

Introduction to Relational Database Systems

Datenbanksysteme 1 (INF 3131)

Torsten Grust

Universität Tübingen

Winter 2013/14

Welcome!

This course will introduce you to the world of **Relational Database Systems**, *the* dominating database technology in use today (since the early 1970s).

- All data in Relational Database Systems takes a **rectangular, tabular shape**:

A	B	C
.	.	.
.	.	.
.	.	.

- Relational Database Systems benefit from this restricted **data model** in a number of ways:
 1. A **data language** to insert, extract, manipulate such data tables is simple
 2. The formal model behind this idea is simple as well
 3. Regular data layout admits a super-efficient implementation
(→ Datenbanksysteme 2)

Torsten Grust?

Time Frame	Affiliation/Position
1989–1994	Diploma in Computer Science, TU Clausthal
1994–1999	Promotion (PhD), U Konstanz
2000	<i>Visiting Researcher</i> , IBM (USA)
2000–2004	Habilitation, U Konstanz
2004–2005	Professor Database Systems, TU Clausthal
2005–2008	Professor Database Systems, TU Munich
since 2008	Professor Database Systems, U Tübingen

Torsten.Grust@uni-tuebingen.de

<http://db.inf.uni-tuebingen.de/team/grust>

@Teggy (*Professor, likes database systems and programming languages.* ツ)

WSI, Sand 13, B318

Administrativa (1)

Lectures

Time Slot	Room
Monday, 10:15–11:45	Sand 6/7, grosser Hörsaal
Tuesday, 14:15–15:45	Sand 6/7, grosser Hörsaal

Tutorials

Time Slot	Room
Thursday, 14:15–15:45	A104 (?)

Administrativa (2)

End-Term Exam

- A 90-minutes **written exam** on Monday, Feb 3 2014, 16:00–18:00 in Hörsaal N6 (Morgenstelle)
- You may bring a A4 double-sided hand-written *cheat sheet*
- Passing earns you 6 ECTS

Weekly Assignments

- We will distribute, collect, and grade **weekly assignments**
- You may — and you should — work in teams of two
- Scoring $\geq \frac{2}{3}$ of the overall points in the assignments earns you an additional 2 ECTS

Weekly Assignments & Tutorials

Organized and run by **Alex Ulrich** (currently in recovery; get better soon! ツ)

1. Expand on lecture material
2. Develop additional code, run additional examples, ...
3. Discuss solutions to weekly assignments

Assignments and tutorials will probably start a tad late this semester. We might turn one early lecture into a tutorial-style introduction.

More details as we see Alex recover.

Administrativa (3)

Lecture Homepage

<http://db.inf.uni-tuebingen.de/teaching/ws1314/db1>

- Download **slides** (PDF — please bring a print-out and take notes)
- Download **assignments** (also: sample data, database code, ...)
- **Contact information** Just drop by our offices (Sand 13, 2nd floor, rooms B315/B318), send e-mail first if you require specific help/longer attention
- Please visit page in a regular fashion (“... *assignment unsolvable as given...*”, “... *no lecture on...*”, etc.)

Touch the Data

- Whenever reasonable, we will try to lay our hands on data (and not only talk about it)
- Expect lots of **live interaction with data files and tools** during the course
- We will use the programming language **Python** to perform ad-hoc manipulation of data files and illustrate database system functionality



`python.org`, Python 2.7 assumed, Python 3 probably OK

- Basic Python constructs suffice (mostly nested loops, conditionals, arrays, dictionaries)

Touch Lots of Data

- The Relational Database System **PostgreSQL** will be the primary tool in this course



PostgreSQL

[postgresql.org](https://www.postgresql.org), PostgreSQL 9.3 assumed, any version 9.x probably OK

- Straightforward to install and use on a variety of platforms (OS X, Linux, Windows)
- Complete, standards-conformant, efficient, extensible, open to inspection, and generally awesome
- Implements **SQL** (*The Intergalactic Dataspeak*), the main language spoken in this course

Questions So Far?

- *Can I bring my mobile computing device to the lecture?*

Yes, if you use it to run Python or PostgreSQL ツ

- *Do I need to copy the Python/SQL/... code that you develop during the lecture?*

No, (most) code and data will be available on the course home page

- *Do you value feedback (on course contents as well as form)?*

Most definitely (also: you *will* find bugs in the slides/material)

Find me and this course on http://www.meinprof.de/lecturers/Torsten_Grust

