to describe the user interface, we will now modify the JSF to enable validation of a form input field.
- Open `<student-id>\src\main\webapp\<entity>\create.xhtml` in your favorite text editor.
- On <http://incepttechnologies.blogspot.de/p/validation-in-jsf.html> there is a description on how required fields are described using a declarative approach in JSF. You have to set the input field to „required“ and add an error message.
- Build your web application using build in your forge shell.
- Deploy your application by copying the *.war to the standalone/deployment folder, it should redeploy automatically.
- Try to create a new entry in your web application without setting the required field. A red error message should appear (see task 4).

Tasks

- Submit your answers in moodle, please use the rich text editor and paste images using the rich text editor function.
- Task 1: Make a screen shot of your running web application which shows a few entries.
- Task 2: How many list entries are shown at one time („items per page“). You can either check the source code or try it out.
- Task 3: Copy the first four lines from the „Virtual Machine Status“ page (it should start with „Java HotSpot(TM)...“)
- Task 4: Make a screen shot showing the validation message for a required field.

People matter, results count.

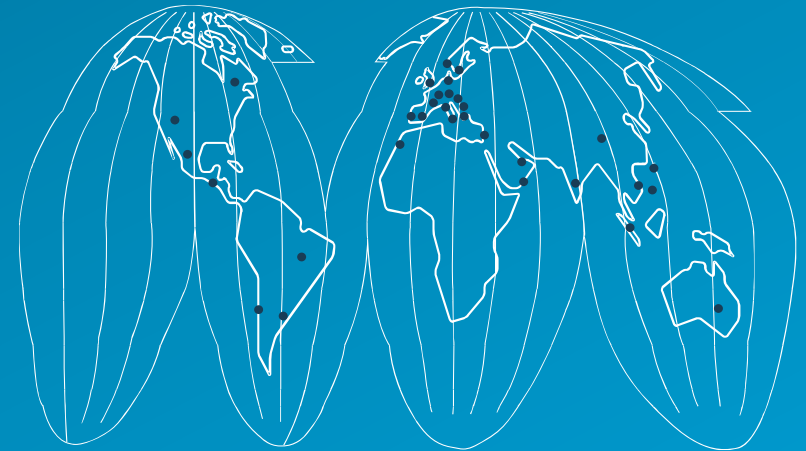


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