DB Schema Design and Programming

Project Course

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Summer Semester 2019
Groups

- **dbgrp01**
  - akarlicz
  - kwolf

- **dbgrp02**
  - sbarbaro
  - mmeister

- **dbgrp03**
  - trachel
  - hschmidt

- Groups of two/three
- Usernames with at most 8 letters
  - Username = first letter of first given name + first 7 letters of last surname
- Character substitutions (e.g., ö → oe)
- Initial random password will be sent by email
Lara - Practical Course Server

- [lara.cs.uni-kl.de](http://lara.cs.uni-kl.de)
- SSH access allowed from the internet
- Terminals located within the practical room **36-324** (limited!)

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DB Schema Design and Programming
Information

DB Project

Welcome to the Wiki for the DB Project of the TU Kaiserslautern!

The goal of the practical course is to develop skills in the design of object-relational DB schemas and the development of modern database applications. The work is divided into four worksheets.

Worksheets

- Worksheet 1: "SQL Programming and Object-Relational Schemas"
- Worksheet 2: "Views, Triggers, and Stored Procedures"
- Worksheet 3: "JDBC, Schema metadata, XML, Schema"
- Worksheet 4: "JSON API for Online Shopping"

Environment

- Getting Started
  - DB Project Virtual Machine Image: How to set up your development VM on your computer
  - Using Schemas in DB2: Since this always creates confusion...
  - Terminal Rooms: Information and tips about terminals / Iera
  - External Access: Guidelines on how to work from your own computer
  - PRSEI: The Practical Course Interactive Submission System
  - DB2

Information

- Documentation: Overview

Contacts

- General mailing list: dbprak@ informatik.uni-kl.de
- Tutor mailing list: dbprak-tutor@ informatik.uni-kl.de

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DB Schema Design and Programming

https://github.com/dbprak/dbprak/wiki
Virtual Machine Image

- VM Image provided with a ready-to-go (Linux-based) development environment
- Uses Oracle VirtualBox
- Includes DB GUI frontend, Eclipse for JEE, SSH Tunnel, and auxiliary scripts
- Check the Wiki!
Tools

- One DB per group: `dbgrp<nr>`
- Connect on port 55010
- Initially empty
- Schemas may be freely created
- See Wiki for instructions
Worksheets and Submissions

- 4 worksheets: 100 points in total
- submission is done online for each group
  - until 23:59:59 (absolutely strict!)
- before making wrong assumptions, ASK!
- cheating, e.g., copying from other participants, is prohibited!
Submission

PRISE: Practical Course Interactive Submission Environment
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Task 1: Total numbers

How many users are registered within the system, how many e-mails, and how many attachments?

- **Expected columns**: NAME ('users', 'emails', 'attachments'), QUANTITY

Submitted solution has errors.

```sql
SELECT count(*) FROM user;
```

**Incorrect Result**

Query produced wrong result: Column `NAME` from expected

<table>
<thead>
<tr>
<th>Expected</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME: VARCHAR</td>
<td>QUANTITY: INTEGER</td>
</tr>
<tr>
<td>users</td>
<td>130</td>
</tr>
<tr>
<td>emails</td>
<td>500</td>
</tr>
<tr>
<td>attachments</td>
<td>650</td>
</tr>
<tr>
<td>users</td>
<td>130</td>
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**PRISE: Practical Course Interactive Submission Environment**

- solution for each task submitted separately
- system immediately tells whether answer is correct
- if wrong answer, expected result is shown for comparison
- no half points given

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Submission: `select count(*) from user`

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**Actual:**

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NOT to be used as development tool!
Getting Help

1. Check tips on the Wiki
2. Check DB2 documentation and ask Google
3. General mailing list: dbprak@cs.uni-kl.de
4. Tutors mailing list: dbprak-tutor@cs.uni-kl.de
5. Office hours for asking questions in person:
   - With Max Gilbert: room 36-334 (with appointment set via email)

I cannot help you with:

- Java and SQL
- Setting up the DB and running queries/programs
- Problems in your local environment
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Estimated Effort

From experience: most students underestimate the required effort to complete the course!
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- it’s OK! Nobody will get mad…
- **please** tell us and your partner as soon as possible
Schedule

Four Worksheets (4 weeks each)

1. SQL Programming and Object-Relational Schemas  
   (April 23 - May 19)
2. Views, Triggers, and Stored Procedures  
   (May 13 - June 9)
3. JDBC, Schema metadata, XML Schema  
   (June 3 - June 30)
4. JSON API for Online Shopping  
   (June 24 - July 21)
Colloquium

- Four oral examinations:
  - Check understanding of concepts presented in worksheets
  - Check balance of effort among group members (grade is individual)

Colloquiums : Worksheets

≈ 40 : 60

To pass the db project, each group has to get 60% of the total score in each worksheet and each group member has to get 50% of the total score in each colloquium.
Next Steps

1. *Now*: Building groups
2. *Today*: Receive user accounts and worksheet 1
3. *April 29*: Open PRISE for worksheet 1

Ask now!