Module Overview

COMP1048: Databases and Interfaces (2024-2025)

Matthew Pike and Yuan Yao

Overview

This Lecture

- Introduce the teaching team.
- Overview of module aims and key topics:
  - Databases: Design principles, relational modelling, and SQL;
  - Interfaces: HTML, CSS, and linking to databases.
- Cover module assessments: Coursework, labs, quizzes, and exams.
- Expectations for attendance, participation, and communication.
- Student feedback for improvement.

Teaching Team

Module Convener: Matthew Pike

- **Name**: Matthew Pike
- **Office**: PMB435
- **Email**: matthew.pike@nottingham.edu.cn
- **Office Hours**: Monday: 12:00 - 13:00; and Thursday: 12:00 - 13:00

Figure 1: Please call me: “Matt”

Module Convener: Yuan Yao

- **Name**: Yuan Yao
- **Office**: PMB438
- **Email**: yuan.yao@nottingham.edu.cn
- **Office Hours**: Mondays, 17:00 - 18:00; and Tuesdays, 17:00 - 18:00

Figure 2: Please call me: “Yuan”

Lab Support and Technician: Jane Zhao

- **Name**: Jane Zhao
- **Office**: PMB320
- **Email**: jane.zhao@nottingham.edu.cn
- **Office Hours**: Jane does not have office hours but can provide technical support by email.

Figure 3: Please call me: “Jane”

Graduate Teaching Assistant: Huimin Tang

- **Name**: Huimin Tang
- **Office**: N/A
- **Email**: huimin.tang@nottingham.edu.cn
- **Office Hours**: Huimin does not have office hours and is only available during formal lab sessions.

Figure 4: Please call me: “Huimin”

Graduate Teaching Assistant: Yue YANG

- **Name**: Yue YANG
- **Office**: N/A
- **Email**: scxyy2@nottingham.edu.cn
- **Office Hours**: Yue does not have office hours and is only available during formal lab sessions.

Figure 5: Please call me: “Yue”

Module Content

What is DBI all about?

- An in-class activity to get you thinking about what DBI is all about.
- Please use Mentimeter to answer the following questions:
    - What is DBI?
    - What do you think you will learn in this module?
    - What do you think you will be able to do after this module?
- There are no right or wrong answers, but please think about your answers.

Outline of Module Content

- The module is divided into two parts:
  - Databases
  - Interfaces
- For *databases* we will cover:
  - Relational algebra and modelling
  - Database design principles, including normalization
  - Using SQL to implement databases
  - Using a DBMS (Database Management System) to manage databases, specifically SQLite
- For *interfaces* we will cover:
  - Using HTML and CSS for creating web pages
  - Using Python and Flask to connect web pages to databases

Common Challenges (Complaints?)

- *"There are too many programming languages and technologies to learn in DBI."*
  - We understand this concern. Unfortunately, web development is a complex mix of technologies. Each technology serves a specific purpose that others cannot easily fulfil.
- *"The module work is too difficult."* / *"The module work is too easy."*
  - Students enter the Qualifying Year with varying levels of experience. Whether you find the work challenging or straightforward, we encourage you to dig deeper - experiment, create and extend your skills

Module Textbook

- The module textbook is:
  - **Database Systems: A Practical Approach to Design, Implementation, and Management** (6th Edition)
  - Thomas Connolly and Carolyn Begg
  - Pearson Education Limited, 2014
  - ISBN: 9781292061184
- The textbook is *extremely* detailed and a very useful resource. It is recommended that you read the relevant chapters as you progress through the module.

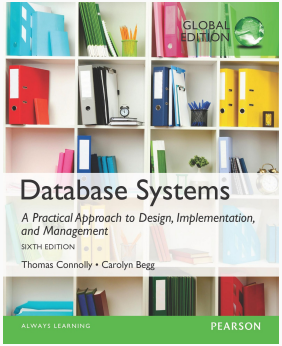


Figure 6: Database Systems: A Practical Approach to Design, Implementation, and Management

Module Organisation

Module Schedule

- A detailed schedule of lectures, labs and tutorials is available on Moodle.
  - Please note that the timetable is subject to change.
  - We will notify you of any changes via the Moodle *Announcements* forum.
- Each week you will have:
  - 2 hours of lectures
  - 2 hours of labs
    - You will be assigned to a lab group. Please attend the lab session indicated on your timetable.
    - The teaching team cannot change your lab group as this is managed by the University's central timetabling team.
    - You must bring your laptop (not iPad) to the lab sessions.

