A new Implementation of „Seminar Organization“

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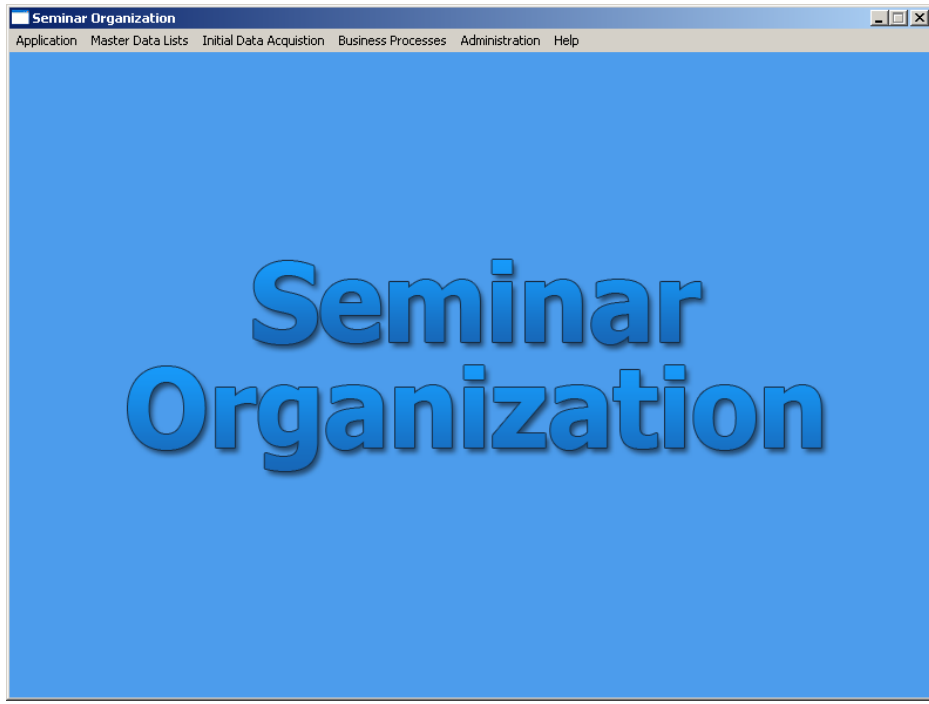
Michael Ritzschke



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Several implementations of „Seminar Organization“ are available now

- Balzert: Original – but without Sources
- Ivan Pribela (DAAD workshop, Zagreb, 2005):
  - Java-Sources
  - new GUI
- HU (authors: Volker Janetschek, Michael Hidebrandt):
  - Java-Sources
  - GUI like Balzert - which is more ergonomic
  - all Functions and Associations
  - high Stability
  - Detailed Documentation (JavaDoc, installation guide, class diagram, implementation design, database design)

Where is „Seminar Organization“ used?

- JCSE (Joint Course in Software Engineering):
  - Commercial case study (XCTL technical)
  - Illustrates all required documents throughout the JCSE
  - Illustrates principles of software ergonomics
  - Real-world example ...
- Base for working with other tools:
  - Software metrics (CCCC)
  - Regression Test (ATOS)

