

# **E-Business Technologies Lab – Summer Term 2018 Software Installation Guide**

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University of Applied Sciences, Konstanz

# Preface

- **Usage of private computers for this assignment is highly recommended** because of
  - administrative restrictions of PCs in WI-Labs
  - space restrictions of your "Z:-Drive"
  - local installations of MySQL servers on WI-Lab-PCs
  - possibly difficult porting to private computers or other WI-Lab-PCs
  - ...

**but software runs also on PCs in WI-Labs (O-107 etc.)**

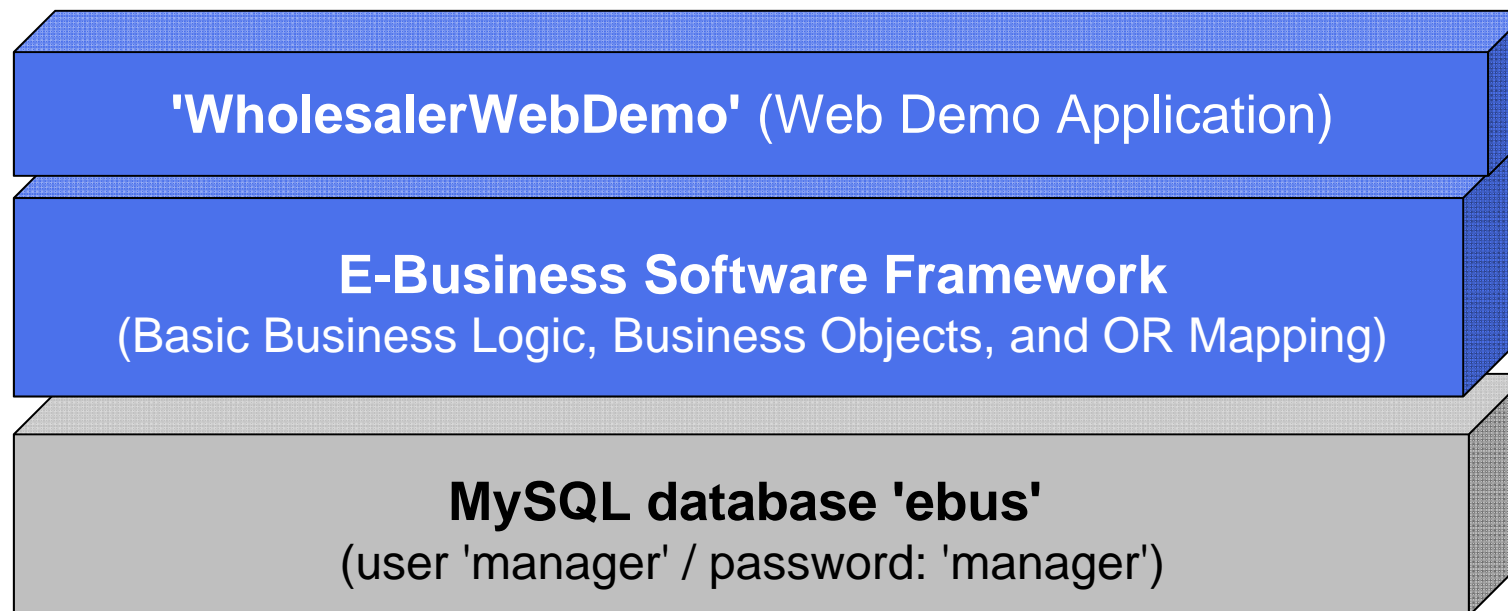
- if everything is properly configured
- all necessary setup steps are properly taken



# DISCLAIMER

- Dependent on
  - your personal systems environment (e.g., operating system, already installed software components)
  - exact version of software to be installedinstallation details may differ from the following slides!
- **Unfortunately, no guarantees can be given for the completeness and the correctness of the following slides!**
- Base for the following slides is **Microsoft Windows 10**

# System Landscape / Architecture



 **Web / Application Server (Servlet-Container):** [Apache Tomcat 6 / 7](#)

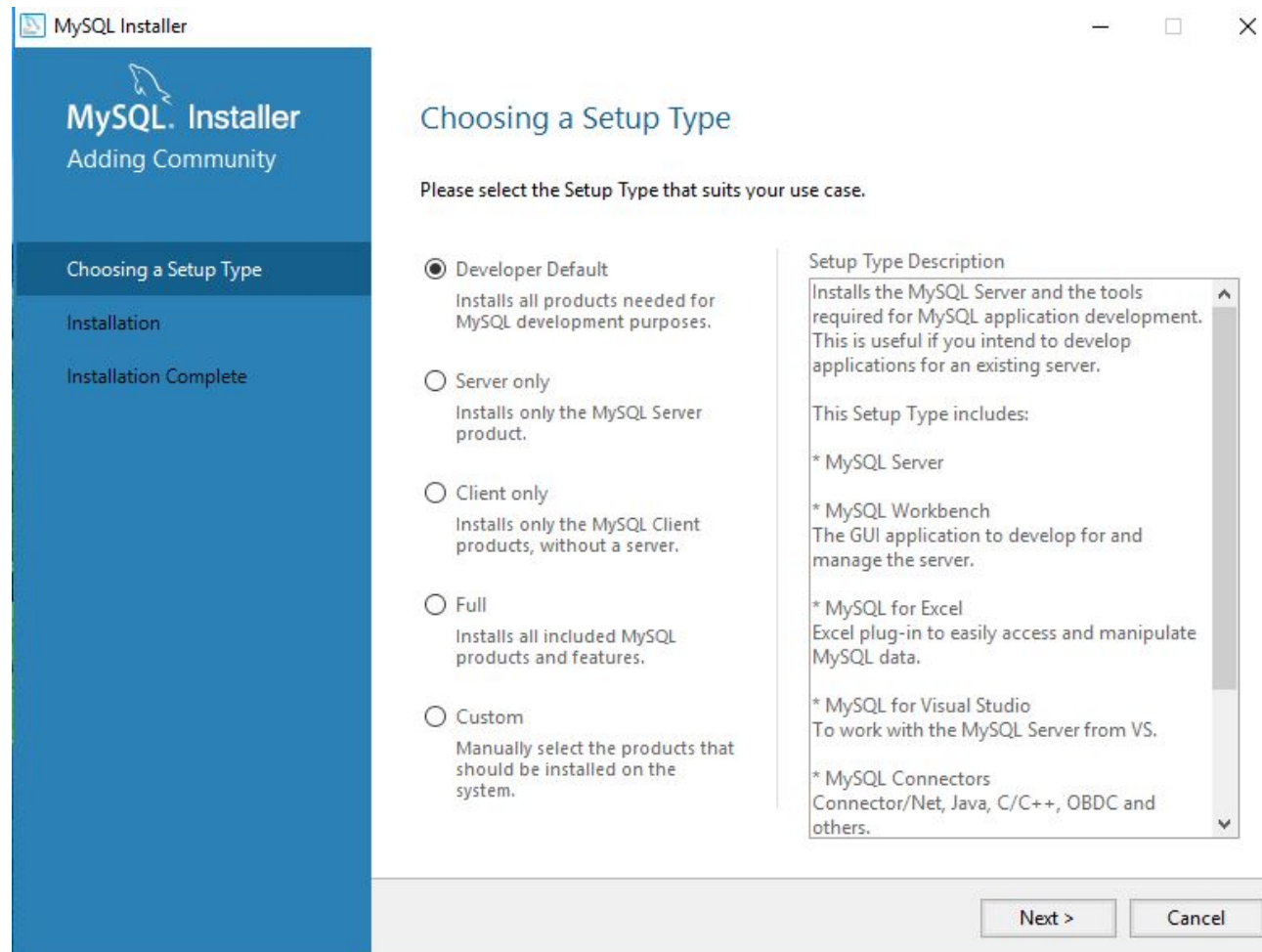
 **DBS Server:** [MySQL 5.x](#)

# Software Requirements for Running the E-Business Software Framework (EBSF)

- Java JDK 1.8  
([Java 8 SE Download](#))
- Eclipse IDE for Java EE Developers (or another IDE)  
(<http://www.eclipse.org/downloads/>)
  - Note: IntelliJ IDEA Community Edition doesn't support JEE
- MySQL Community Server 5.x  
(<http://www.mysql.de/downloads/mysql/>)
- HeidiSQL (or another MySQL GUI-Client/Frontend)  
(<http://www.heidisql.com/download.php>)
- Apache Tomcat 6 / 7 (8 not tested/supported!)  
(<http://tomcat.apache.org/whichversion.html> / [Mac](#))
- Apache Ant (if not included in the above)  
(<http://ant.apache.org/>)

# MySQL Community Server Installation (1 / 5)

## Start the installation



# MySQL Community Server Installation (2 / 5)

MySQL Installer

MySQL. Installer  
MySQL Server 5.7.17

Type and Networking

Accounts and Roles

Windows Service

Plugins and Extensions

Apply Server Configuration

### Type and Networking

Server Configuration Type

Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server instance.

Config Type:

Connectivity

Use the following controls to select how you would like to connect to this server.

☒ TCP/IP Port Number:

☒ Open Firewall port for network access

☐ Named Pipe Pipe Name:

☐ Shared Memory Memory Name:

Advanced Configuration

Select the checkbox below to get additional configuration page where you can set advanced options for this server instance.

☐ Show Advanced Options

Next > Cancel

# MySQL Community Server Installation (3 / 5)

MySQL Installer

MySQL Server 5.7.17

Type and Networking

**Accounts and Roles**

Windows Service

Plugins and Extensions

Apply Server Configuration

### Accounts and Roles

**Root Account Password**  
Enter the password for the root account. Please remember to store this password in a secure place.

MySQL Root Password:

Repeat Password:

**MySQL User Accounts**  
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.

MySQL Username	Host	User Role
----------------	------	-----------

Add User

Edit User

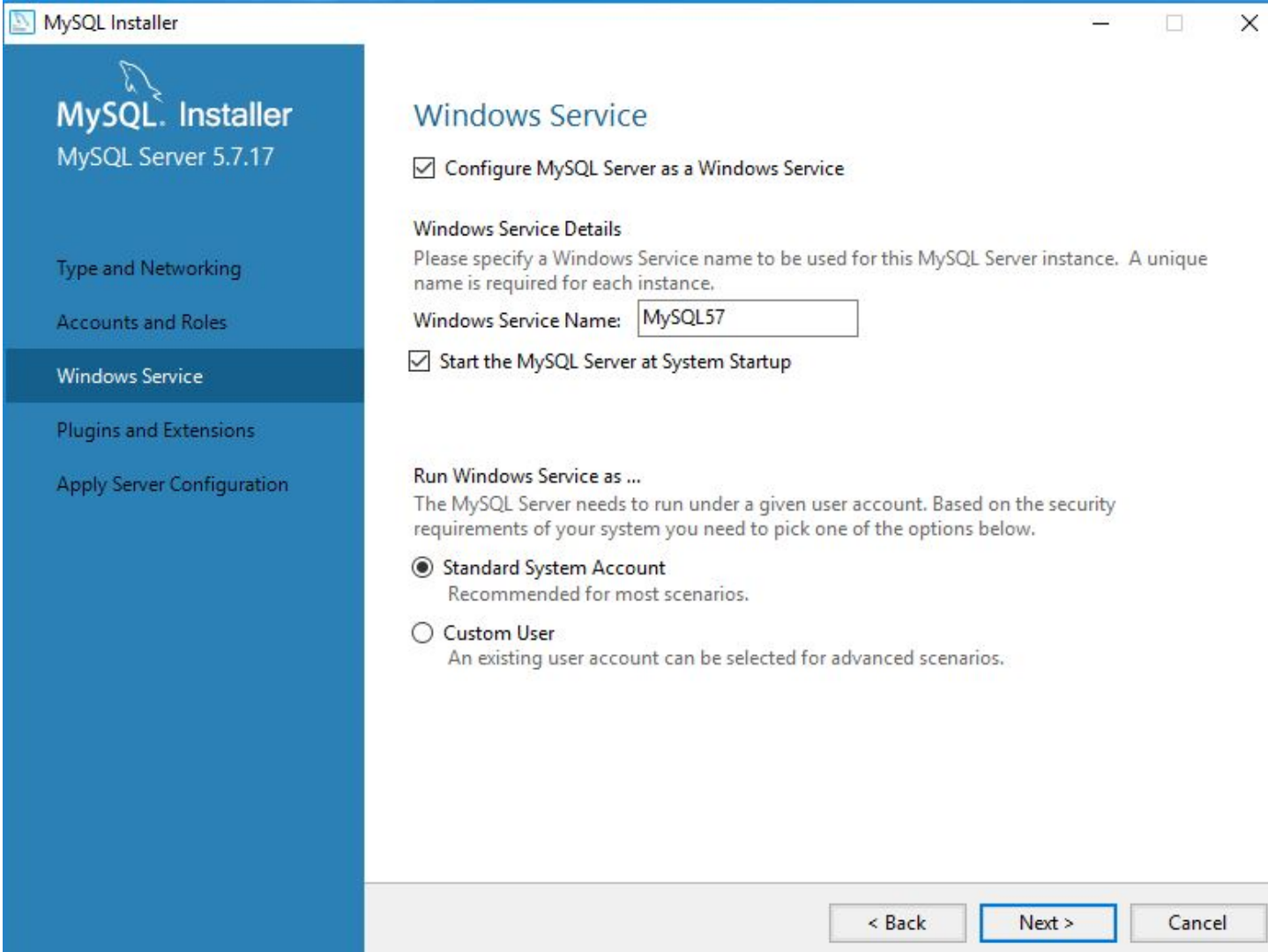
Delete

< Back   Next >   Cancel

Remember to  
store password  
(e.g., for starting  
MySQL in  
command line)



