

Practical A

Data Exploration and DBMS

Data Exploration in Pandas

In this practical we'll be using Python/[Pandas](#) to explore and visualize some example data using [Jupyter Notebooks](#) in [Google Collab](#).

The data files that we will be using in this prac, and many future pracs, are hosted on GitHub at github.com/PaulHancock/COMP5009_pracs

A Jupyter notebook for this section of the prac is available at this [link](#).

DBMS

In this exercise, you will create a database containing timetable information for this semester. Please use the example timetable on the next page. We will be using SQLite for this exercise, you can do this on your own machine or at <https://sqliteonline.com/>.

Part A:

Create a relation with a name "timetable" with the following attributes:

- class: the 4char/4digit code for the class
- activity: the kind of activity (eg, computer lab, workshop)
- day: three letter day code (eg thu)
- start_time: 24hour start time
- duration: the duration of the activity in hours

Record the SQL command that you used to create your relation.

Part B:

Insert records into the relation "timetable" according to the example above.

Verify that you have inserted the correct data using a "select" query.

Record the "insert" and "select" commands that you have used.

Part C:

Alter the relation "timetable" so that it now includes a new attribute end_time, which is calculated as $\text{end_time} = \text{start_time} + \text{duration}$. Once the "end_time" attribute has been created, delete the "duration" attribute. Display your modified table using another "select" query.

Record the SQL commands that you used to modify the table.

UNIT CODE	UNIT TITLE
COMP5004	Advanced Computing Topics
COMP5009	Data Mining
COMP5008	Data Structures and Algorithms
COMP5005	Fundamentals of Programming
COMP5001	Theoretical Foundns Comp Sci

Calendar

	Monday	Tuesday	Wednesday	Thursday	Friday
0800		COMP5005 Large Group Collaborative Session	COMP5005 Computer Laboratory		
0900					
1000		COMP5001 Workshop			
1100	COMP5008 Large Group Collaborative Session				
1200	COMP5001 Large Group Collaborative Session	COMP5004 Online Lecture			
1300	COMP5009 Computer Laboratory				
1400					COMP5004 Tutorial
1500					
1600		COMP5008 Computer Laboratory			
1700					
1800				COMP5009 Workshop	
1900					
2000					
2100					