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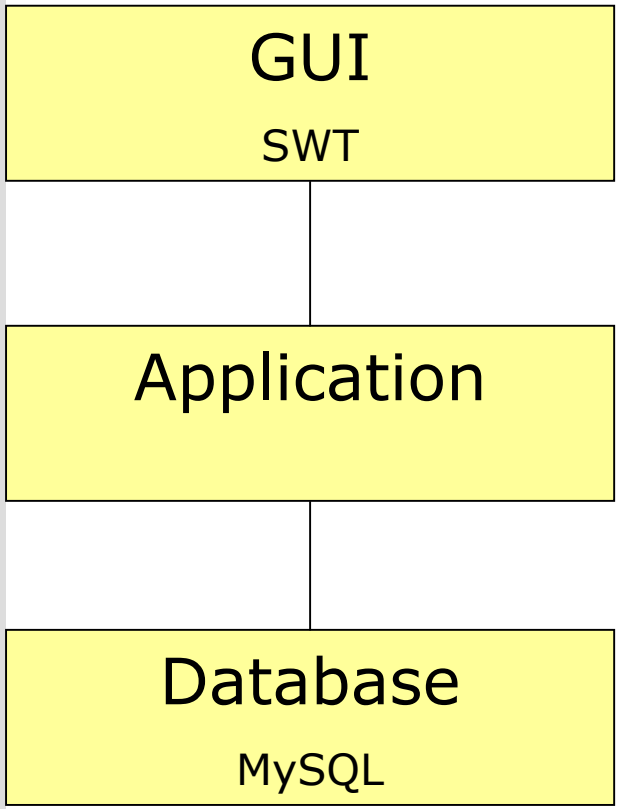
HUSemOrg topics

- Stand-alone application
- MySQL-Database (free Essential-Version)
- GUI-Base: Standard Widget Toolkit (SWT)
- The running-version uses Windows
- Also possible: Linux/Unix, Mac – but you have to download the appropriate SWT version

HUSemOrg: Layered architecture



- Provides a pleasant graphical interface for the user
- SWT is fast, offers a wide spectrum of functionality and is also very portable

- Interface for easy access to the application data
- Correctness checking (entered data and associations)

- Relational database husemorg (→ Database Design)
- Java database connectivity driver

Database Design

- Documentation: Structure of all database tables and the ERM

Tables

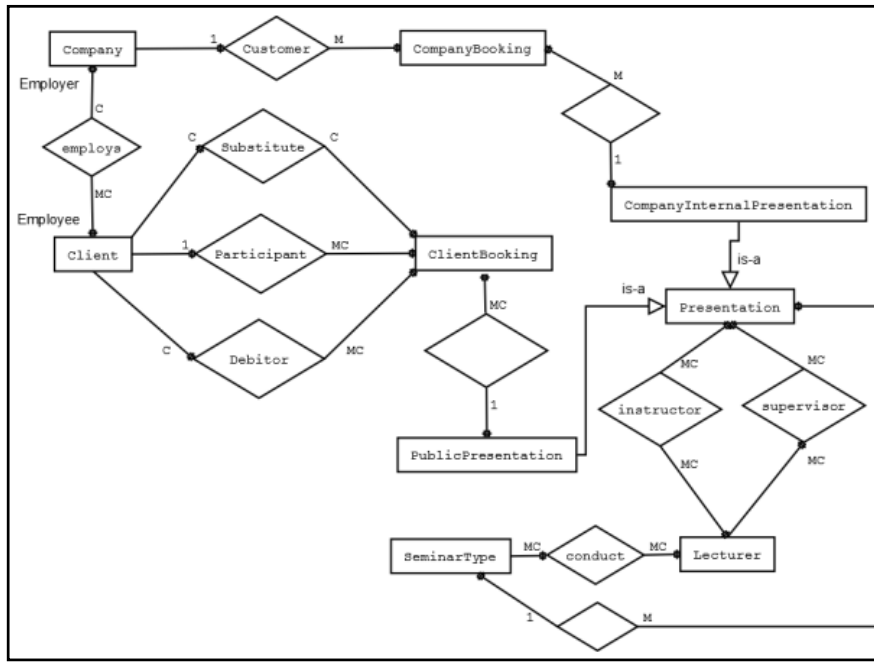
The table names in the database consist only of lowercase characters. We used the mixed notation to enhance the readability.

