# COMM1822

Term 2 2022

## Introduction to Databases
## for Business Analytics

Week 1  Introduction

Lecturer: Kam-Fung (Henry) Cheung
E-mail: kf.cheung@unsw.edu.au

Assignment Project Exam Help

https://eduassistpro.github.io/

Add WeChat edu_assist_pro

# Copyright

- There are some file-sharing websites that specialise in buying and selling academic work to and from university students.

<span style="color:red">Assignment Project Exam Help</span>

- If you upload your original wor           other student downloads and presents it as their own eit <span style="color:red">https://eduassistpro.github.io/</span> **it be found guilty of collusion — even years after graduatio**

<span style="color:red">Add WeChat edu_assist_pro</span>

- These file-sharing websites may also accept purchase of course materials, **such as copies of <u>lecture slides</u> and <u>tutorial handouts</u>. By law, the copyright on course materials, developed by UNSW staff in the course of their employment, belongs to UNSW. It constitutes copyright infringement, if not academic misconduct, to trade these materials.**

UNSW
SYDNEY

# Acknowledgement of Country

UNSW Business School acknowledges the Bidjigal (Kensington campus) and Gadigal (City campus) the traditional custodians of the lands where each campus is located.

Assignment Project Exam Help

We acknowledge all Aboriginal and Torres St Islander Elders, past and present and thei communities who have shared and practiced their teachings over thousands of years including business practices.

https://eduassistpro.github.io/

Add WeChat edu_assist_pro

UNSW Business School. (2022, May 7). *Acknowledgement of Country* [online video]. Retrieved from https://vimeo.com/369229957/d995d8087f

We recognise Aboriginal and Torres Strait Islander people's ongoing leadership and contributions, including to business, education and industry.

# COMM1822 Lecture and Tutorial

Assignment Project Exam Help

ER Model

M

https://eduassistpro.github.io/

Ql

SQL DML

Add WeChat edu_assist_pro

UNSW
SYDNEY

# Plan: W1 Learnings

- **Data** vs. **information**
- Data stored in **databases**
- Database management system (**DBMS**)
- **Database design** defines data
- The next big thing: **big data**

Chapter 1

ase Systems

1-7

Assignment Project Exam Help

https://eduassistpro.github.io/

Add WeChat edu_assist_pro

# Data vs Information

| Data | Information |
|---|---|

- Raw facts
  - Have not yet been process
    reveal their meaning to the
    user

- Building blocks of information

ed by processing raw
reveal its meaning

es

of **knowledge**

- Should be accurate, relevant,
  and timely to enable good
  decision making

e.g., marks for your quiz, assignment, …, in a course

e.g., WAM (Weighted Average Mark) -> How
you did at UNSW

8

# Introducing Database

- A shared, integrated computer structure that stores a collection of:
  - **End-user data** – Raw facts of interest to end user
  - **Metadata**: **"Data a** <span style="color:red">d-user</span> data are integrated and managed
    - ❑ **Describe data characteristics** <span style="color:red">and</span> <span style="color:red">Interested in</span>
- **Database management system (DBMS)**
  - Collection of programs
  - Manages the database structure
  - Controls access to data stored in the database

<span style="color:blue">Like a steward</span>

<span style="color:red">e.g., a set of dates → Start of a project, Evaluation of the progress, End of the project, …</span>

<span style="color:red">Assignment Project Exam Help</span>

<span style="color:red">https://eduassistpro.github.io/</span>

<span style="color:red">Add WeChat edu_assist_pro</span>

Assignment Project Exam Help

https://eduassistpro.github.io/

Add WeChat edu_assist_pro

# Metadata (Data Dictionary) Example

| Data Item | | Value | | | |
|-----------|------|--------|-----|-----|-------------|
| **Name** | **Type** | **Length** | **Min** | **Max** | **Description** |
| Course | Alphanumeric | 100 | | | CourseID and Name |
| Class | Integer | | | 9 | Class Number |
| Semester | Alphanumeric | | | | Semester and Year |
| Name | Alphanumeric | 50 | | | Student Name |
| ID | Integer | 7 | | | Student ID |

Alice Tomson (zID: 1234567) takes COMM1822 Introduction to Databases for Business Analytics (Class: 1) in Term 2 2022.

# Data in Context: Google

Assignment Project Exam Help

https://eduassistpro.github.io/

Add WeChat edu_assist_pro

# Data in Context: Apple

Assignment Project Exam Help

https://eduassistpro.github.io/

Add WeChat edu_assist_pro

# Basic Terminology

- **Character**: Most basic element of data.

- **Field**: Contains data (composed of characters).

- **Record**: Set of related fields.

- **Database**: Collects related r

- **DBMS**: Manages the databa

<span style="color:red">Assignment Project Exam Help</span>

<span style="color:red">https://eduassistpro.github.io/</span>

<span style="color:red">Add WeChat edu_assist_pro</span>

Source: psu.edu

# History of Handling Data

- **Manual filing** systems.

<span style="color:red">not efficient</span>

<span style="color:red">Assignment Project Exam Help</span>

- Computerised filing systems

<span style="color:red">https://eduassistpro.github.io/</span>

- **Database** systems.

<span style="color:red">Add WeChat edu_assist_pro</span>

<span style="color:red">more efficiently</span>

Source: bizfluent.com

# Advantages of Database Systems

- **Reduced** data **inconsistency** and **anomalies**.
- **Reduced** data **redundancy** and improved data sharing. <span style="color:red">e.g. data storage</span>
- Increased application development **productivity**.
- **Reduced** data struct <span style="color:red">https://eduassistpro.github.io/</span> blems.
- **Easier** to create, acc e data.
- Enforcement of **standards**. <span style="color:red">e.g., Mark nalytics Departments using the same dataset</span>
- Central **security**. <span style="color:red">e.g. who can access what data – someone can write/modify data; someone can only read data</span>
- Standardized **backup** and **recovery**.
- **Concurrency** handling.

<span style="color:red">Assignment Project Exam Help</span>

<span style="color:red">Add WeChat edu_assist_pro</span>

# Recap: W1 Learnings

- **Data** vs. **information**

- Data stored in **databases**

- Database management

- **Database design** defin https://eduassistpro.github.io/

- The next big thing: **big data**

# Questions

Assignment Project Exam Help

https://eduassistpro.github.io/

Add WeChat edu_assist_pro

Source: tryinteract.com