

# DATABASE ADMINISTRATION BUNDLE

Floris Breggeman, Denys Flederus, Raoul Linssen, Freek Nijweide

## INTRODUCTION

Previously, education on databases was facilitated via paper handouts. With the growing size of TCS, this is no longer sustainable. We present a solution: the Database Administration Bundle.

## REQUIREMENTS

A fully automated system where students can request a database without help. Staff can assist with database management.

## PRODUCT

Database Administration Bundle

### Pearls of Computer Science

Pearls of Computer Science, with real schema!

You have credentials for this course

To use the database, connect to thebias.nl using these credentials:

Username and DB name:

dab\_Pearls\_of\_Computer\_Science\_24

Password:

huS9ynJwtm8uHdbq

Example command for connecting:

```
psql -h thebias.nl -U
dab_Pearls_of_Computer_Science_24
dab_Pearls_of_Computer_Science_24
```

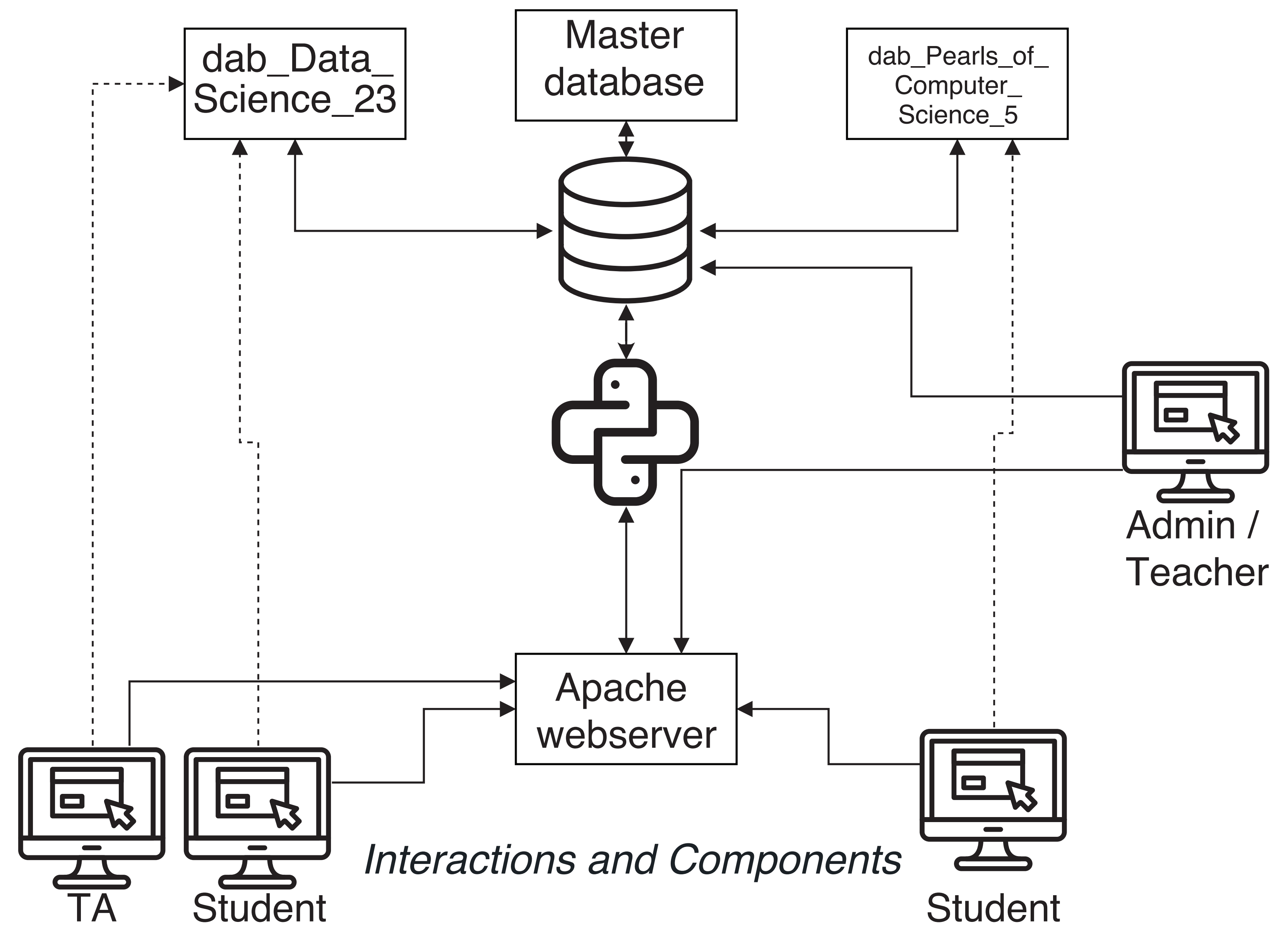
Delete database and release credentials

Reset database

Get dump of database

The student interface

- Students request database via the website
- Teachers create courses with schemas
- TAs assist the teacher with management of the course
- Admins have full power