We present the structure of the tables in tabular form using the following columns:

- **Field:** the name of the attribute or table column
- **Type:** the SQL datatype if the column
- **Not Null:** indicates, if a NULL value is allowed for the column
- **Key:** indicates, if the column is a primary key
  - **PRI:** column is part of the primary key
  - **UNI:** value must be unique in the table
  - **MU:** multiple occurrences of the same value are allowed
- **Default:** the default value of the attribute
- **Extra:** extra information

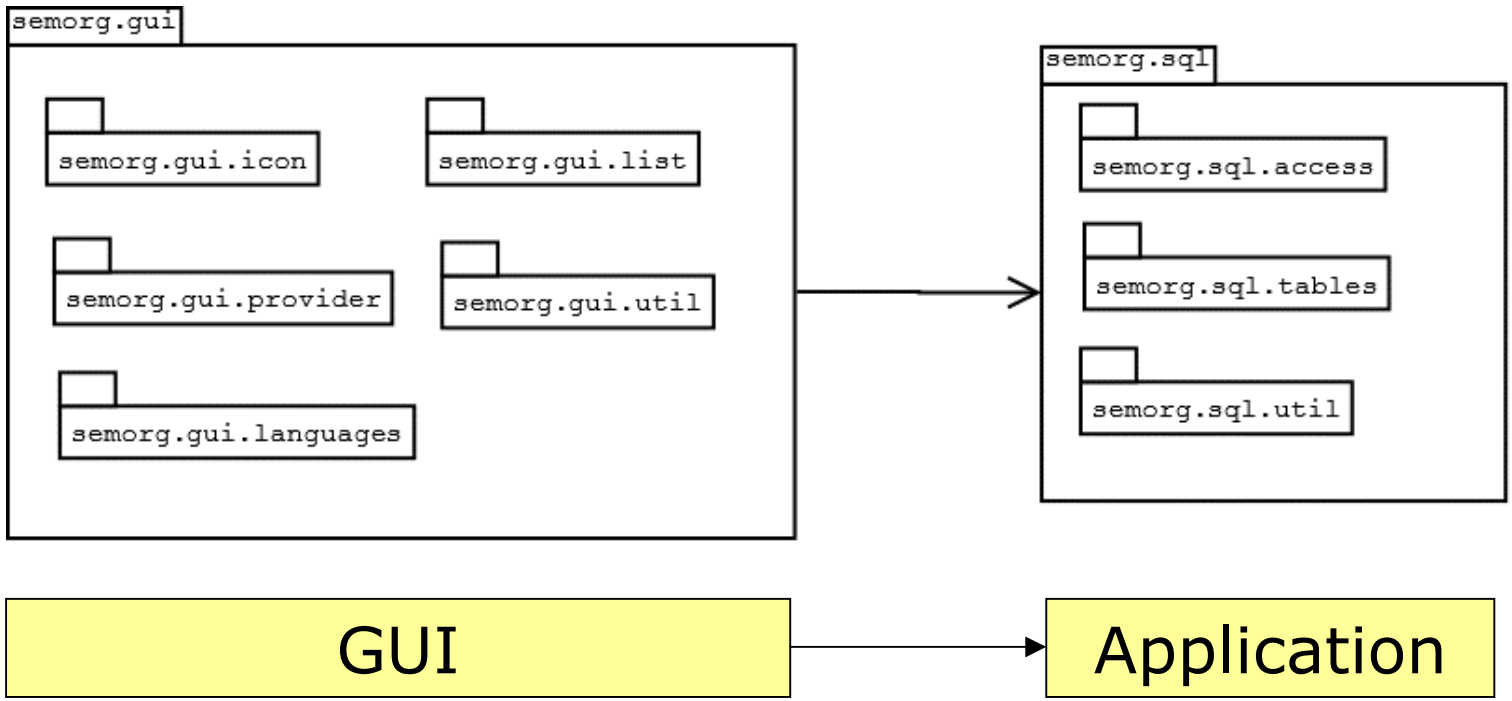
The Table Person

Field	Type	Not Null	Key	Default	Extra
number_pk	int(11)	yes	PRI	NULL	auto_increment
salutation	varchar(13)	yes			
title	varchar(13)			NULL	
firstname	varchar(30)			NULL	
name	varchar(30)	yes			
street	varchar(50)			NULL	
zipCode	varchar(5)			NULL	