# MySQL Community Server Installation (4 / 5)

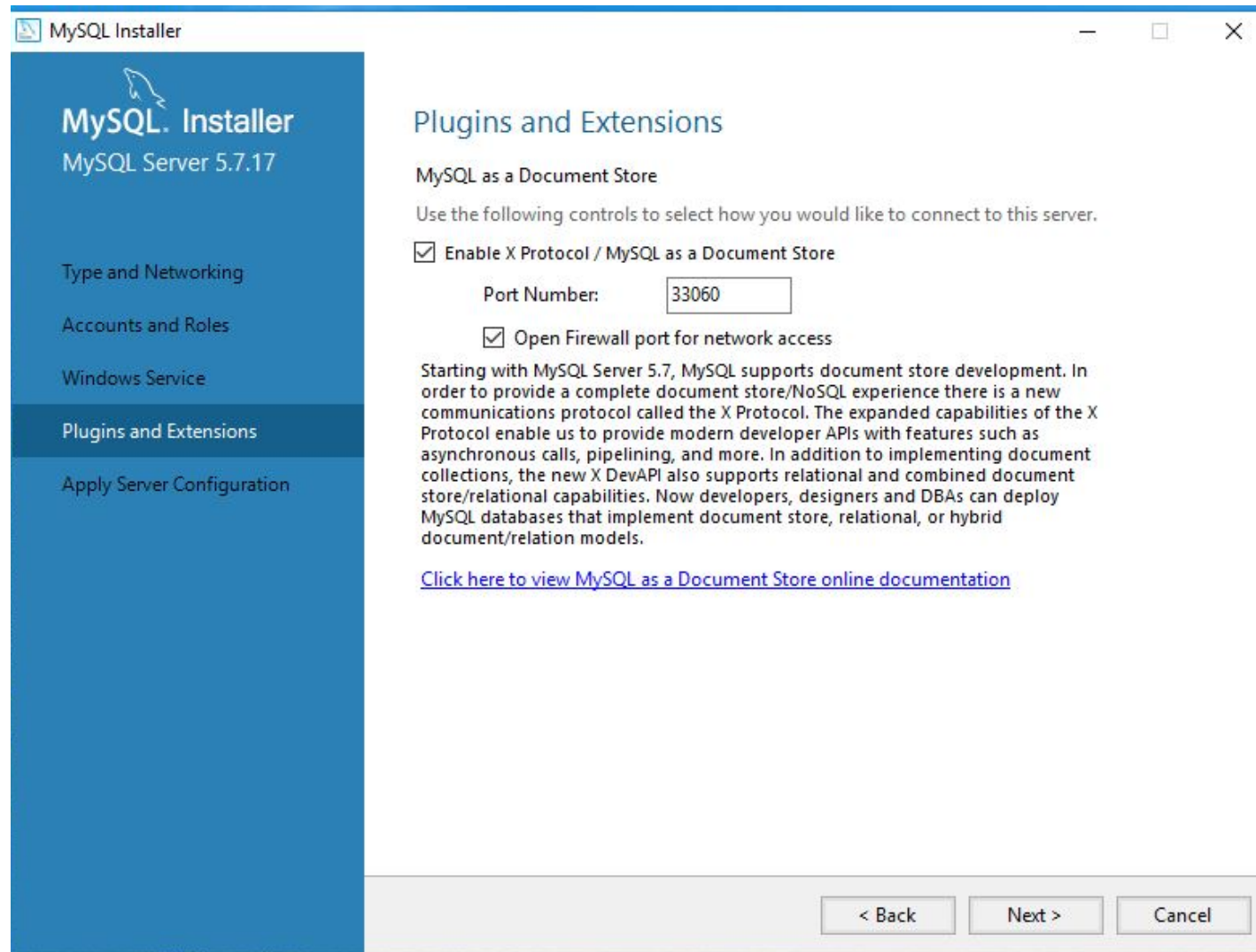


The screenshot shows the 'MySQL Installer' window for 'MySQL Server 5.7.17'. The left sidebar contains a list of configuration steps: 'Type and Networking', 'Accounts and Roles', 'Windows Service' (which is the active step), 'Plugins and Extensions', and 'Apply Server Configuration'. The main area is titled 'Windows Service' and contains the following options:

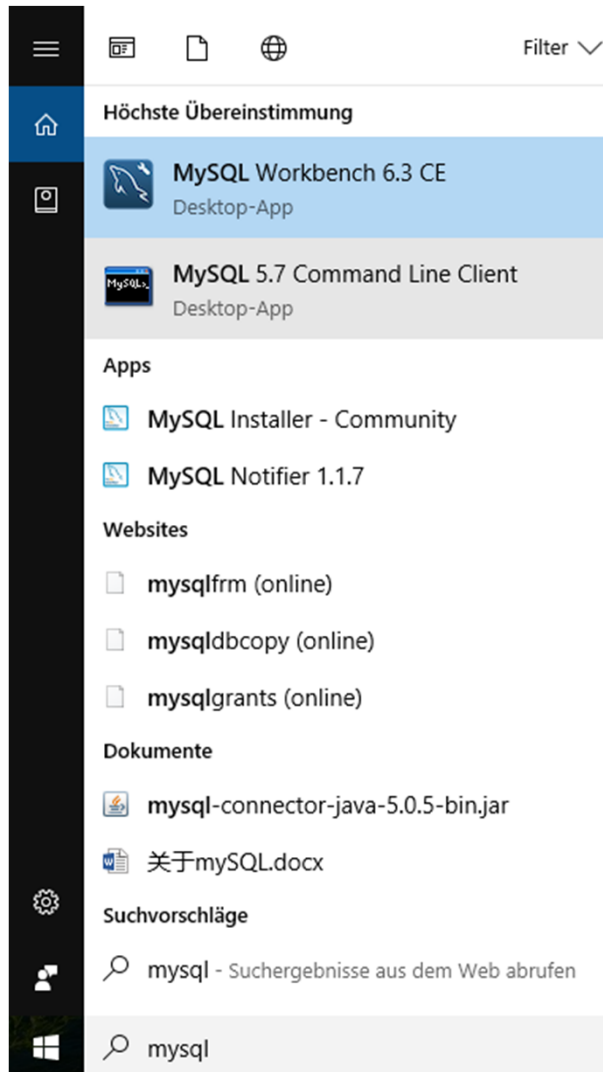
- ☒ Configure MySQL Server as a Windows Service
- Windows Service Details**  
Please specify a Windows Service name to be used for this MySQL Server instance. A unique name is required for each instance.  
Windows Service Name:
- ☒ Start the MySQL Server at System Startup
- Run Windows Service as ...**  
The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below.
  - ☒ **Standard System Account**  
Recommended for most scenarios.
  - ☐ Custom User  
An existing user account can be selected for advanced scenarios.

At the bottom right, there are three buttons: '< Back', 'Next >' (highlighted with a blue border), and 'Cancel'.

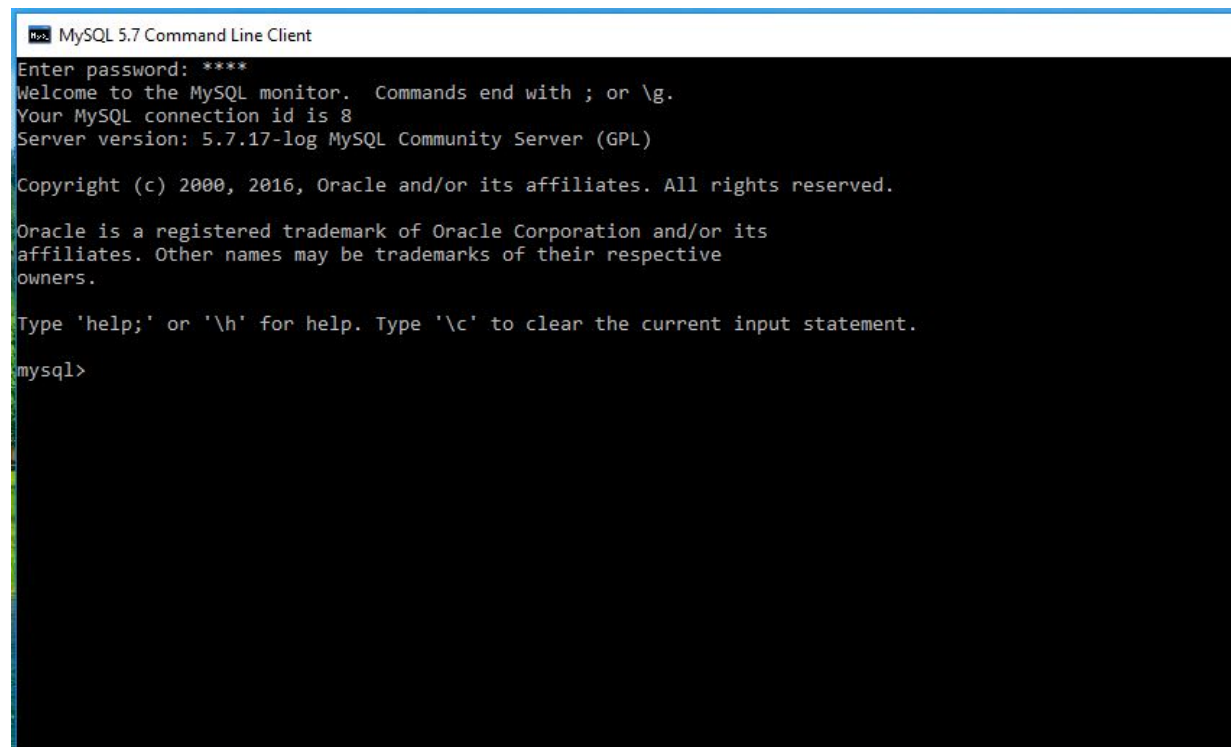
# MySQL Community Server Installation (5 / 5)