Assessment Breakdown

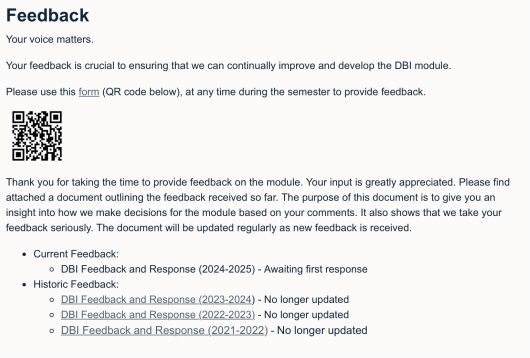
- 50% written examination.
  - Review lecture in semester week 13.
  - Past papers will be available on Moodle. Solutions will **NOT** be provided.
- 50% coursework, consisting of:
  - 10% - Weekly laboratory assignments.
  - 15% - Mid-semester quiz on SQL.
  - 25% - Database-driven Web Application.

Communication

- All module communication is done via the *Announcements* forum on Moodle.
  - Please check the forum regularly for important updates.
- If you have a question about the module, please post it on the *Q&A* forum on Moodle.
  - We will answer your question as soon as possible.
  - If you have a question about the module, other students are likely to have the same question. Therefore, please post your question on the forum rather than emailing the teaching team directly.
- If you have a question about your personal circumstances, please email Matt and Yuan directly.
  - Do not send duplicate copies of the same email to multiple members of staff - instead, include all relevant members of staff in a single email.

Feedback

- We welcome your feedback on the module.
- Please use the “Feedback” tool on Moodle.
- We use your feedback to improve the module.
- All feedback is documented and responded to in the “DBI Feedback and Response” document on Moodle, updated regularly.
- Though the form is not anonymous, your name and student ID are not shared beyond the teaching team.



Feedback

Your voice matters.

Your feedback is crucial to ensuring that we can continually improve and develop the DBI module.

Please use this form (QR code below), at any time during the semester to provide feedback.

Thank you for taking the time to provide feedback on the module. Your input is greatly appreciated. Please find attached a document outlining the feedback received so far. The purpose of this document is to give you an insight into how we make decisions for the module based on your comments. It also shows that we take your feedback seriously. The document will be updated regularly as new feedback is received.

- Current Feedback:
  - DBI Feedback and Response (2024-2025) - Awaiting first response
- Historic Feedback:
  - DBI Feedback and Response (2023-2024) - No longer updated
  - DBI Feedback and Response (2022-2023) - No longer updated
  - DBI Feedback and Response (2021-2022) - No longer updated

Figure 7: Please give us feedback!

Attendance

- Attendance is compulsory for all lectures and labs.
- Attendance monitoring is performed by the University - the teaching team does not mark attendance, nor have the ability to change your attendance record.
- If you are unable to attend, you must obtain an authorised absence via the University's "Extenuating Circumstances" procedure.
- Please attend the lab session on your timetable.
    - Lab groups are organised by the University timetabling team. The teaching team cannot change your assigned group.

Academic Integrity

- You are expected to complete all module work independently.
- Please familiarise yourself with the University's Academic Misconduct policy: Academic Misconduct Policy[1].
- We check all submissions for plagiarism. Every year, students are caught and penalised.
  - You don't want to be one of them.
- This will be covered in the School of Computer Science induction. Our advice:
  - If unsure about plagiarism, ask the teaching team.
  - Don't copy code from the internet without referencing it.
  - Don't share your code with other students.
  - Don't post your code on public repositories (e.g. GitHub).
  - Be cautious if friends or dorm-mates ask for your code.

[1] https://www.nottingham.ac.uk/studentservices/servicedetails/appeals-complaints-and-conduct/academic-misconduct.aspx

DBI in Context

DBI and your Degree

- Database and Interface design and implementation are fundamental skills for any computer scientist.
- Other modules in your degree will build on the skills you learn in DBI.
  - For example, in the second year you will complete a group project. It's common for students to create database driven web applications for their group project.

- Database and Interface design and implementation are fundamental skills for any computer scientist.
- The ability to design and implement databases and interfaces is a highly sought after skill in industry, and is a key component of many job roles.

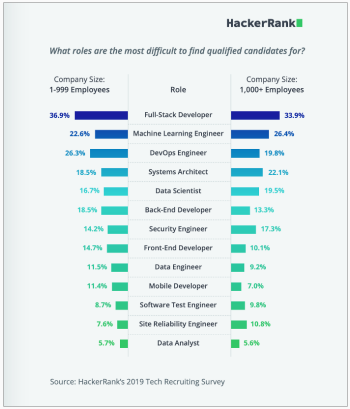


Figure 8: 2019 HackerRank Survey

Questions?