Implementation Design

- The source code is organized in 10 package



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http://www2.informatik.hu-berlin.de/swt/intkoop/jcse/

- Joint Course in Software Engineering:

Course Materials			
Structure of the course	Topics	Slides	Assignments
Case studies	Literature	Slide printouts	Examinations
Tools	Demo topics (ppt, doc)	Slide handouts	Students feedback form

Case studies

The proposed syllabus currently uses two case studies:

- **the main one (Seminar organization)**, that is used throughout the lectures and in some assignments
  - Preliminary Requirements Specification v 3.0
  - Preliminary Requirements Specification v 2.3
  - Requirements Specification v 3.0
  - Requirements Specification v 2.3
  - Implementation in Java (Novi Sad)
  - Implementation in Java (Humboldt University), Documents, Developer version (with Java-sources)
- **the additional one (XCTL control system)**, that is partially used during the lecture and in some assignments seminar works or student projects.

http://www2.informatik.hu-berlin.de/swt/intkoop/jcse/

- Documents → husemorg_documents.html

Seminar Organization

HUSemOrg: Documentation

The documentation contains 4 documents:

- Quick Start Guide
- Class Diagram
- Implementation Design
- Database Design

You can also load all documents as zip-File.

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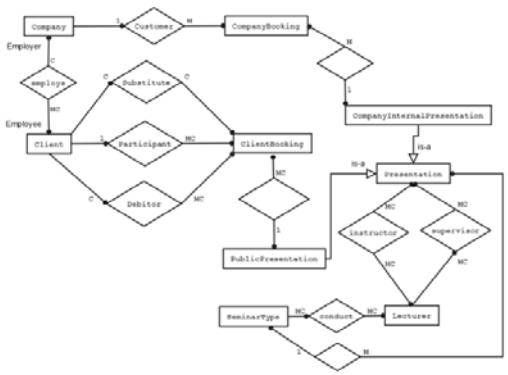
Field	Type	Not Null	Key	Default	Extra
number_pk	int(11)	yes	PRI	NULL	auto_increment
salutation	varchar(13)	yes			
title	varchar(13)			NULL	
firstname	varchar(30)			NULL	
name	varchar(30)	yes			
street	varchar(30)			NULL	



The packages semorg.gui.icon and semorg.gui.languages

These two resource packages only contain resources used by the application. The package *semorg.gui.icon* contains all graphics of the application whereas *semorg.gui.languages* contains all text resources shown in the GUI of the application.