# Start MySQL Command Line Client

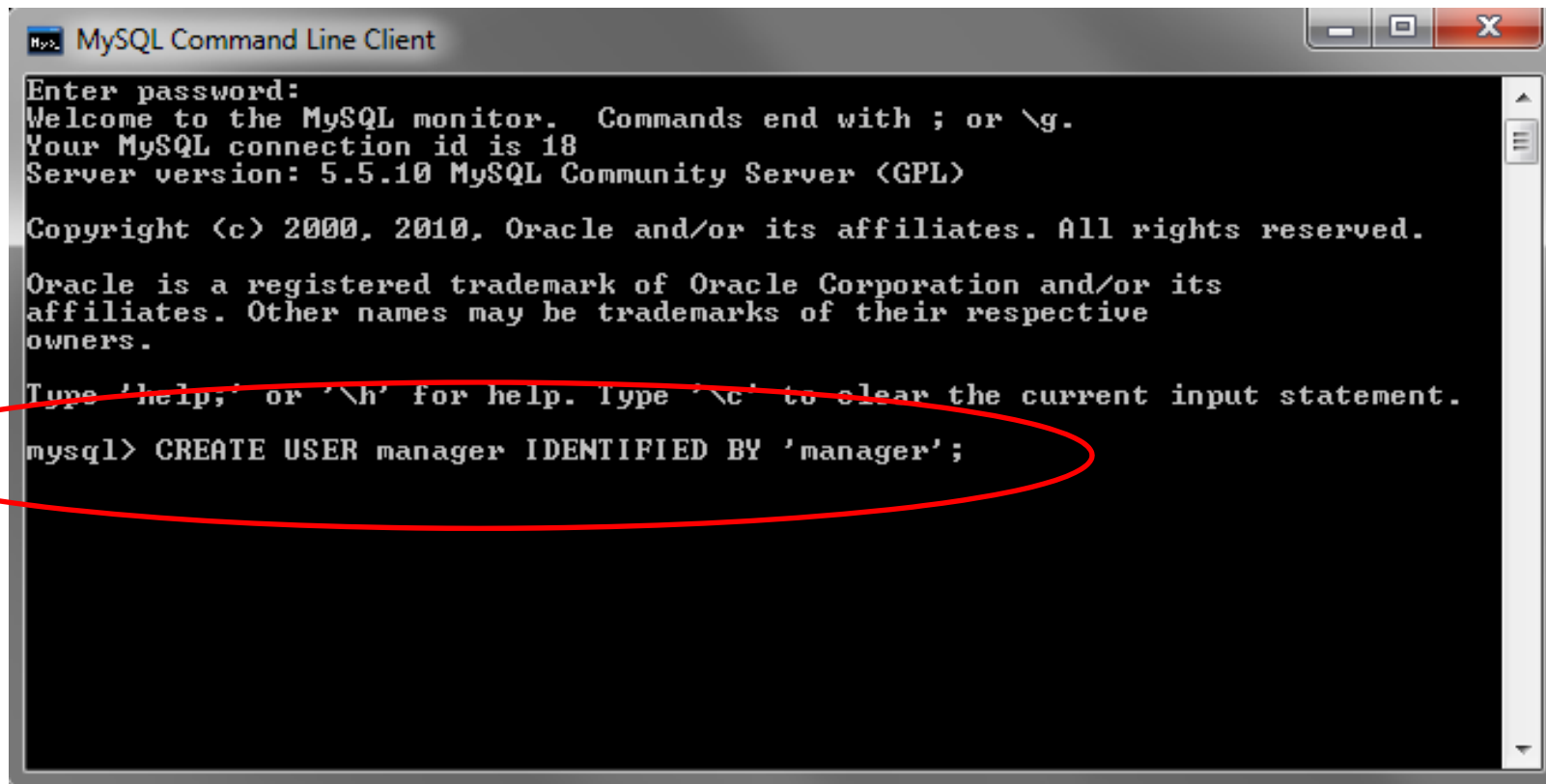


Find the MySQL 5.7 Command Line Client (in Start Menu) and enter your password



## Create User 'manager', in MySQL

- In the MySQL Command Line Client you have to create a user: **manager** with password: **manager** (see picture)



The screenshot shows a window titled "MySQL Command Line Client". The text inside the window is as follows:

```
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 18
Server version: 5.5.10 MySQL Community Server (GPL)

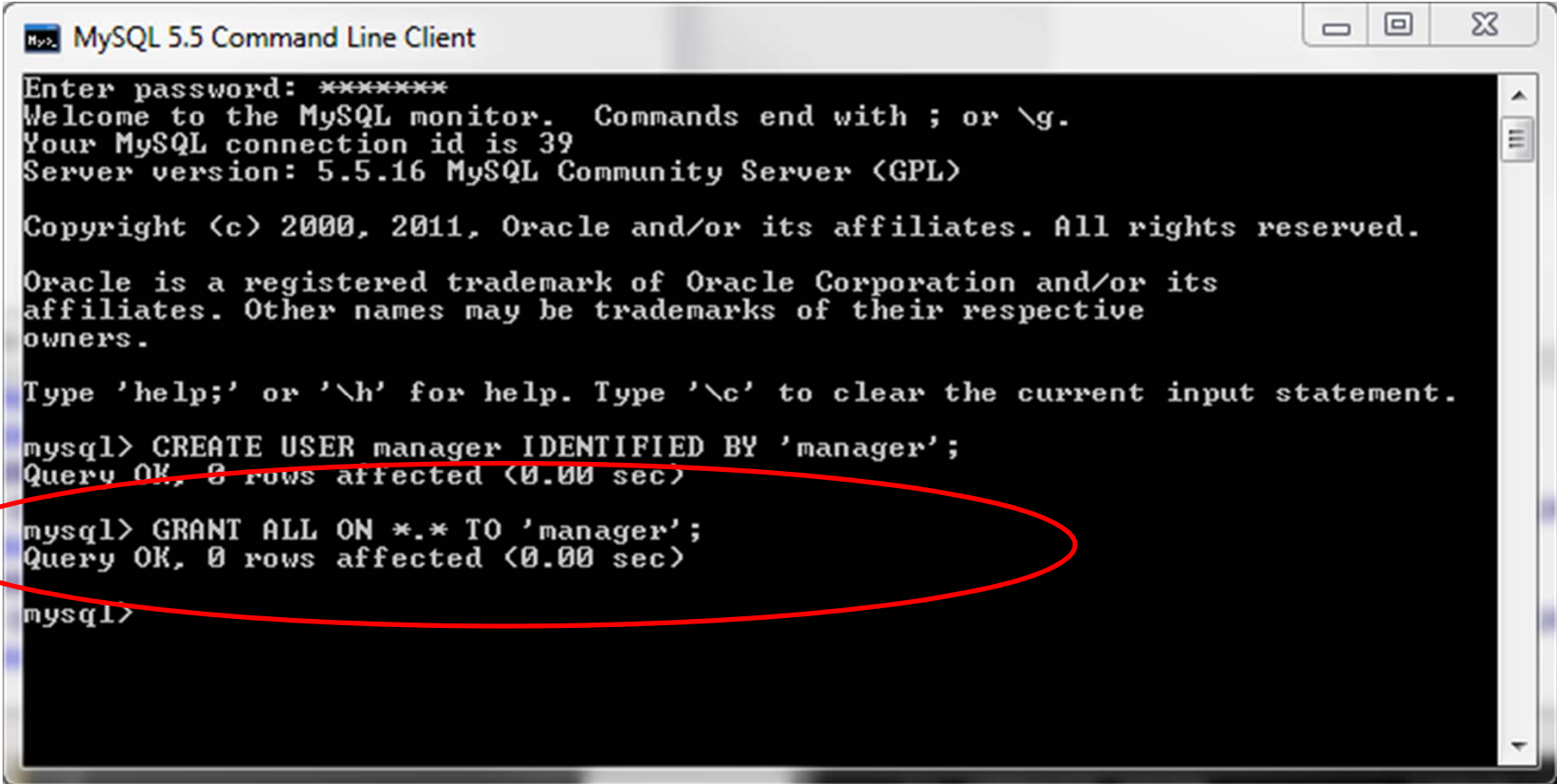
Copyright (c) 2000, 2010, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> CREATE USER manager IDENTIFIED BY 'manager';
```

A red oval is drawn around the command `mysql> CREATE USER manager IDENTIFIED BY 'manager';`.

# Grant (all) rights to 'manager' in MySQL



```
MySQL 5.5 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 39
Server version: 5.5.16 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE USER manager IDENTIFIED BY 'manager';
Query OK, 0 rows affected (0.00 sec)

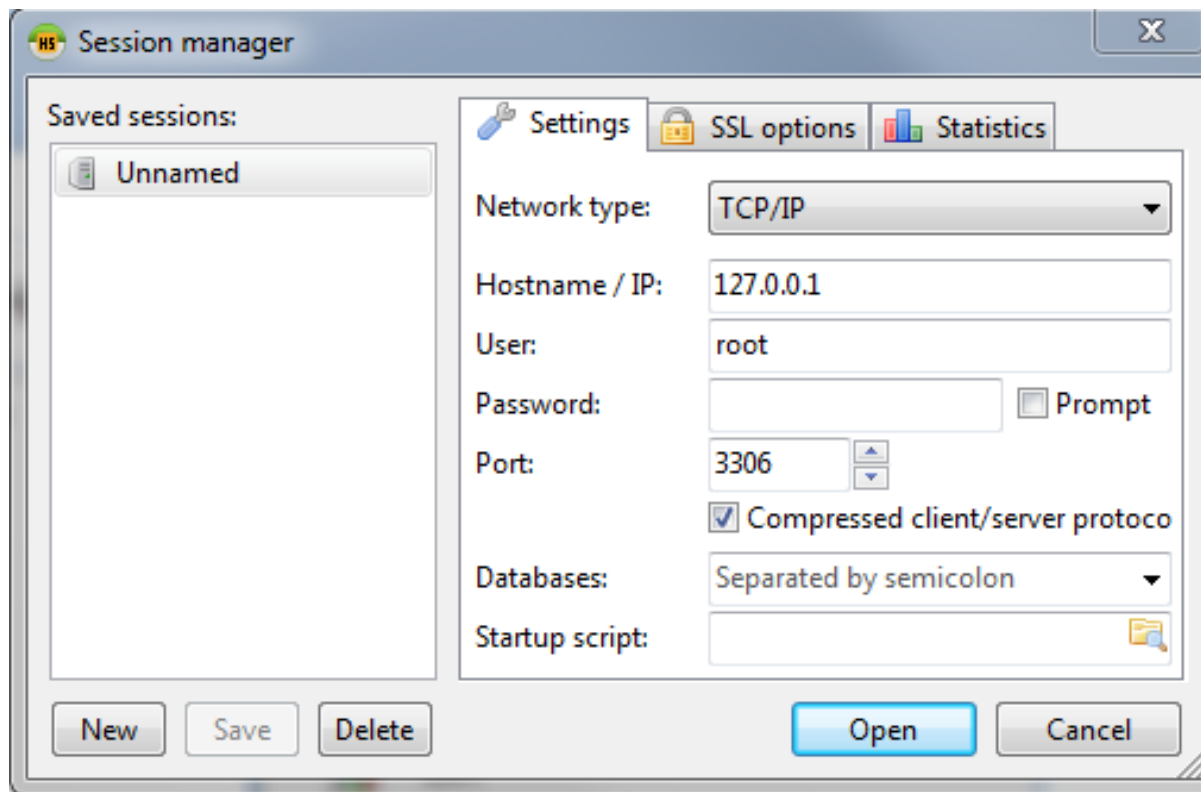
mysql> GRANT ALL ON *.* TO 'manager';
Query OK, 0 rows affected (0.00 sec)

mysql>
```

The screenshot shows a terminal window titled "MySQL 5.5 Command Line Client". It displays the MySQL command-line interface. The user has entered a password (masked with asterisks) and is now at the MySQL prompt. The output shows the MySQL version (5.5.16) and some copyright information. The user has entered two SQL commands: "CREATE USER manager IDENTIFIED BY 'manager';" and "GRANT ALL ON \*.\* TO 'manager';". Both commands were executed successfully, as indicated by the "Query OK" messages. The second command, "GRANT ALL ON \*.\* TO 'manager';", is circled in red in the original image.

