



# 程式設計概論

## PROGRAMMING 101

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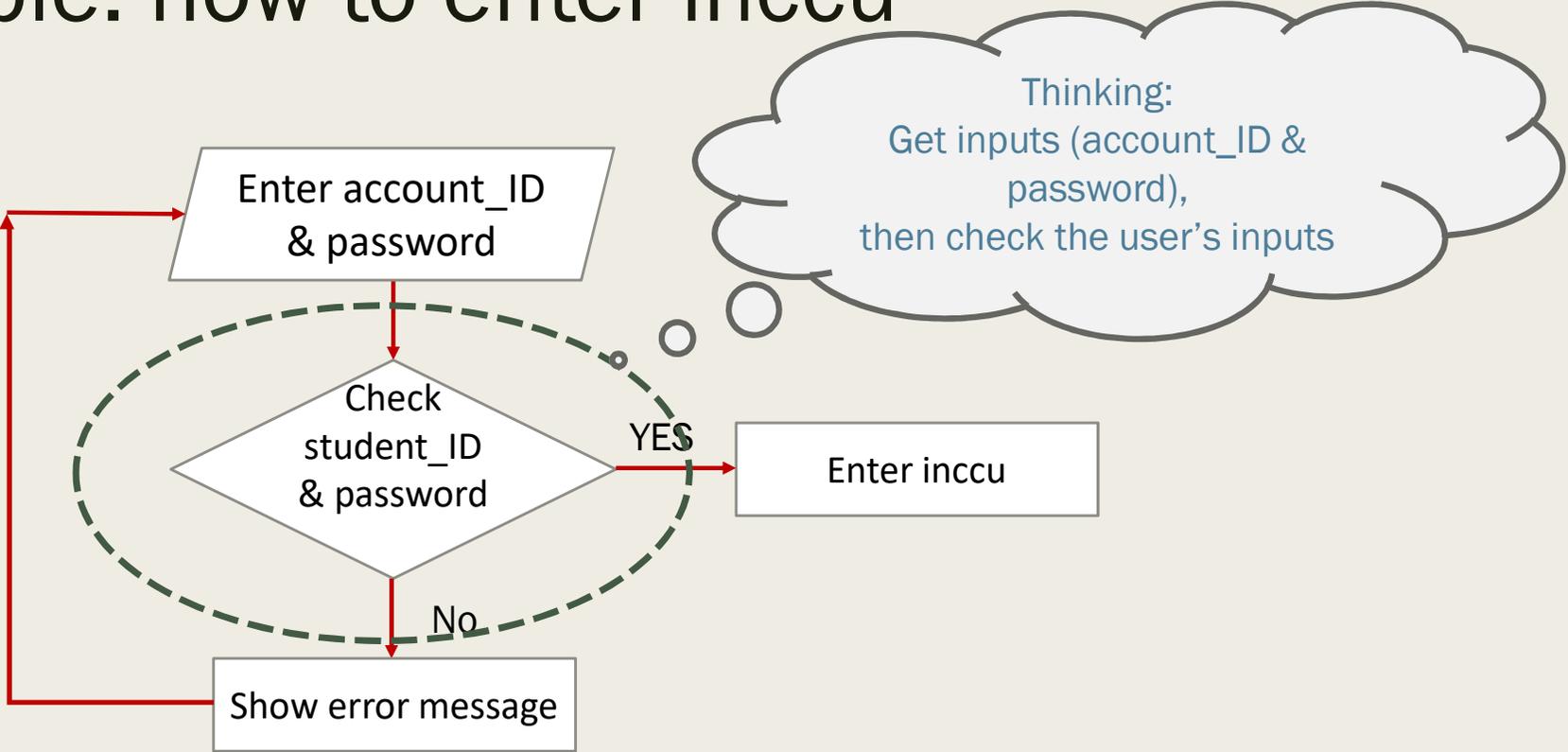
# Outline

- Objective
- About this course
- Content
  - *About Python*
- Grading
- Teaching Assistant (TA)
- About something
- Grouping
- Q & A

# Objective

- 邏輯的訓練
  - 運算思維
  - 邏輯推理
- 資訊化的時代需兼具的資訊能力
- 具備分析資料的能力
- 提供多元化的發展
- 具備跨領域的能力

# Example: how to enter inccu



# This course

- 課堂練習題(exercises)
- 回家作業(HW)
- 隨堂測驗(quizzes)
- 期中考: 不能用生成式AI的工具
- 分組討論 (group discussion)
- 期末報告 (group project)
- Textbook: Starting Out With Python, Second Edition

