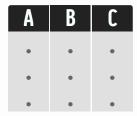
INTRODUCTION TO RELATIONAL DATABASE SYSTEMS DATENBANKSYSTEME 1 (INF 3131)

Torsten Grust
Universität Tübingen
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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**:



- Relational Database Systems benefit from this restricted **data model** in a number of ways:
 - 1. A data language to insert into, extract from, and 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 (\rightarrow Datenbanksysteme 2)

TORSTEN GRUST?

Time Frame	Affiliation/Position
1989-1994	Diploma in Computer Science, TU Clausthal
1994-1999	Promotion (PhD), U Konstanz
2000	Visiting Researcher, 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

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Twitter: **@Teggy** (*Professor, likes database systems, programming languages, and SC Freiburg* \mathcal{Y}) WSI, Sand 13, B318

ADMINISTRIVIA (1) LECTURES (INCLUDES 15-MIN BREAK)

Time Slot		Room		
Monday,	12:15-14:00	Hörsaal	N4,	Morgenstelle
Tuesday,	12:15-14:00	Hörsaal	N5,	Morgenstelle

TUTORIALS

Time Slot	Room		
Thursday, 12:15-14:00	Hörsaal N5, Morgenste	lle	

ADMINISTRIVIA (2) END-TERM EXAM

- A 90-minute **written exam** on Tuesday, Feb 15 2022, 12:00–14:00
- You may bring a A4 double-sided *cheat sheet*
- Passing earns you **9 ECTS** (students of bio informatics only: drop out just after Christmas and earn 6 ECTS)

WEEKLY ASSIGNMENTS

- We will distribute, collect, and grade weekly assignments (Wednesday to Wednesday)
- You will work in teams of two
- Score ≥ ¾ of the overall points in the assignments to be admitted to the end-term exam and earn exam bonus points

WEEKLY ASSIGNMENTS & TUTORIALS

Organized and run by **Christian Duta** and **Tim Fischer**.

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

Assignments and tutorials will start in the second week of the semester once we have collected the first batch of interesting material. First tutorial: Oct 28, 2021.

Download assignments via git pull, upload your solutions via git push. See the DB1
 Forum.

ADMINISTRIVIA (3) LECTURE HOMEPAGE + FORUM

https://db.inf.uni-tuebingen.de/teaching/DB1WS2021-2022.html

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https://forum-db.informatik.uni-tuebingen.de/c/ws2122-db1

- Download **slides** (PDF bring a print-out and take notes), sample data, 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.)
- **!** Register in the forum! This is *not* optional (we use it to organize assignments and teams)

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



- 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



- Straightforward to install and use on a variety of platforms (macOS, 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).
 Please participate in the mid-semester student's evaluation of our courses. Thank you!