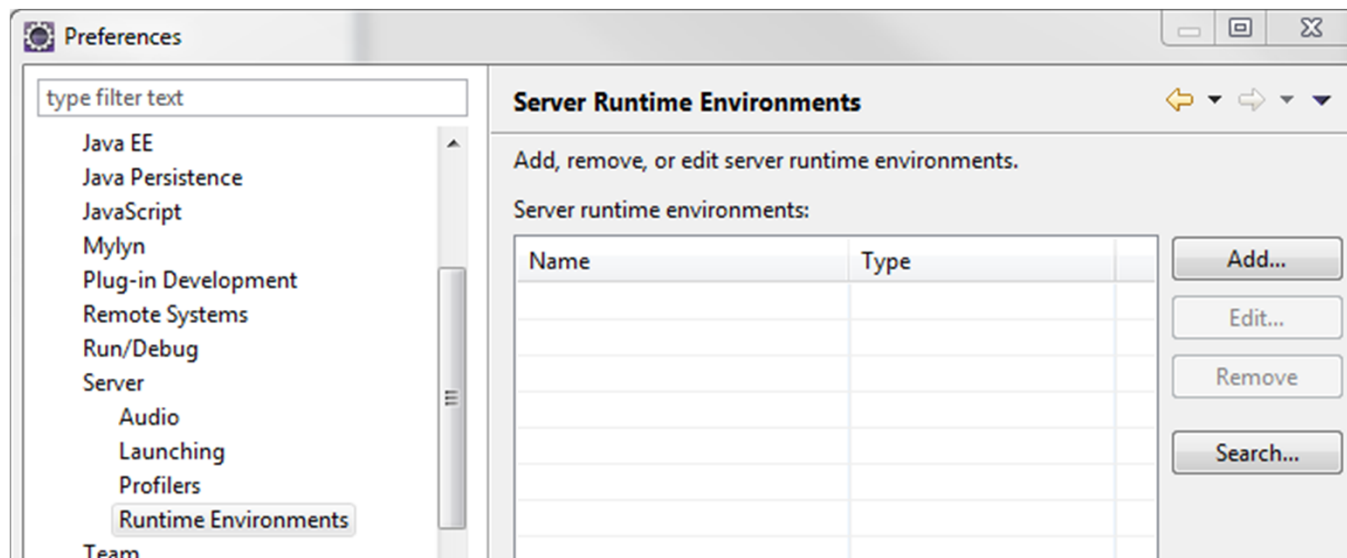
# MySQL GUI / Client: HeidiSQL

- After the installation of HeidiSQL, you can connect to your MySQL Database Server



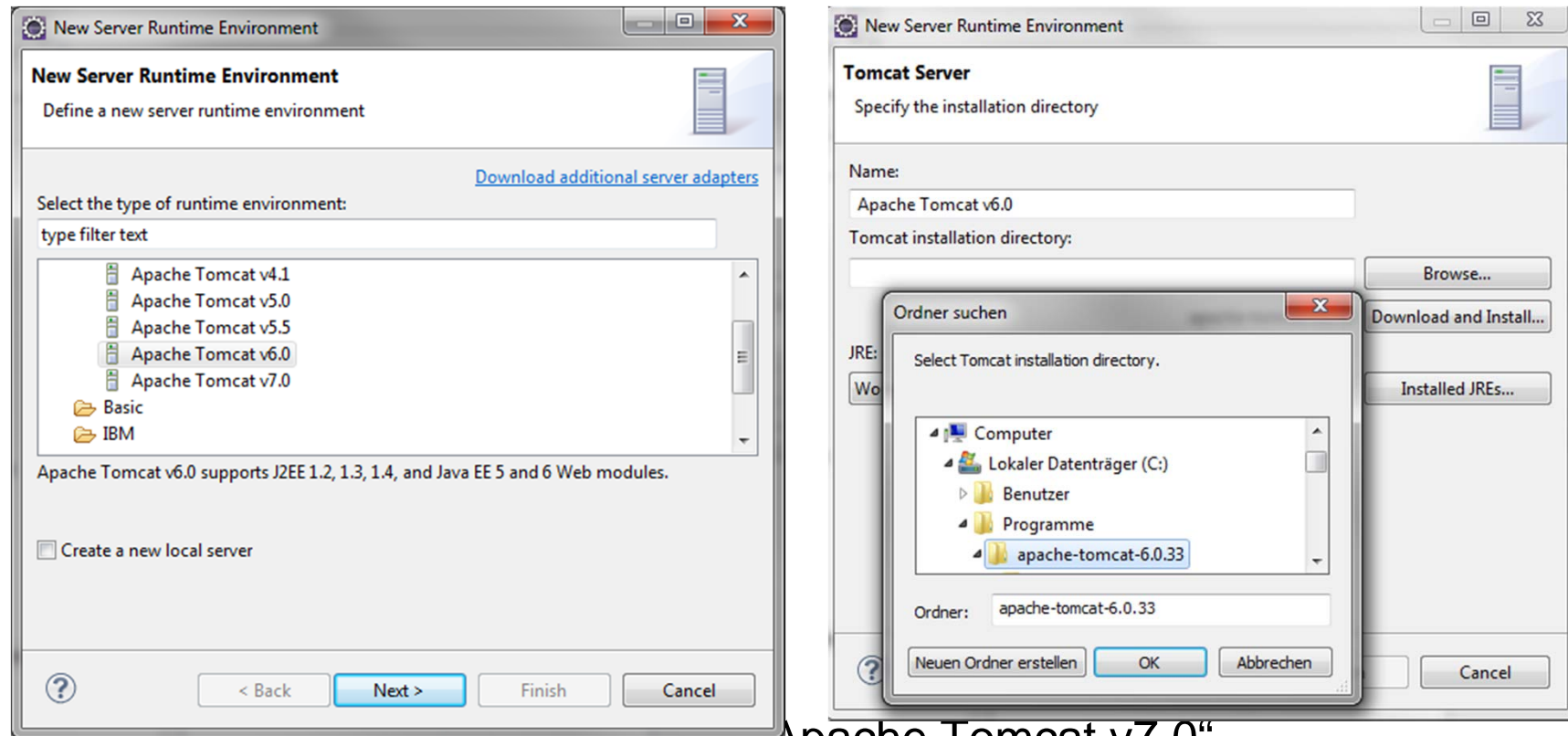
# Configuration of Eclipse

- Start Eclipse
- Add Tomcat Server 6 / 7
  - Click „Window > Preferences ...“,
  - Choose „Server > Runtime Environments“
  - and Click „Add...“.





# Configuration of Eclipse: Adding Tomcat Server ...

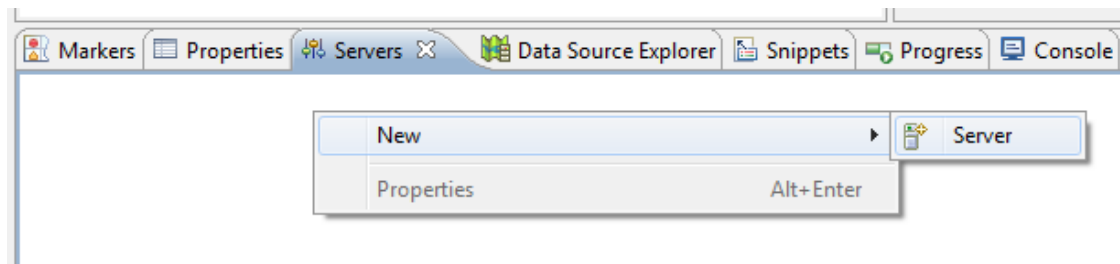


- Select „Apache Tomcat v6.0“ or „Apache Tomcat v7.0“
- If necessary, browse to the installation directory of the Tomcat Server
- Click „Finish“

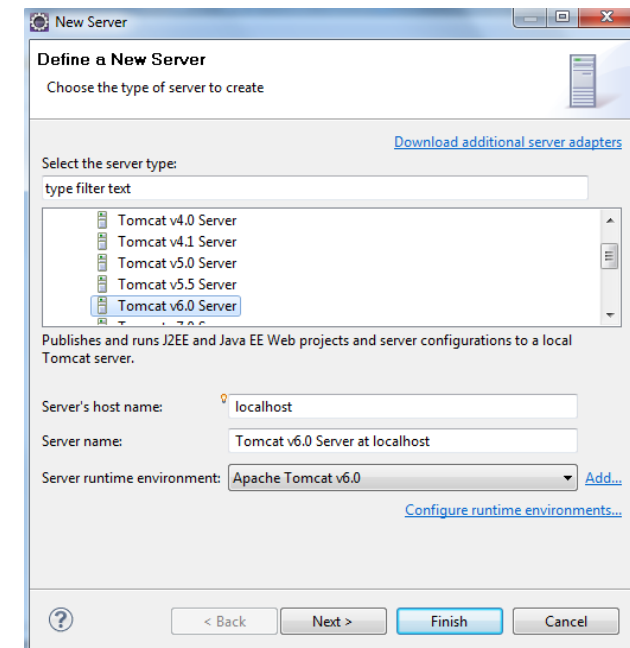
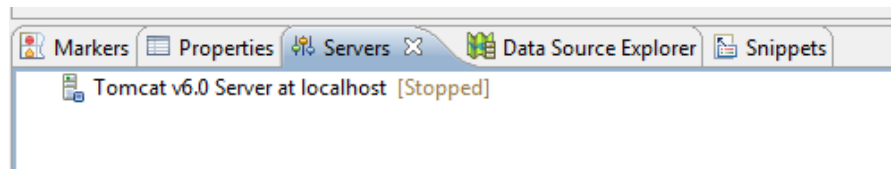


# Configuration of Eclipse: Adding Tomcat Server ...

- Add server to „Servers“ tab
  - If tab is not visible, change to JavaEE Perspective or click „Window >Show View->Other...“ > choose „Servers“ in directory „Server“ and click „OK“

