01 Database Management Introduction

潘得龍

telung@yuntech.edu.tw

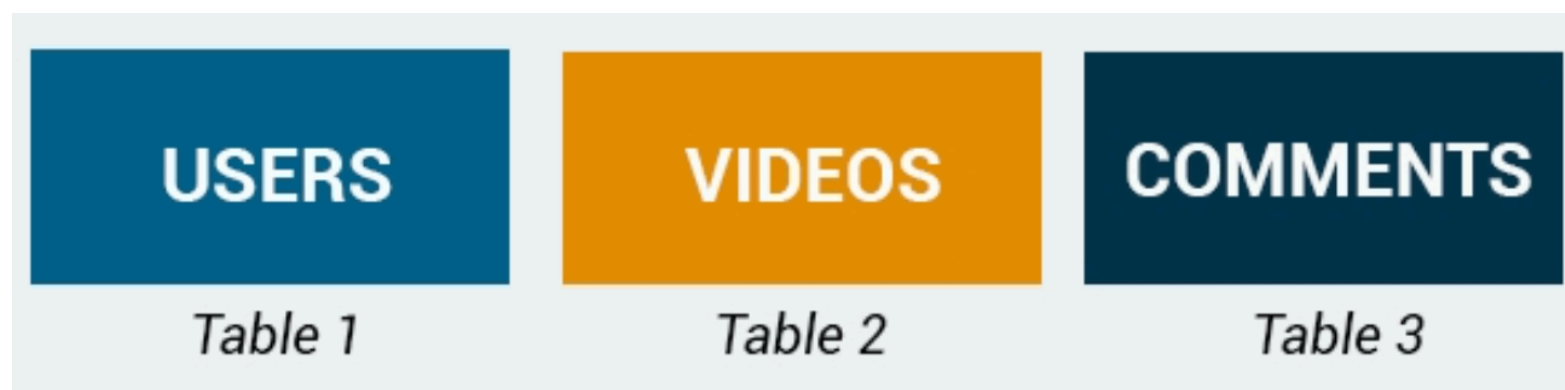# Syllabus

- 教學大綱

- elearning.yuntech.edu.tw 網路學園

教學方式與評量方式

- 平常練習作業 (40%)

- 期中與期末評量 (30% + 30%)

A <u>D</u>ata<u>b</u>ase

- A database is a collection of data that is organized in a manner that facilitates ease of access, as well as efficient management and updating.

- A database is made up of tables that store relevant information.   <u>RDBMS - Relational DB Management System</u>

- For example, you would use a database, if you were to create a website like YouTube, which contains a lot of information like videos, usernames, passwords, comments.

USERS	VIDEOS	COMMENTS
Table 1	Table 2	Table 3

Database Tables

- A table stores and displays data in a structured format consisting of <u>columns</u> and <u>rows</u> that are similar to those seen in Excel spreadsheets.

- Databases often contain multiple tables, each designed for a specific purpose. For example, imagine creating a database table of names and telephone numbers.

- First, we would set up columns with the titles FirstName, LastName and TelephoneNumber.

- Each table includes its own set of fields, based on the data it will store.

FirstName	LastName	TelephoneNumber
John	Smith	715-555-1230
David	Williams	569-999-1719
Chloe	Anderson	715-777-2010
Emily	Adams	566-333-1223
James	Roberts	763-777-2956

Primary Key (主鍵)

- A primary key is a field in the table that uniquely identifies the table records.

- The primary key's main features:
  - It must contain a unique value for each row.
  - It cannot contain NULL values.

- For example, our table contains a record for each name in a phone book. The unique ID number would be a good choice for a primary key in the table, as there is always the chance for more than one person to have the same name.

ID	FirstName	LastName	TelephoneNumber
1	John	Smith	715-555-1230
2	David	Williams	569-999-1719
3	Chloe	Anderson	715-777-2010
4	Emily	Adams	566-333-1223
5	James	Roberts	763-777-2956

What is SQL?

- SQL stands for Structured Query Language.

- SQL is used to access and manipulate a database.

- MySQL is a program that understands SQL.

- SQL can:

  - insert, update, or delete records in a database.

  - create new databases, table, stored procedures, views.

  - retrieve data from a database, etc.

SQL is an ANSI (American National Standards Institute) standard, but there are different versions of the SQL language.
Most SQL database programs have their own proprietary extensions in addition to the SQL standard, but all of them support the major commands.

小測驗

1. 資料庫是?
   1. 一種程式語言。
   2. 資料的集合。

2. Table 由哪兩個重要的元素組成？

3. 專門使用於建立、存取資料庫的語言是？

Assignment for Today

- elearning.yuntech.edu.tw

- 自我介紹與照片