Module Overview

Databases and Interfaces

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Overview

This Lecture

- Introduce teaching team
- Overview of module aims and key topics covered:
  - Databases: Design principles, relational modeling and SQL
  - Interfaces (HTML & CSS) and linking to databases
- Highlight module assessments
  - Coursework, Lab work, quizzes and exam
- Expectations for attendance, participation, and communication
- Emphasize importance of student feedback for improvements

Teaching Team

Module Convener: Matthew Pike

- **Name**: Dr. Matthew Pike
- **Office**: PMB-435
- **Email**: matthew.pike@nottingham.edu.cn
- **Office Hours**: Mondays, 14:00 - 16:00

Figure 1: Please call me: “Matt”

Module Convener: Yuan Yao

- **Name**: Dr. Yuan Yao
- **Office**: PMB-438
- **Email**: yuan.yao@nottingham.edu.cn
- **Office Hours**: Mondays, 14:00 - 16:00

Figure 2: Please call me: “Yuan”

Lab Support and Technician: Jane Zhao

- **Name**: Ms Jane Zhao
- **Office**: PMB-320
- **Email**: jane.zhao@nottingham.edu.cn
- **Office Hours**: Jane does not have office hours.

Figure 3: Please call me: “Jane”

Graduate Teaching Assistant

- **Name**: Mr. Huayan Zhang
- **Email**: huayan.zhang@nottingham.edu.cn
- **Office Hours**: Huayan does not have office hours.

Figure 4: Please call me: “Huayan”

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 all about?
  - 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 be thoughtful in your responses.

Outline of Module Content

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

Common Challenges (Complaints?)

- “There are too many programming languages and technologies to learn in DBI”
  - We understand this concern. Unfortunately, complex interplay of technologies is inherent to web development. Each technology serves a specific purpose that others cannot easily fulfill.
- “The module work is too difficult” / “The module work is too easy”
  - Students enter Qualifying Year with varying levels of experience. Whether you find the work challenging or straightforward, we encourage you to dig deeper - experiment, create, and expand 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, 2015
  - ISBN: 978-1292061184
- The textbook is available in the library.
- The textbook is *extremely* detailed and a very useful resource. It is recommended that you read the relevant chapters as we progress through the module.

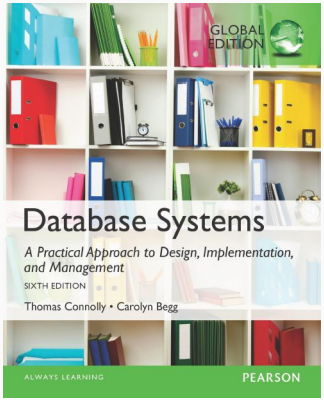


Figure 5: Database Systems: A Practical Approach to Design, Implementation, and Management

Module Organisation

Module Schedule

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

Assessment Breakdown

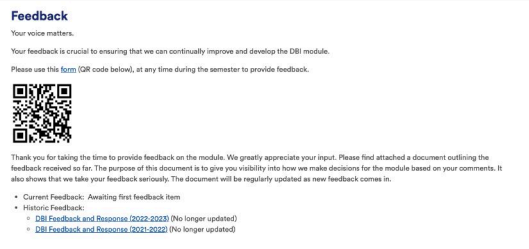
- **50%** - Written Examination.
  - Revision lecture in Semester Week 13.
  - Past Papers are available on Moodle. Solutions will **NOT** be provided.
- **50%** - Coursework.
  - **25%** - Coursework 1: Continuous Weekly Assessment & Quiz.
    - 10% - Weekly lab tasks. Submissions must demonstrate reasonable effort.
    - 15% - Midsemester Quiz (on database content).
  - **25%** - Coursework 2: Web-System Implementation.
    - Complete a database driven web-application.

Communication

- All module communication will be performed 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 respond to your question as soon as possible.
  - If you have a question about the module, it is likely that other students 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 the teaching team directly.
  - Do not send duplicate copies of the same email to multiple teaching staff members - instead, include all relevant teaching staff in a single email.

Feedback

- We welcome your feedback on the module.
- Please use the “Feedback” mechanism on Moodle to provide feedback.
- We will use your feedback to improve the module.
- We document and respond to all feedback via the “DBI Feedback and Response” document on Moodle. This document is updated regularly.
- Whilst the feedback form is not anonymous, we will not share your name or student ID with anyone outside of 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. We greatly appreciate your input. Please find attached a document outlining the feedback received so far. The purpose of this document is to give you visibility 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 regularly updated as new feedback comes in.

- Current Feedback: Awaiting first feedback item
- Historic Feedback:
  - DBI Feedback and Response (2022-2023) (No longer updated)
  - DBI Feedback and Response (2021-2022) (No longer updated)

Figure 6: 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 organized 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 be familiar with the University's Academic Misconduct policy.
  - https://www.nottingham.ac.uk/studentservices/servicedetails/appeals-complaints-and-conduct/academic-misconduct.aspx
- We do check every submission for plagiarism. Every year, students are caught plagiarising and are penalised accordingly.
  - You do not want to be one of these students.
- You'll be briefed on this matter in the upcoming School of Computer Science induction session. But our practical advice is:
  - If you are unsure about what constitutes plagiarism, please ask the teaching team.
  - Do not copy code from the internet without referencing it.
  - Do not share your code with other students.
  - Do not share your code on public repositories (e.g. GitHub).
  - Be cautious of your dorm-mates and friends asking for your code.

DBI in the 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.

DBI and your Career

- 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.

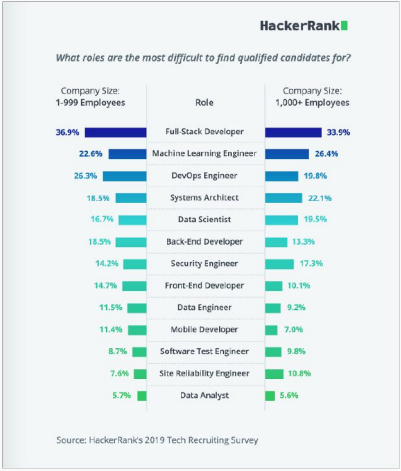


Figure 7: 2019 HackerRank Survey

Questions?