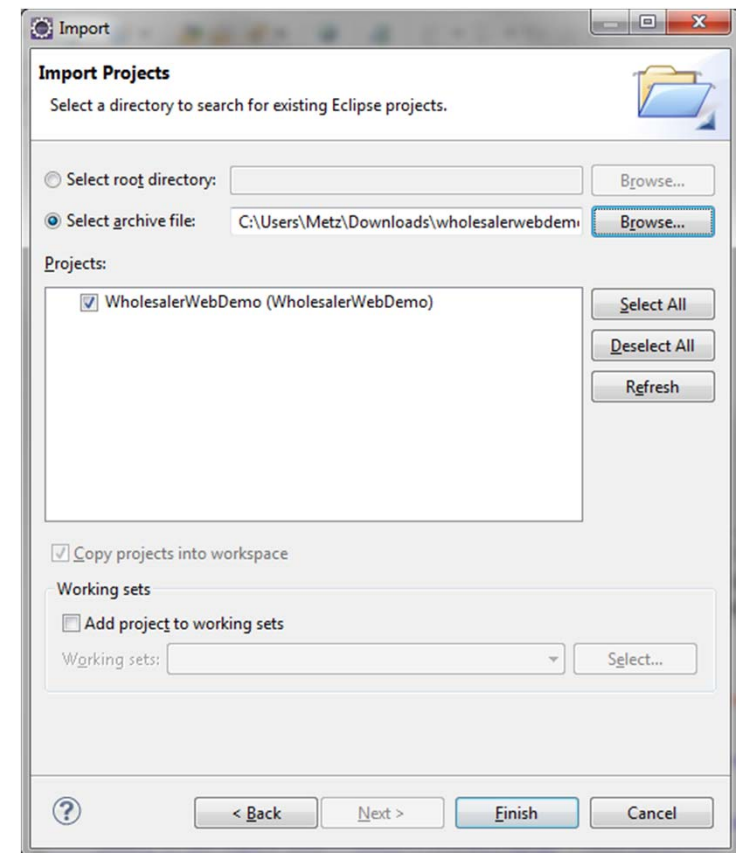


- Select „Tomcat v6.0 Server“ or „Tomcat v7.0 Server“
- Click „Finish“

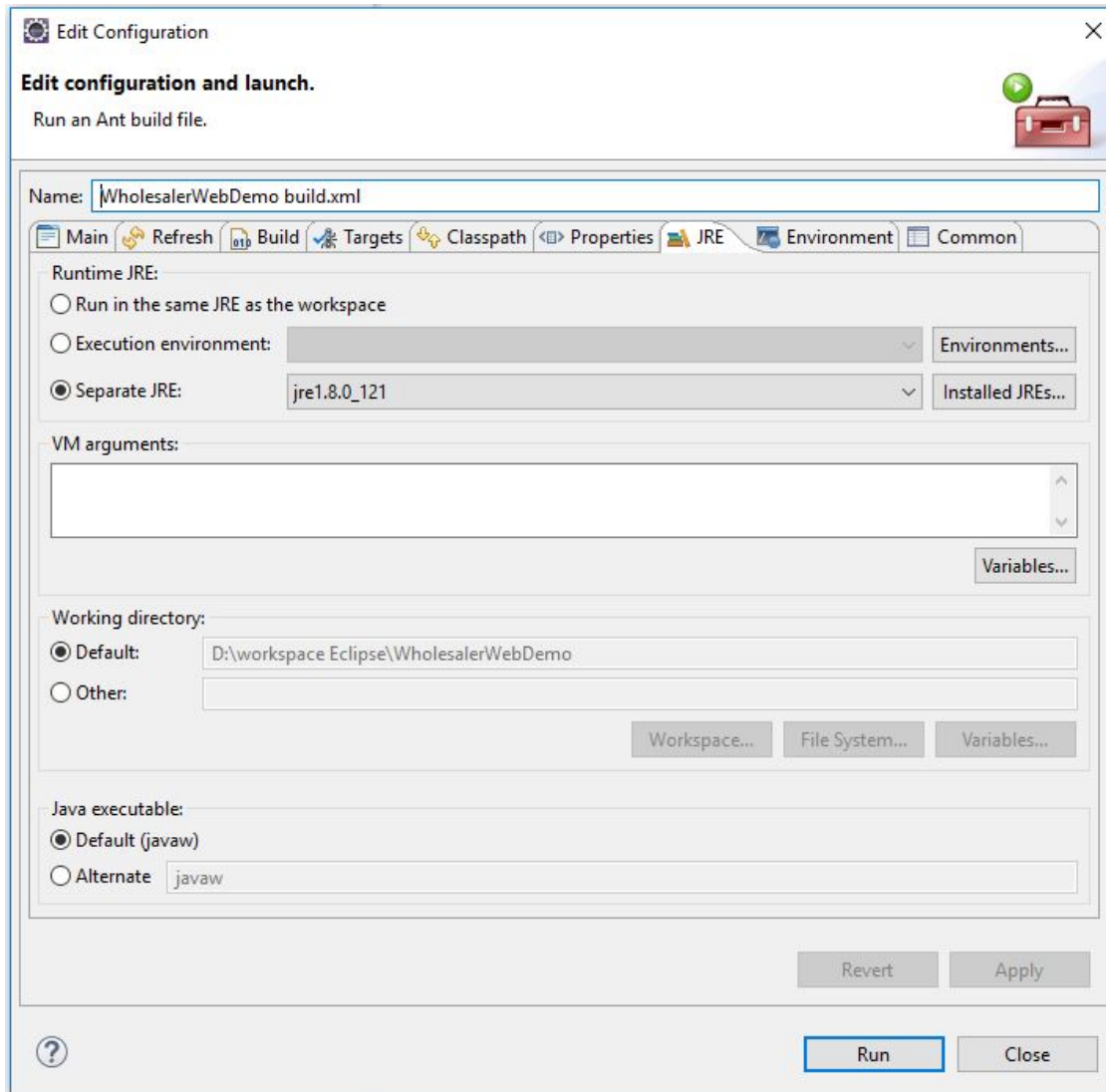


# Import of Web Demo Application Project into Eclipse

1. In Eclipse, click „File > Import“ and choose „General > Existing Projects into Workspace“
2. Select „Select archive file“ and choose the downloaded zipped project file „WholesalerWebDemo\_2.1.zip“

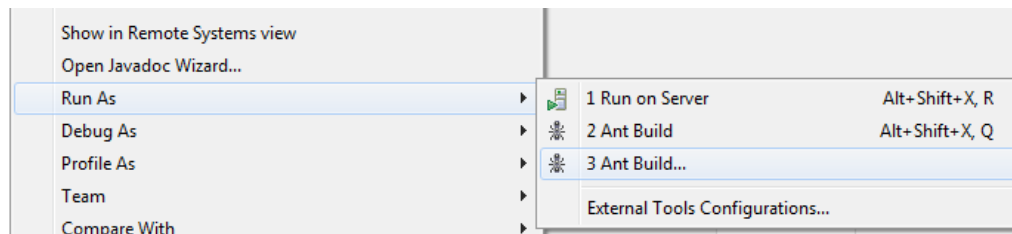


# Configuration of Ant in Eclipse

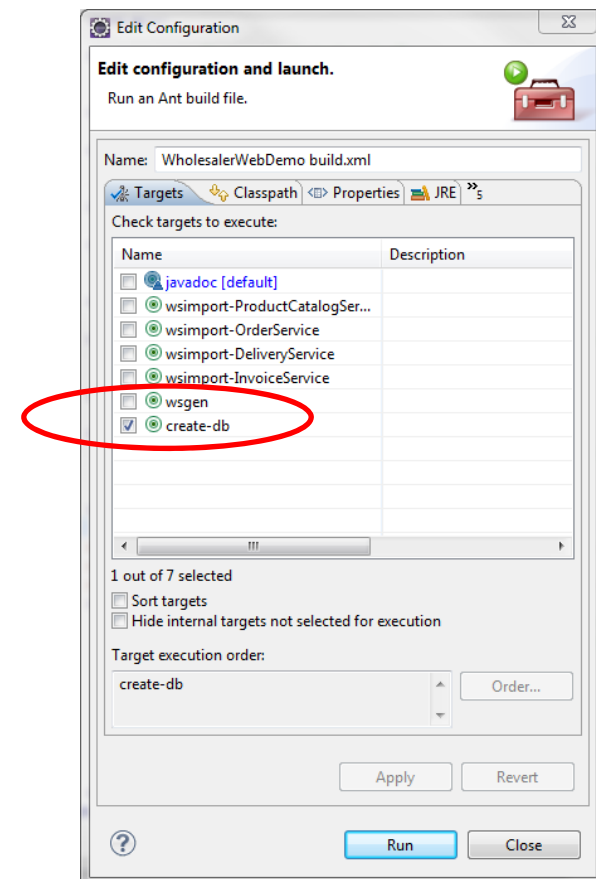
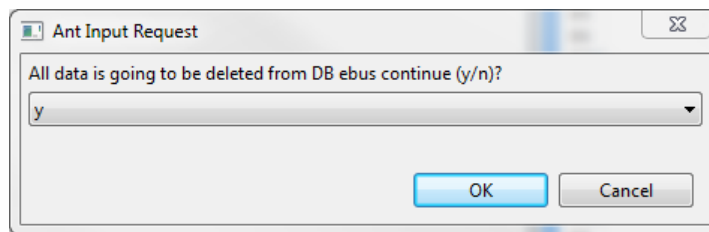


# Creation of Database „ebus“ in mySQL DBS: Running the Ant Script

1. Make Sure `../mysql/bin` is in your PATH (echo %PATH%)
2. Right click in project explorer on „build.xml“



3. Choose „Run As – Ant Build ...“
4. Select „create-db“
5. Choose „y“ and click „OK“

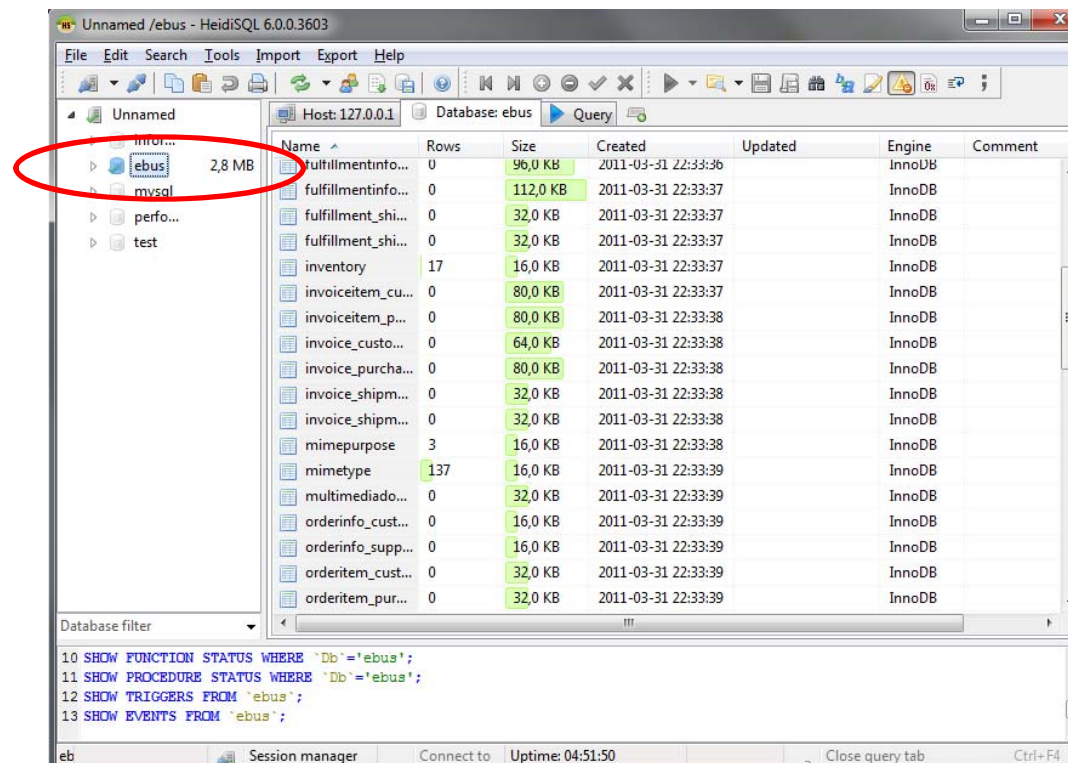


# Creation of Database „ebus“ in mySQL DBS: Database succesfully created

```

Markers Properties Servers Data Source Explorer Snippets Progress Console
<terminated> WholesalerWebDemo build.xml [Ant Build] C:\Program Files\Java\jre6\bin\javaw.exe (29.02.2012 14:01:17)
Buildfile: C:\workspace\WholesalerWebDemo\build.xml
create-db:
[echo] Starting example database table generation
[exec] C:\workspace\WholesalerWebDemo\install>mysqladmin --host=localhost --user=manager --password=manager drop ebus -f
[exec] Database "ebus" dropped
[exec] C:\workspace\WholesalerWebDemo\install>mysqladmin --host=localhost --user=manager --password=manager create ebus
[exec] C:\workspace\WholesalerWebDemo\install>mysql --host=localhost --user=manager --password=manager --database=ebus 0<ebus.sql
BUILD SUCCESSFUL
Total time: 27 seconds

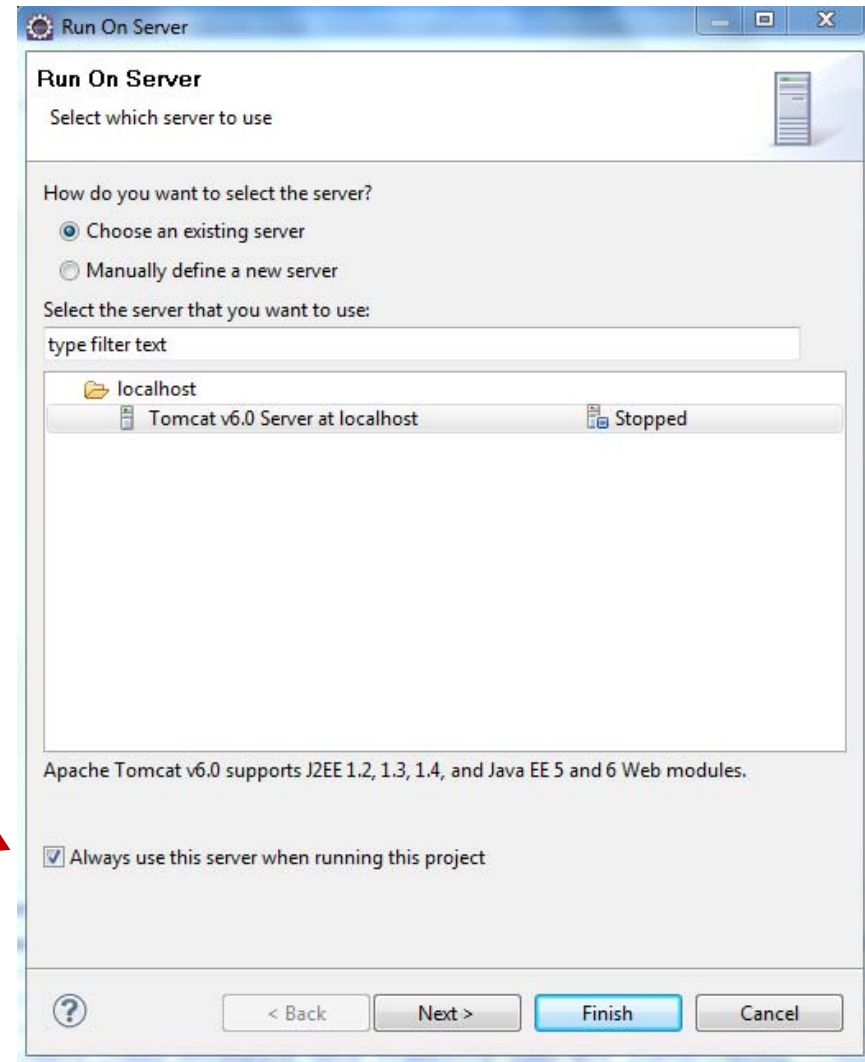
```



