DATABASE ADMINISTRATION BUNDLE

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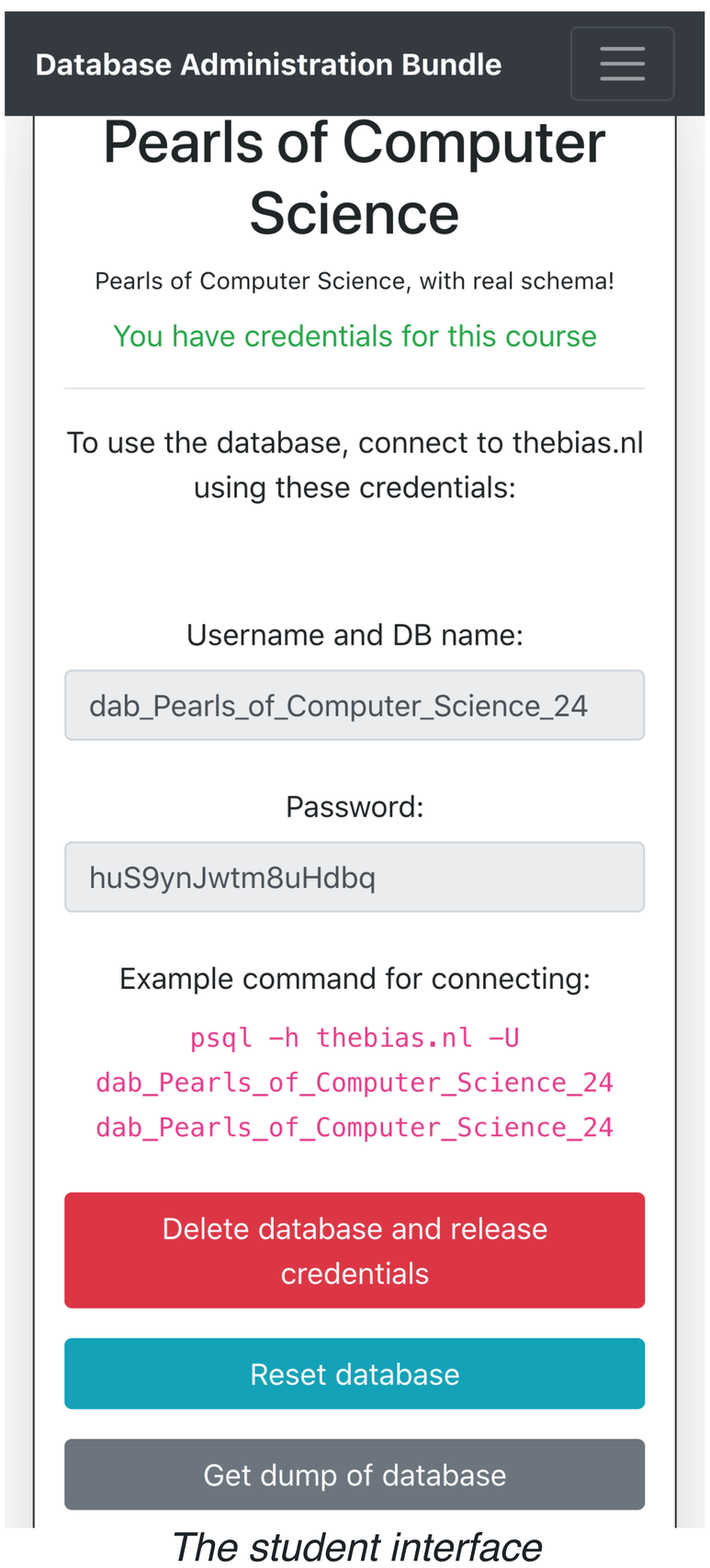
INTRODUCTION