The packages semorg.gui.list and semorg.gui.provider

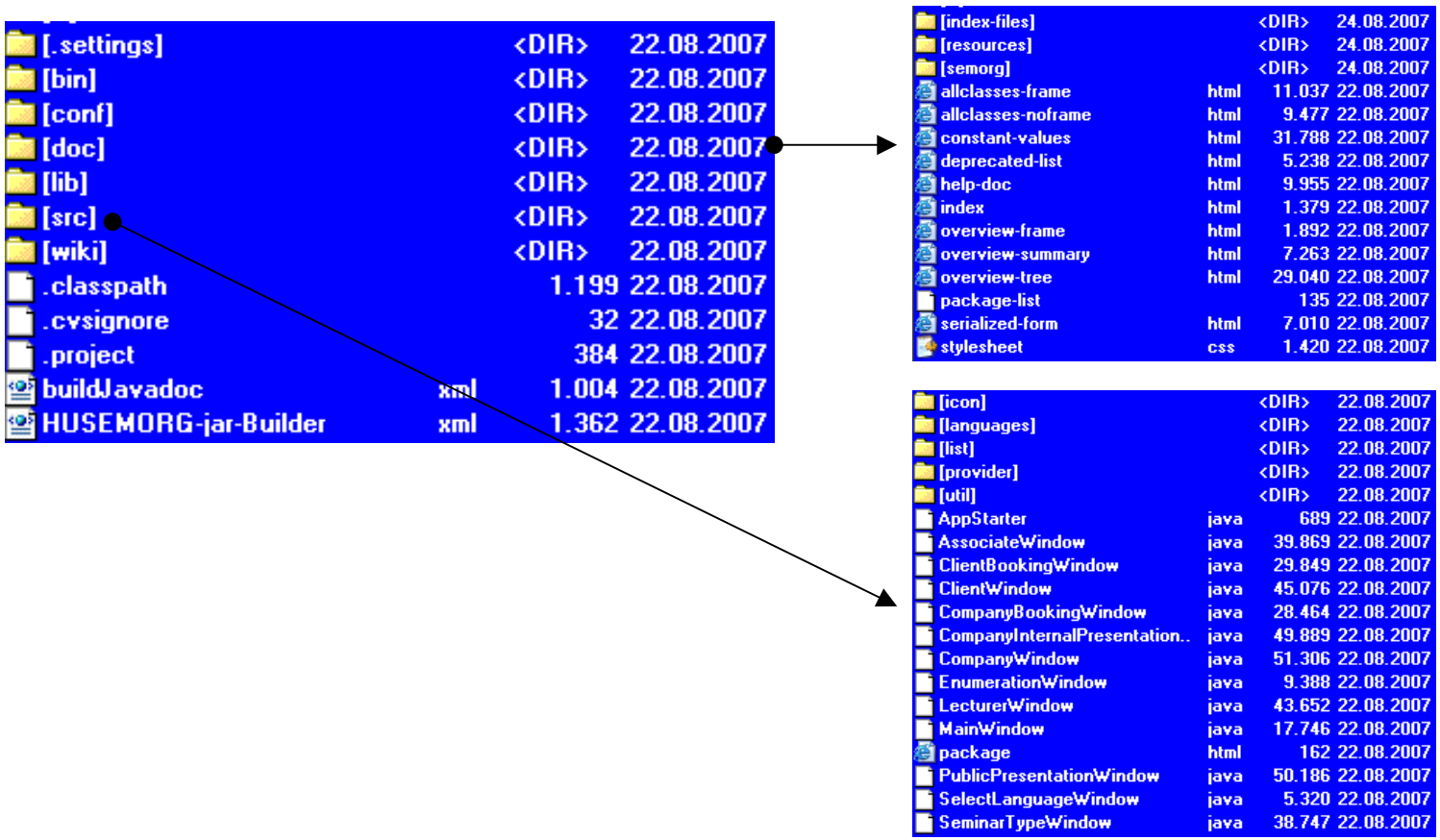
We use GUI tables to display the existing data records of the database tables. Thus there two problems to solve: firstly we need to draw the list windows and its components and secondly we've got to input the data records into the tables. The first problem is solved by the package *semorg.gui.list* and the second one by the package *semorg.gui.provider*, i.e. the first package defines the outer appearance of the list windows and some GUI specific functionality whereas the second package gets the data from the application layer and puts it into the GUI tables.

The package semorg.gui.util

This package encapsulates all utility classes of the GUI layer, such as some complex parts of the editing windows, such as the controls, which enables the user to manage associations between several classes the calendar control which enables the user insert the date in very comfortable way.