Name	Rows	Size	Created	Updated	Engine	Comment
fulfillmentinfo...	0	96,0 KB	2011-03-31 22:33:36		InnoDB	
fulfillmentinfo...	0	112,0 KB	2011-03-31 22:33:37		InnoDB	
fulfillment_shi...	0	32,0 KB	2011-03-31 22:33:37		InnoDB	
fulfillment_shi...	0	32,0 KB	2011-03-31 22:33:37		InnoDB	
inventory	17	16,0 KB	2011-03-31 22:33:37		InnoDB	
invoiceitem_cu...	0	80,0 KB	2011-03-31 22:33:37		InnoDB	
invoiceitem_p...	0	80,0 KB	2011-03-31 22:33:38		InnoDB	
invoice_custo...	0	64,0 KB	2011-03-31 22:33:38		InnoDB	
invoice_purcha...	0	80,0 KB	2011-03-31 22:33:38		InnoDB	
invoice_shipm...	0	32,0 KB	2011-03-31 22:33:38		InnoDB	
invoice_shipm...	0	32,0 KB	2011-03-31 22:33:38		InnoDB	
mimepurpose	3	16,0 KB	2011-03-31 22:33:38		InnoDB	
mimetype	137	16,0 KB	2011-03-31 22:33:39		InnoDB	
multimediado...	0	32,0 KB	2011-03-31 22:33:39		InnoDB	
orderinfo_cust...	0	16,0 KB	2011-03-31 22:33:39		InnoDB	
orderinfo_supp...	0	16,0 KB	2011-03-31 22:33:39		InnoDB	
orderitem_cust...	0	32,0 KB	2011-03-31 22:33:39		InnoDB	
orderitem_pur...	0	32,0 KB	2011-03-31 22:33:39		InnoDB	

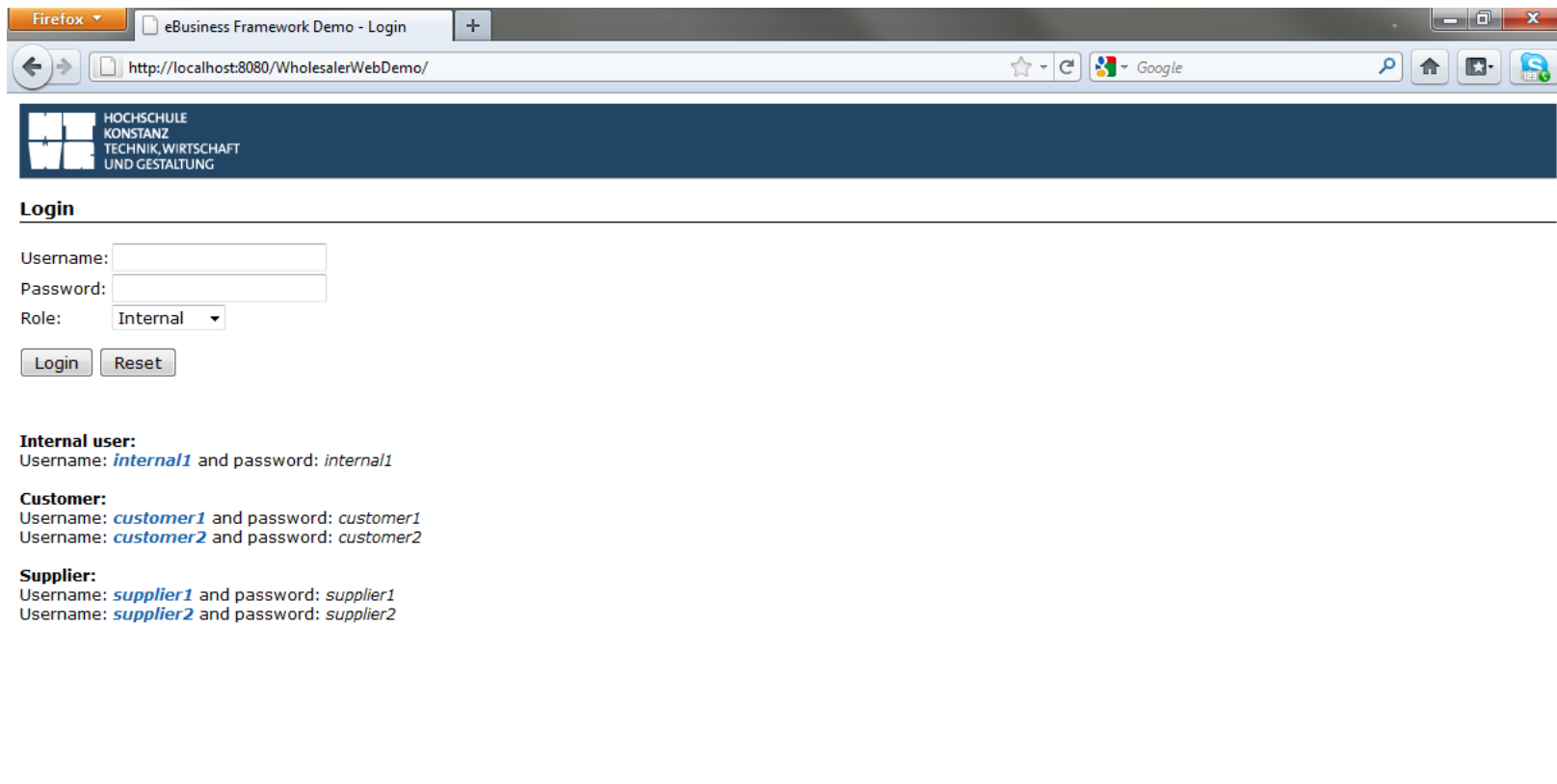
# Start of the „Web Demo Application“ in Eclipse

- Right click on the Java project and choose „Run As > Run On Server“
- Choose the Tomcat server to be used
- Optional: Activate „Always use this server ...“
- Click on „Finish“



# Start of the „Web Demo Application“ in Eclipse

- The Web Demo Application Login Screen after Successful Start



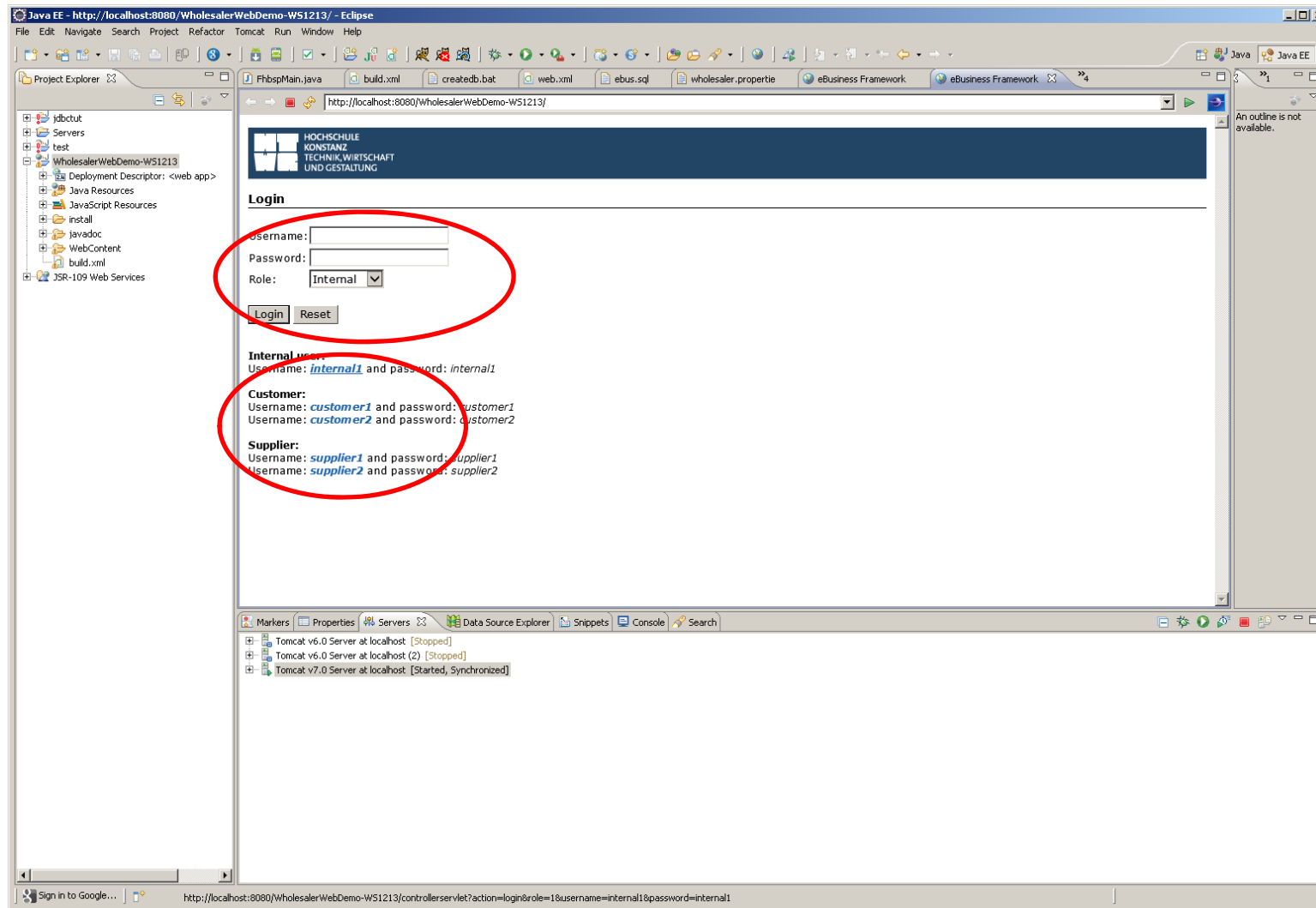
The screenshot shows a Firefox browser window titled "eBusiness Framework Demo - Login". The address bar displays "http://localhost:8080/WholesalerWebDemo/". The page features a dark blue header with the HTWG Konstanz logo and the text "HOCHSCHULE KONSTANZ TECHNIK, WIRTSCHAFT UND GESTALTUNG". Below the header, the "Login" section contains the following form elements:

- Username:** A text input field.
- Password:** A text input field.
- Role:** A dropdown menu currently set to "Internal".
- Login:** A button.
- Reset:** A button.