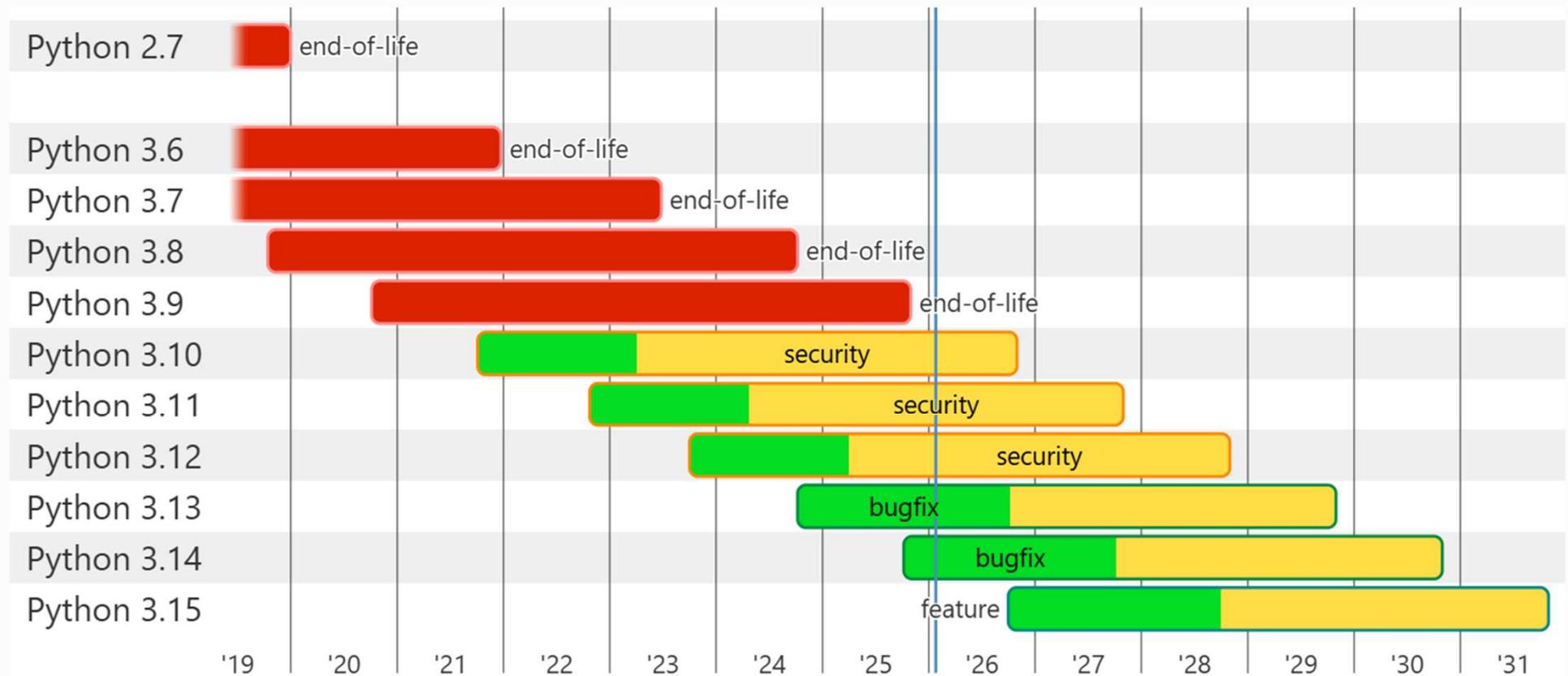
# Origin of Python

- The founder of Python is Guido van Rossum (吉多·范羅蘇姆, born 31 January 1956)
- Rossum received a master's degree in mathematics and computer science from the University of Amsterdam in 1982
- During the Christmas season of 1989, Van Rossum, in order to pass the time, decided to develop a new scripting language interpreter.
- Van Rossum remains the primary developer of Python.
- His goal is “Computer Programming for everyone”
- Python 2.0 was released on Oct. 16, 2000.
- Python 3.0 was released on Dec. 3, 2008.
- Now, Python 3.14.2: the release date is Oct. 7, 2025



# Active Python releases

For more information visit the [Python Developer's Guide](#).



<https://www.python.org/downloads/>

# Python

- Easy to learn
  - Powerful
  - Interpreter language
  - Cross-platform
  - Free and open source
  - Portability(可移植性)
  - Embeddability(可嵌入性)
  - ...
- **Various modules**
    - Artificial Intelligence (AI)
    - Data science
    - Machine learning/deep learning
    - Web crawler
    - Big data
    - Object-oriented programming (OOP)
    - ....



# Cross-platform ( 作業系統的平台 )

- *Windows 11/10/ 7*
- *Apple MacOS*
- *Linux*
  - Red hat
  - Ubuntu
  - CentOS
  - ...
- ...