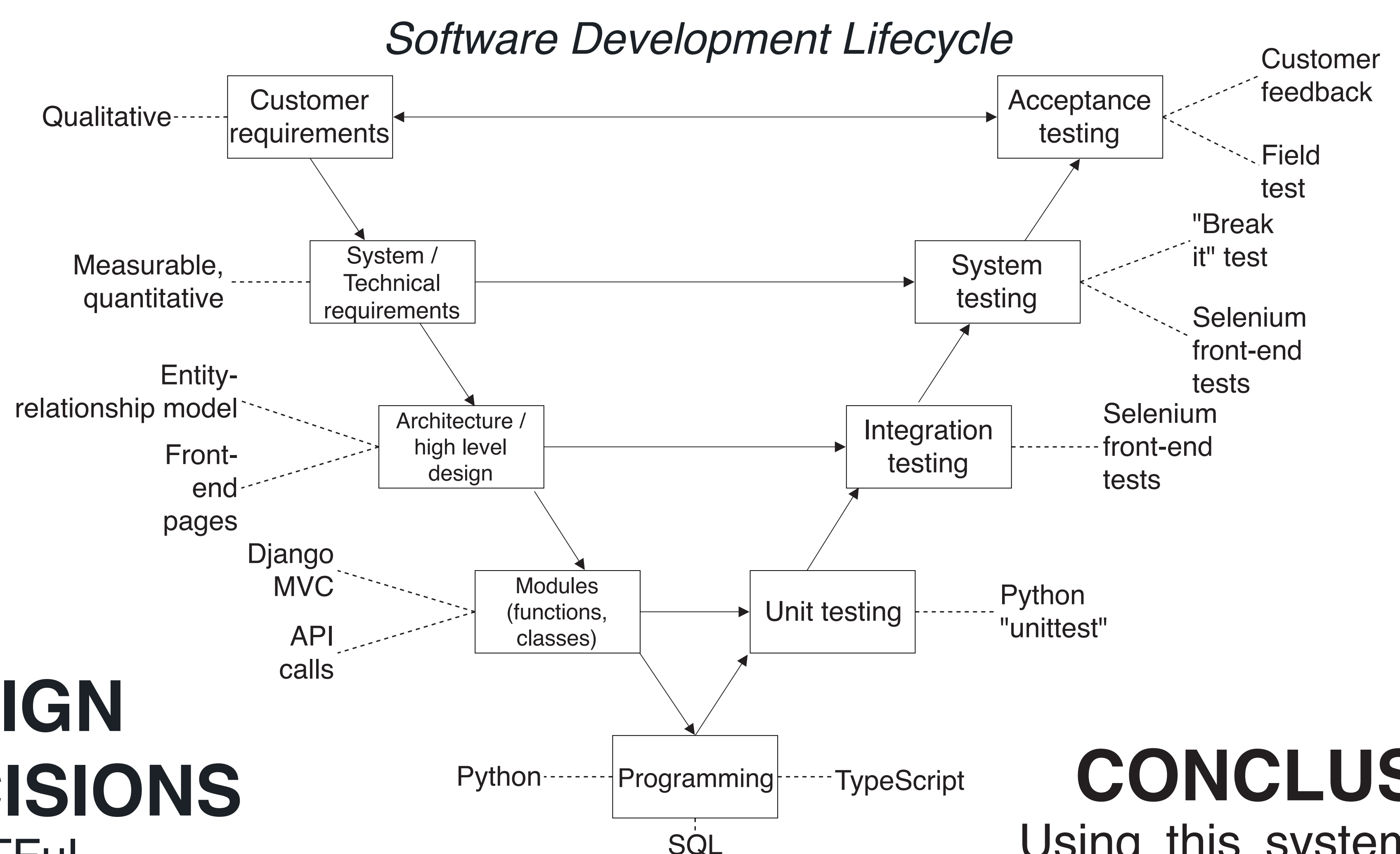


## STAKEHOLDERS

- Customer: Data Science
- Operator: Dr. Maurice van Keulen
- Reliability and ease of use.
- Development: us. Maintainability
- TCS board: Programme quality
- Government: no laws broken
- LISA: no abuse of UT network
- TCS students: reliability and ease of use.

## ARCHITECTURE

- PostgreSQL
- Django (Python): back-end
- TypeScript: front-end
- Sass, Bootstrap: styling
- NPM: dependency management
- Bash: deployment scripts
- Git-based rolling release
- uWSGI to Apache2 web server



## DESIGN DECISIONS

- RESTful
- One database per course.
- Stateless backend
- Email verification (not OAuth)
- No IP-whitelist
- Program runs directly on host server, not in virtual machine
- Platform independent back-end (as long as it's UNIX)
- Mobile friendly

## CONCLUSION

Using this system, education concerning databases is quicker, easier, and more reliable. If, during future courses, it appears more features are needed, it is easy to expand the system, due to its modularity and maintainability.

Supervisor: Dr. Ing. Maurice van Keulen  
Sysadmin: Ing. Jan Flokstra  
Coordinator: Dr. Rom Langerak