Below the login form, there are three sections of user credentials:

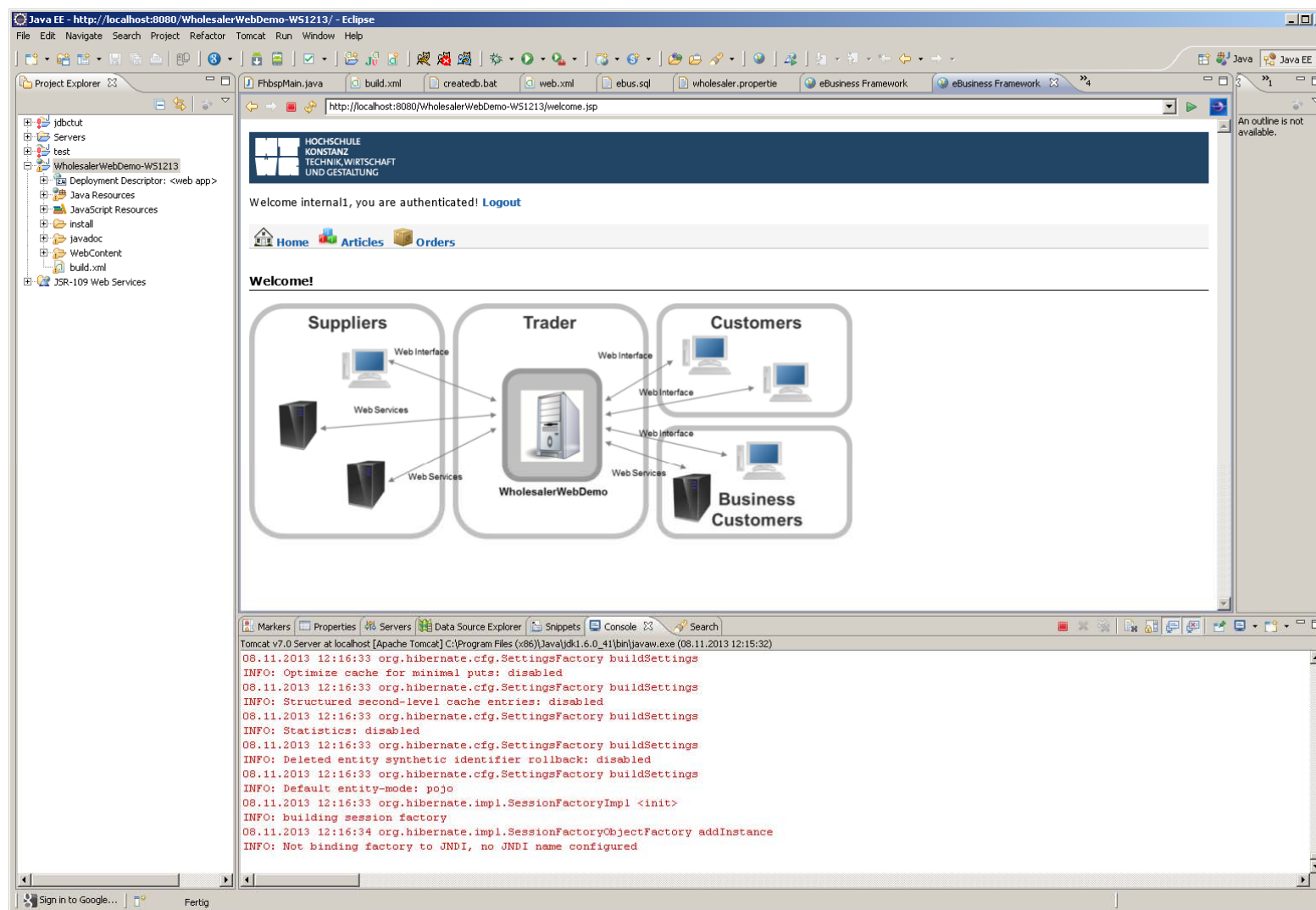
- Internal user:** Username: *internal1* and password: *internal1*
- Customer:** Username: *customer1* and password: *customer1*  
Username: *customer2* and password: *customer2*
- Supplier:** Username: *supplier1* and password: *supplier1*  
Username: *supplier2* and password: *supplier2*

# Login (Shortcuts can be used)





# Home Screen of the Web Demo Application

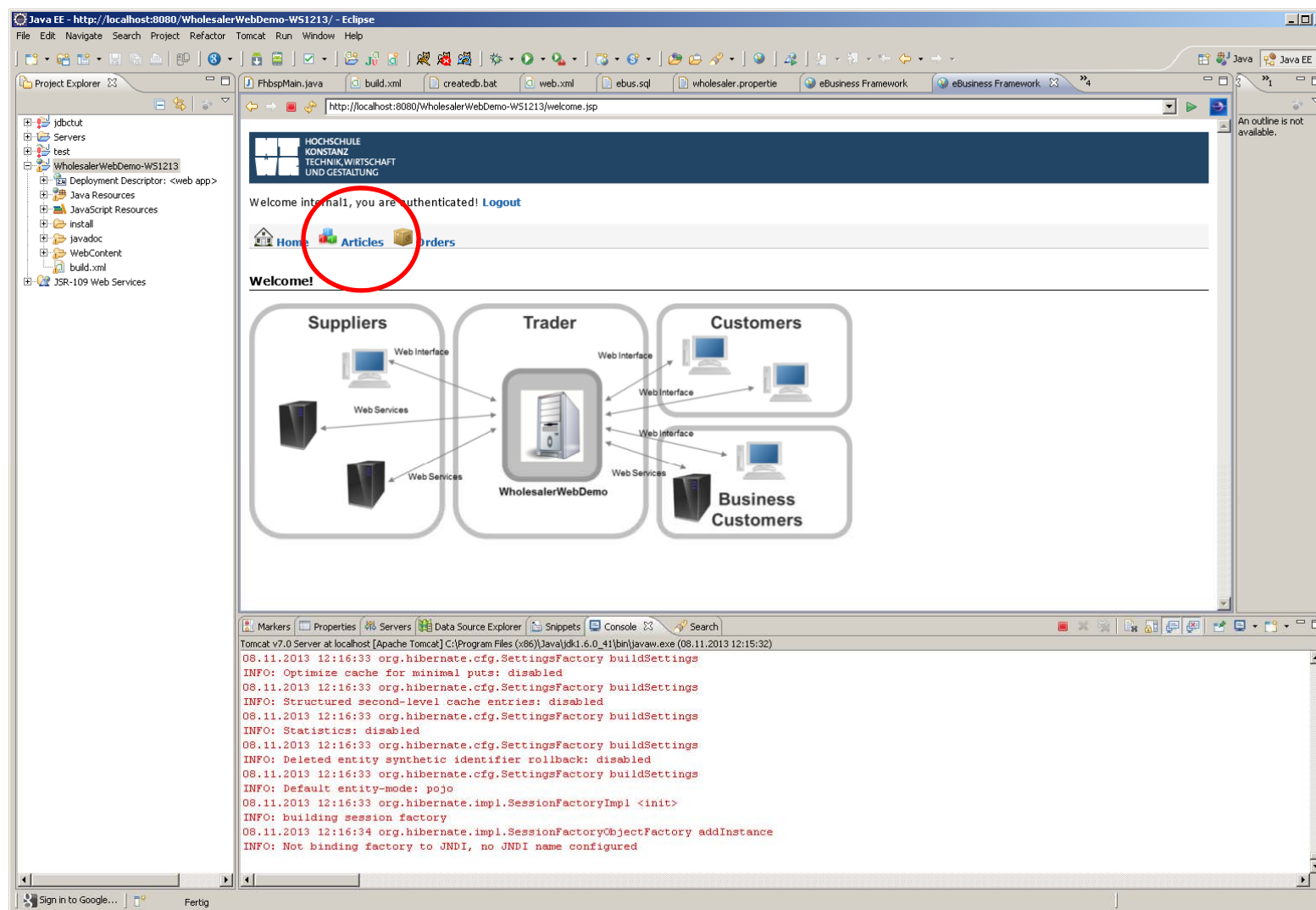


The screenshot shows a web browser window displaying the home screen of the WholesalerWebDemo application. The browser's address bar shows the URL: `http://localhost:8080/WholesalerWebDemo-WS1213/welcome.jsp`. The page header includes the logo of Hochschule Konstanz Technik, Wirtschaft und Gestaltung. Below the header, a message reads: "Welcome internal1, you are authenticated! [Logout](#)". Navigation links for "Home", "Articles", and "Orders" are present. The main content area features a diagram illustrating the system architecture. The diagram shows a central "WholesalerWebDemo" server box. To its left, under the heading "Suppliers", are two server boxes connected to the central server via "Web Services" and "Web Interface". To the right, under the heading "Customers", are two server boxes (one labeled "Business Customers") connected to the central server via "Web Services" and "Web Interface". The bottom of the browser window displays the Tomcat console output, showing logs for Hibernate configuration and session factory initialization.

```

Tomcat v7.0 Server at localhost [Apache Tomcat] C:\Program Files (x86)\Java\jdk1.6.0_41\bin\javaw.exe (08.11.2013 12:15:32)
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Optimize cache for minimal puts: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Structured second-level cache entries: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Statistics: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Deleted entity synthetic identifier rollback: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Default entity-mode: pojo
08.11.2013 12:16:33 org.hibernate.impl.SessionFactoryImpl <init>
INFO: building session factory
08.11.2013 12:16:34 org.hibernate.impl.SessionFactoryObjectFactory addInstance
INFO: Not binding factory to JNDI, no JNDI name configured
  
```

# Change to Articles Screen



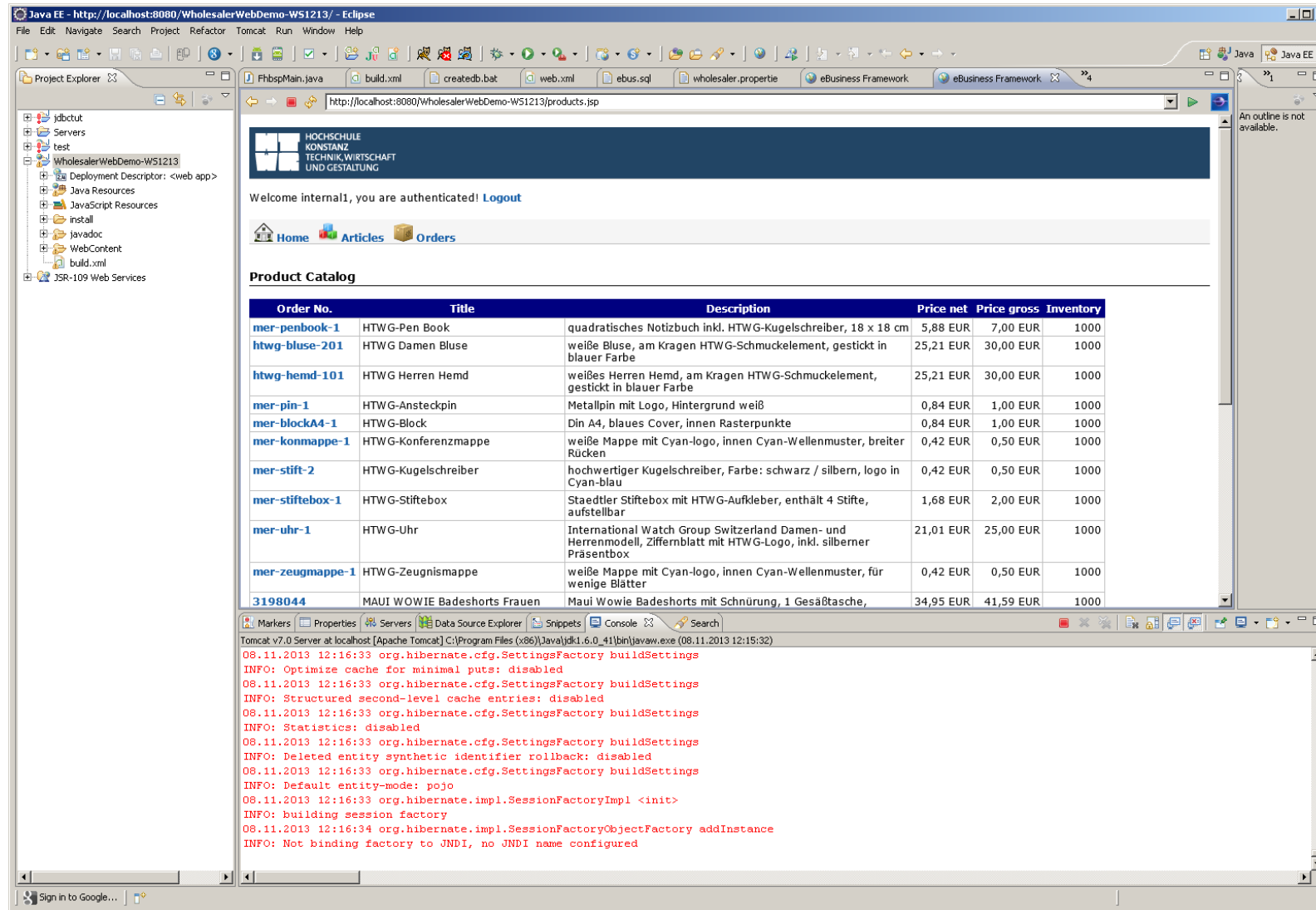
The screenshot shows a web browser window with the URL `http://localhost:8080/WholesalerWebDemo-WS1213/welcome.jsp`. The page header includes the logo of Hochschule Konstanz Technik, Wirtschaft und Gestaltung. Below the header, a navigation bar contains links for Home, Articles (circled in red), and Orders. The main content area displays a welcome message and a diagram illustrating the system architecture. The diagram shows a central 'WholesalerWebDemo' component connected to 'Suppliers', 'Trader', and 'Customers'. Each component has a 'Web Interface' and 'Web Services' icon. The 'Trader' component is also connected to 'Business Customers'.