# Python執行環境架構示意圖



# What is a library?(函式庫or程式庫)

- Library (函式庫): provide some functions and classes for programmers
- Python Library (函式庫是模組和套件的統稱)
  - Built-in function (內建函式):安裝Python時一併安裝的 functions , **啟動python開發環境便可使用**
  - Built-in Modules (or standard library):安裝Python時一併安裝的模組與套件 , **但使用時必須先進行匯入的動作**
  - External library(外部函式庫): 需安裝的模組和套件 , 再匯入才能使用 , 又稱第三方函式庫 , 網路上針對不同用途所推出的外部函式庫

# How to write and run our python programs?

1. Colaboratory (簡稱Colab): need google account
  2. Install Python and applications (Jupyter notebook or Pycharm ....)
    1. Install python (<https://www.python.org/>)
    2. Install applications (IDE): vs code, Jupyter notebook
- Textbook

# 1. Use ipad/PC/NB

## Google Colab：雲端的開發平台

Colaboratory 簡稱Colab，是由 Google 所提供，一個支援Python的雲端開發平台，主要目的是想要幫助人工智慧、機器學習和資訊教育的推廣。

- 開發者不需下載、不需安裝，只需要瀏覽器就可以運作，完全免費。
- 在Colab 中撰寫的程式碼預設是儲存在使用者的Google 雲端硬碟中，執行時由虛擬機器提供強大的運算能力，不會用到本機的資源，而且還提供免費的GPU。
- Colab 預設安裝了一些機器學習時常用的模組，像是TensorFlow、scikit-learn、pandas 等，讓你可以直接使用！



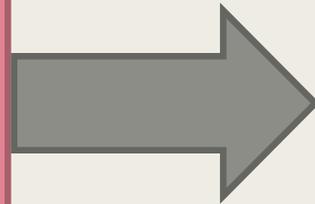
## 2. Use PC/NB run Python files

### How to write Python programs?(2 steps)

Step 1:

Install Python from the  
Website (3.12.5)

<https://www.python.org/>



Step 2:

Install Python  
environment system



- Jupyter Notebook(install anaconda)
- Pycharm community
- Visual studio code (VS code)

Teacher: The quickest way to learn a language  
is to speak with natives  
Me trying to learn Python:



# Grading

- Course participation: 30%
  - *Exercises*
  - *Quizzes*
- Homework (HW): 20%
- Midterm: 30%
- Final project: 20%

# Contact

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<https://www.cs.nccu.edu.tw/~sichiu/index.htm>

# 非常重要事項

- Q1: 可以用平板電腦嗎?
- Q2: 可以不買電腦嗎?
- Q3: 可以花錢請別人做HW嗎?
- Q4: 可以Quiz或midterm偷看同學的答案或線上通訊軟體問同學答案，甚至偷偷問別人或AI工具(chatGPT.....)?
- Q5: 可以期末專題時當廢材嗎?
- Q6: 可以整學期當廢材嗎?



# 回覆

- Q1: 可以用平板電腦嗎?
  - 只能使用半學期
- Q2: 可以不買電腦嗎?
  - 不行? 怎麼辦??????
- Q3: 可以花錢請別人做HW嗎?
  - 絕對不行不行
- Q: 可以Quiz或midterm偷看同學的答案或線上通訊軟體問同學答案，甚至偷偷問別班或AI工具(chatGPT.....)?
  - 不行
- Q: 可以期末專題過程中當廢材嗎?
  - 不行
- Q: 可以整學期當廢材嗎?
  - 請直接退選本門課

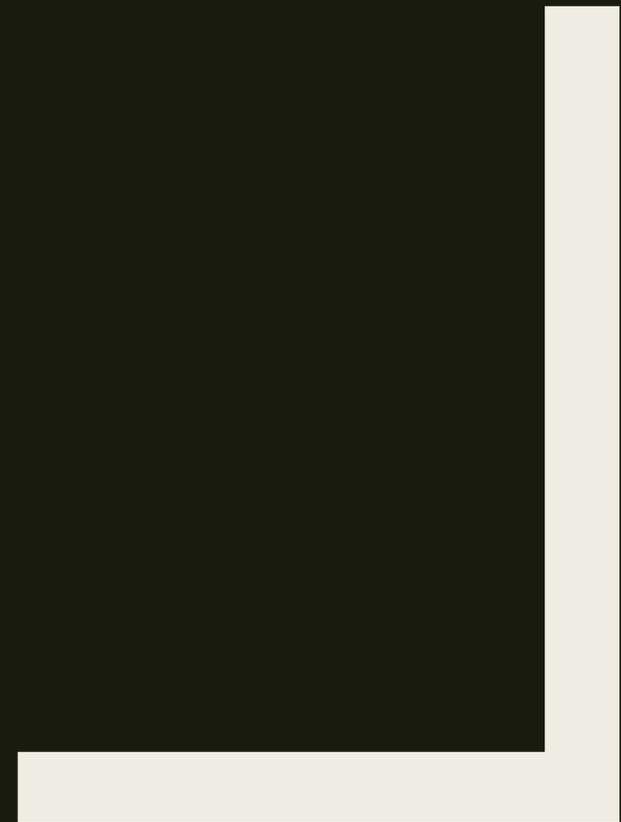
# Grouping

- 每組3-4人
- 加退選結束後進行分組
  - *自行分組、協助分組*

# Course in progress

- Do exercises every week
- Results of Group discussion
- Upload Python programs or results