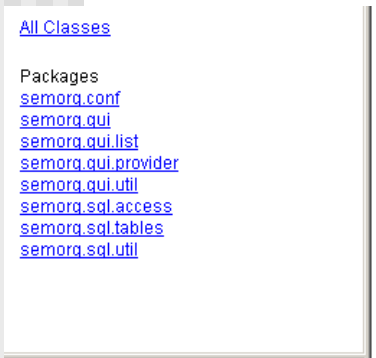
http://www2.informatik.hu-berlin.de/swt/intkoop/jcse/

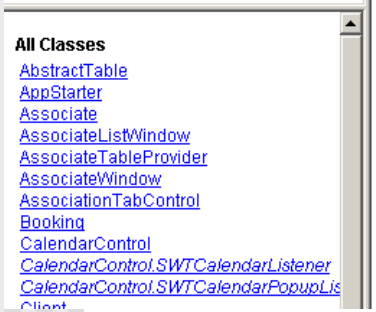
- Developer version → husemorg_project.zip

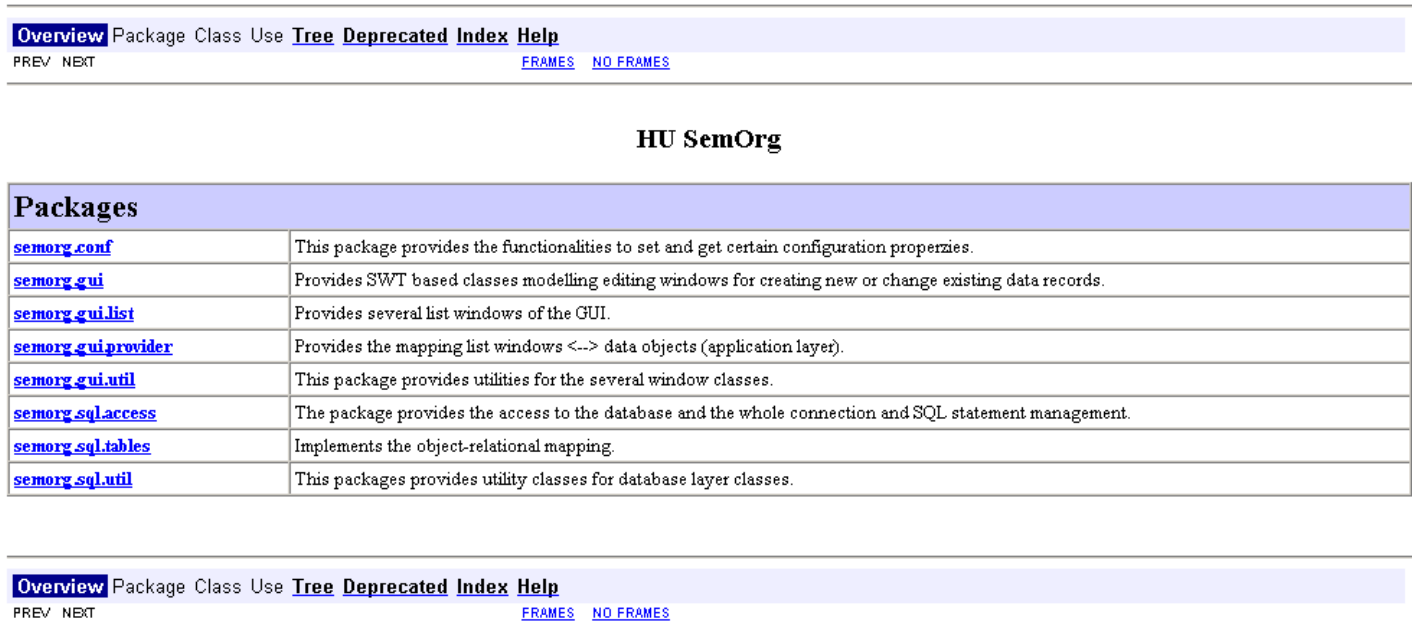


http://www2.informatik.hu-berlin.de/swt/intkoop/jcse/

- javadoc → index.html
  - full description of all packages and classes







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Quick Start Guide

Seminar Organization

HUSemOrg: Quick Start Guide

(Sacklowski, 18.07.07; Hildebrandt 14.08.07)

This guide refers to the installation on the Windows operation system. The application should also run under Linux/Unix or Mac operating systems, but in this case you have to download the appropriate SWT version.
There two steps to follow for the appropriate installation.