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

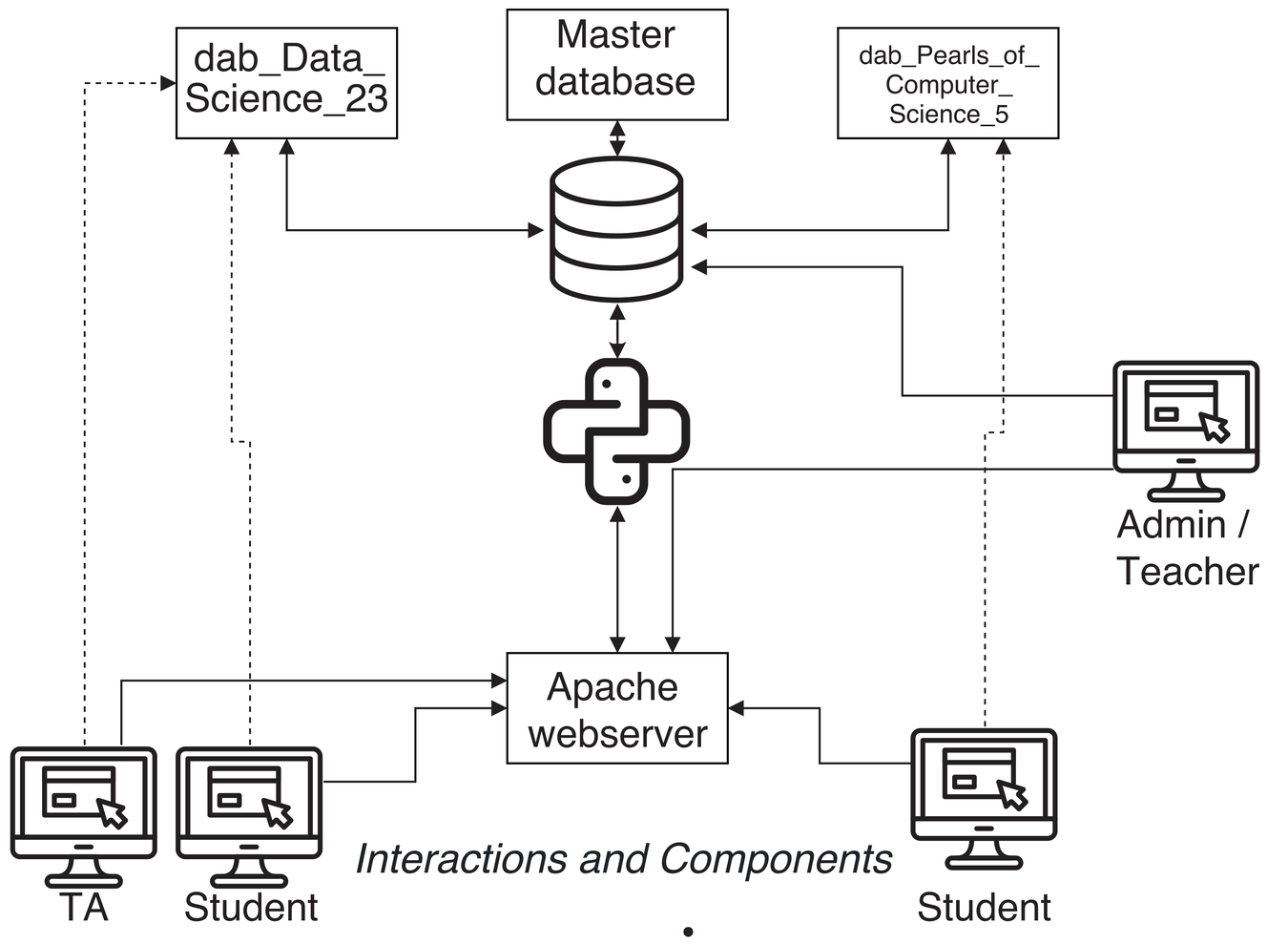
A fully automated system where students can request a database without help. Staff can assist with database management.