# ABOUT TA

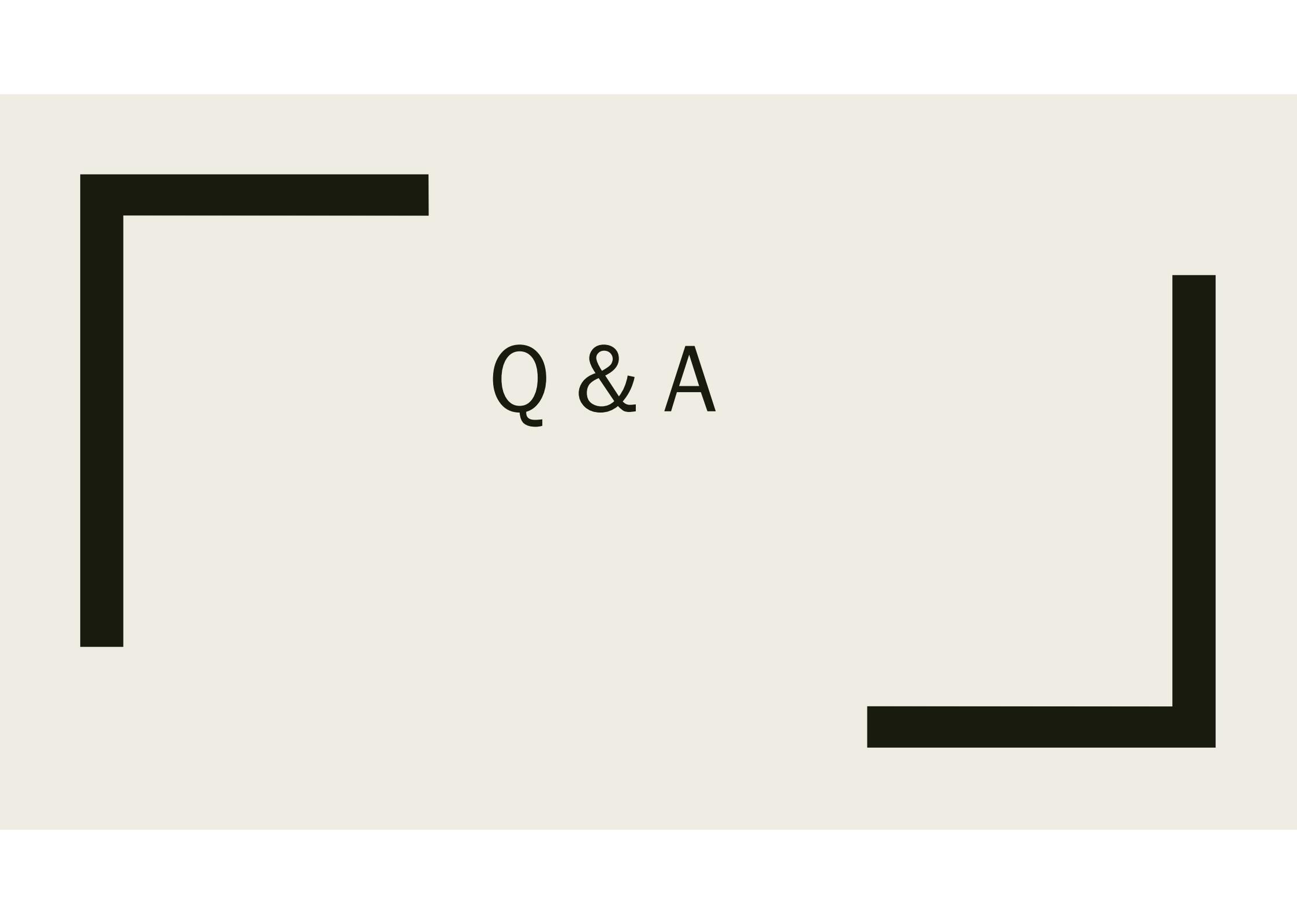


# Review

- E\_Textbook (on Moodle) Chapter1

期待這學期結束後 大家能





Q & A