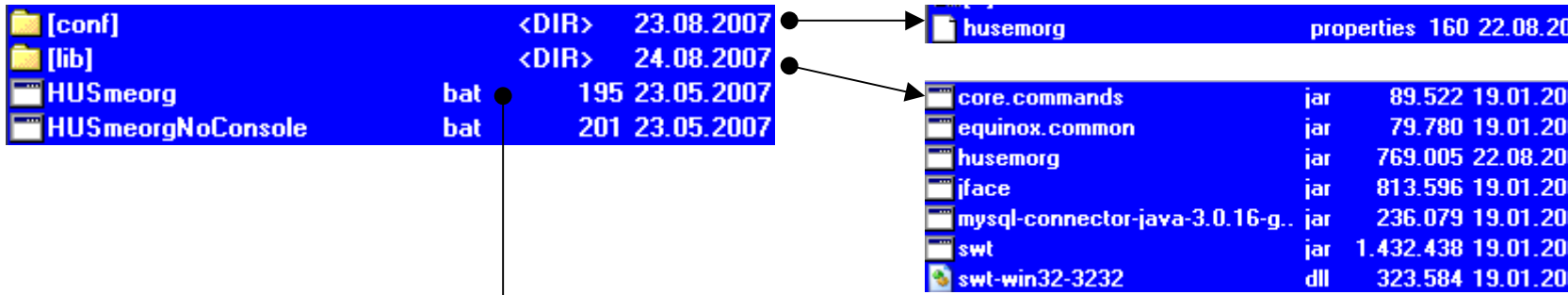
Step 1: Install MySQL and some tools
Step 2: Install the husemorg

2. Install HuSemOrg

- HUSemOrg is Java application, so it's necessary to install the Java Runtime Environment (Version 5 and higher).
- HuSemOrg comes with all the needed libraries, so you just have to unpack the zip archive `husemorg.zip`.
- You can start the application by executing the `HUSemOrg.bat` or the `HUSemOrgNoConsole.bat`.

http://www2.informatik.hu-berlin.de/swt/intkoop/jcse/

- Implementation → husemorg.zip
- Running version




```
javaw -cp  lib\husemorg.jar;lib\core.commands.jar;lib\equinox.common.jar;lib\jfac
e.jar;lib\mysql-connector-java-3.0.16-ga-bin.jar;lib\swt.jar;bin\
-Djava.library.path=lib semorg.gui.MainWindow
```

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http://cloc.sourceforge.net: cloc.exe (count lines of code)

- HUSemOrg

```
http://cloc.sourceforge.net v 0.80  T=7.0 s (12.1 files/s, 4559.1 lines/s)
-------------------------------------------------------------------------------
Language             files      blank    comment       code    scale   3rd gen. equiv
-------------------------------------------------------------------------------
Java                    75       4363       7163      20314 x   1.36 =        27627.04
HTML                    10         10          0         64 x   1.90 =          121.60
-------------------------------------------------------------------------------
SUM:                    85       4373       7163      20378 x   1.36 =        27748.64
-------------------------------------------------------------------------------
```

- semorg Novi Sad

```
http://cloc.sourceforge.net v 0.80  T=29.0 s (2.3 files/s, 581.1 lines/s)
-------------------------------------------------------------------------------
Language             files      blank    comment       code    scale   3rd gen. equiv
-------------------------------------------------------------------------------
Java                    65       2618       3216      11015 x   1.36 =        14980.40
DOS Batch                3          0          0          3 x   0.63 =            1.89
-------------------------------------------------------------------------------
SUM:                    68       2618       3216      11018 x   1.36 =        14982.29
-------------------------------------------------------------------------------
```

Where you can find the software

- http://www2.informatik.hu-berlin.de/swt/intkoop/jcse/case_studies/SeminarOrg/**hu**/

Thank you for your attention!