The bottom of the browser window shows the Tomcat v7.0 Server log output:

```

Tomcat v7.0 Server at localhost [Apache Tomcat] C:\Program Files (x86)\Java\jdk1.6.0_41\bin\javaw.exe (08.11.2013 12:15:32)
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Optimize cache for minimal puts: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Structured second-level cache entries: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Statistics: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Deleted entity synthetic identifier rollback: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Default entity-mode: pojo
08.11.2013 12:16:33 org.hibernate.impl.SessionFactoryImpl <init>
INFO: building session factory
08.11.2013 12:16:34 org.hibernate.impl.SessionFactoryObjectFactory addInstance
INFO: Not binding factory to JNDI, no JNDI name configured
  
```

# Articles Screen



Java EE - http://localhost:8080/WholesalerWebDemo-WS1213/ - Eclipse

File Edit Navigate Search Project Refactor Tomcat Run Window Help

Project Explorer

WholesalerWebDemo-WS1213

Deployment Descriptor: <web app>

Java Resources

JavaScript Resources

install

WebContent

build.xml

JSR-109 Web Services

PhibspMain.java build.xml createdb.bat web.xml ebus.sql wholesaler.properties eBusiness Framework eBusiness Framework

http://localhost:8080/WholesalerWebDemo-WS1213/products.jsp

HOCHSCHULE KONSTANZ TECHNISCHE WIRTSCHAFT UND GESTALTUNG

Welcome internal1, you are authenticated! [Logout](#)

[Home](#) [Articles](#) [Orders](#)

**Product Catalog**

Order No.	Title	Description	Price net	Price gross	Inventory
<a href="#">mer-penbook-1</a>	HTWG-Pen Book	quadratisches Notizbuch inkl. HTWG-Kugelschreiber, 18 x 18 cm	5,88 EUR	7,00 EUR	1000
<a href="#">htwg-bluse-201</a>	HTWG Damen Bluse	weiße Bluse, am Kragen HTWG-Schmuckelement, gestickt in blauer Farbe	25,21 EUR	30,00 EUR	1000
<a href="#">htwg-hemd-101</a>	HTWG Herren Hemd	weißes Herren Hemd, am Kragen HTWG-Schmuckelement, gestickt in blauer Farbe	25,21 EUR	30,00 EUR	1000
<a href="#">mer-pin-1</a>	HTWG-Ansteckpin	Metallpin mit Logo, Hintergrund weiß	0,84 EUR	1,00 EUR	1000
<a href="#">mer-blockA4-1</a>	HTWG-Block	Din A4, blaues Cover, innen Rasterpunkte	0,84 EUR	1,00 EUR	1000
<a href="#">mer-konmappe-1</a>	HTWG-Konferenzmappe	weiße Mappe mit Cyan-logo, innen Cyan-Wellenmuster, breiter Rücken	0,42 EUR	0,50 EUR	1000
<a href="#">mer-stift-2</a>	HTWG-Kugelschreiber	hochwertiger Kugelschreiber, Farbe: schwarz / silbern, logo in Cyan-blau	0,42 EUR	0,50 EUR	1000
<a href="#">mer-stiftebox-1</a>	HTWG-Stiftebox	Staedtler Stiftebox mit HTWG-Aufkleber, enthält 4 Stifte, aufstellbar	1,68 EUR	2,00 EUR	1000
<a href="#">mer-uhr-1</a>	HTWG-Uhr	International Watch Group Switzerland Damen- und Herrenmodell, Ziffernblatt mit HTWG-Logo, inkl. silberner Präsentbox	21,01 EUR	25,00 EUR	1000
<a href="#">mer-zeugmappe-1</a>	HTWG-Zeugnismappe	weiße Mappe mit Cyan-logo, innen Cyan-Wellenmuster, für wenige Blätter	0,42 EUR	0,50 EUR	1000
<a href="#">3198044</a>	MAUI WOWIE Badeshorts Frauen	Maui Wowie Badeshorts mit Schnürung, 1 Gesäßtasche,	34,95 EUR	41,59 EUR	1000

Markers Properties Servers Data Source Explorer Snippets Console Search

Tomcat v7.0 Server at localhost [Apache Tomcat] C:\Program Files (x86)\Java\jdk1.6.0\_41\bin\javaw.exe (08.11.2013 12:15:32)

```

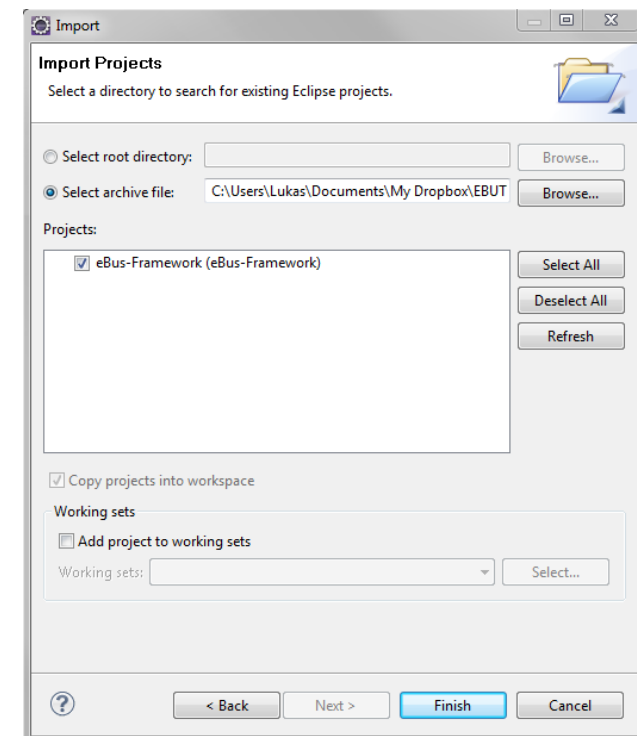
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Optimise cache for minimal puts: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Structured second-level cache entries: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Statistics: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Deleted entity synthetic identifier rollback: disabled
08.11.2013 12:16:33 org.hibernate.cfg.SettingsFactory buildSettings
INFO: Default entity-mode: pojo
08.11.2013 12:16:33 org.hibernate.impl.SessionFactoryImpl <init>
INFO: building session factory
08.11.2013 12:16:34 org.hibernate.impl.SessionFactoryObjectFactory addInstance
INFO: Not binding factory to JNDI, no JNDI name configured
  
```

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# Import of the "E-Business Framework 2.1" Project

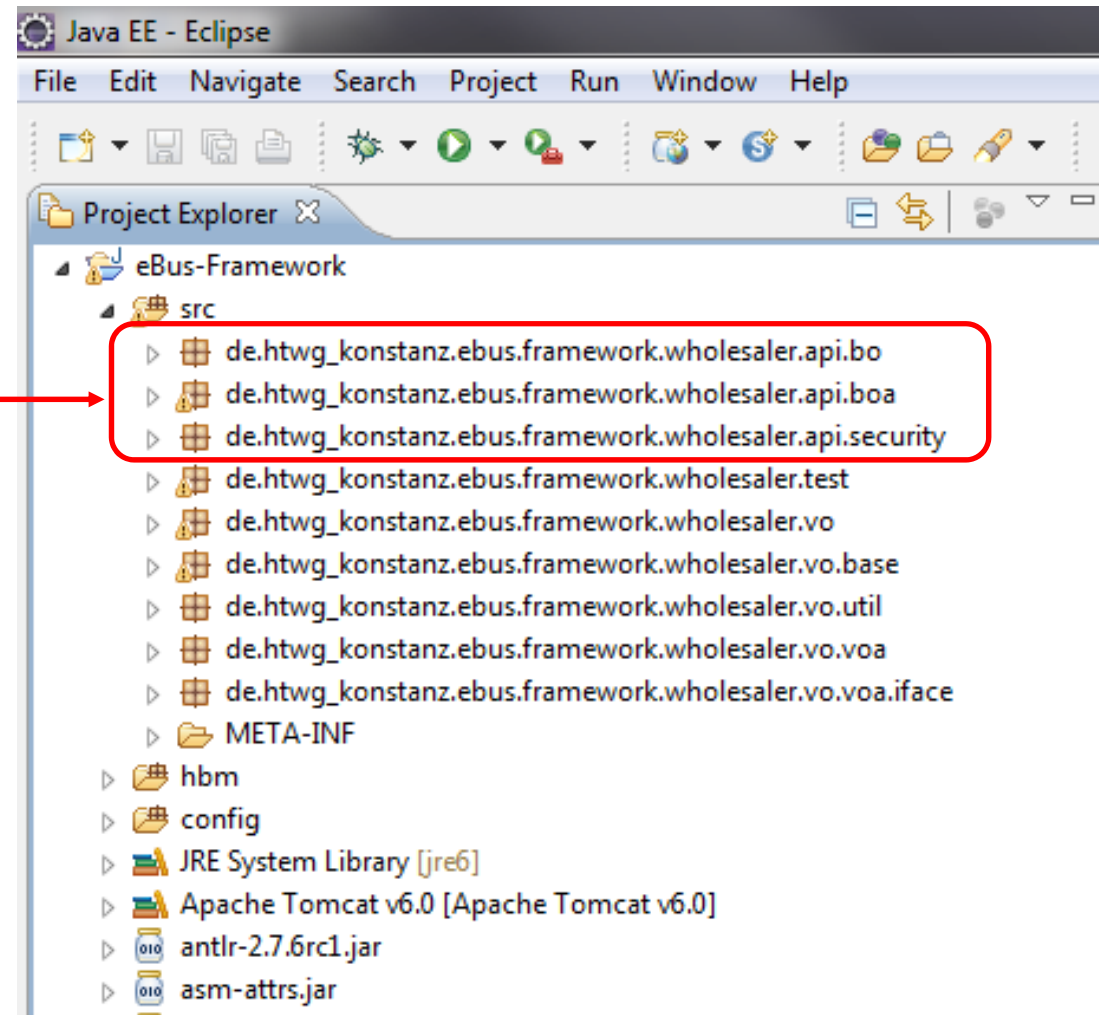
**Import is not necessary but useful if you wish to know how the E-Business Software Framework works**

1. In Eclipse Click „File > Import“ and choose „General > Existing Projects into Workspace“
2. Select „Select archive file“ and choose the downloaded zipped project file „EBUS-Framework-2.1.1.0.zip“



# E-Business Software Framework in Project Explorer

Important packages



# Questions?