PRODUCT



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



Interactions and Components

STAKEHOLDERS

- Customer: Data Science
- Operator: Dr. Maurice van Keulen

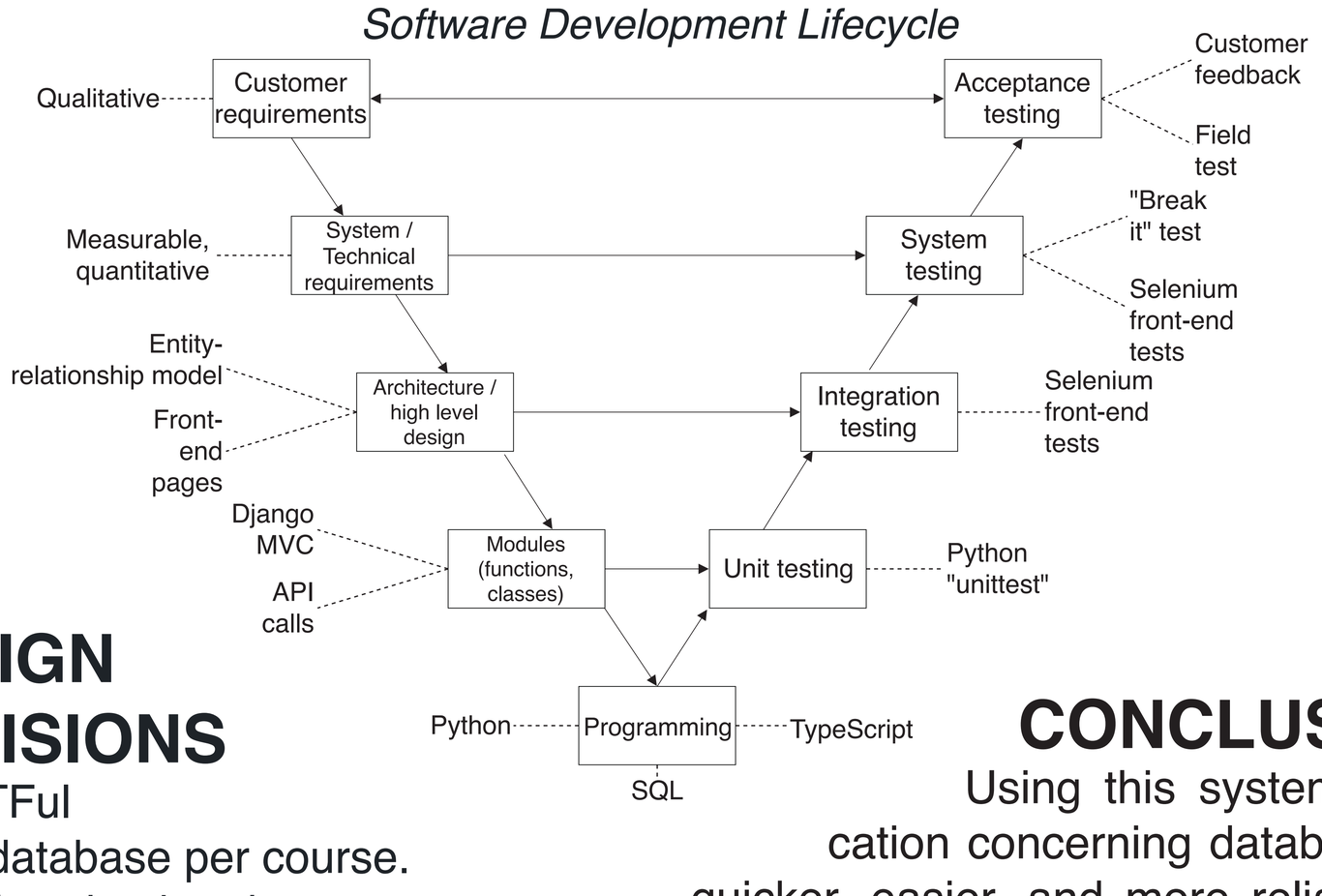
Reliability and ease of use.

- 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

Software Development Lifecycle



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.

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