ACCA7002 Database Systems
Tutorial Tasks

<u>Tutorial 5: Normalisation</u>

The aim of this exercise is to help you practice database normalisation techniques.

Task 5.1[1]**:** A company called *FastCabs* provides a taxi service to clients.
The table shown below displays some details of client bookings for taxis. Assume that a taxi driver is assigned to a single taxi, but a taxi can be assigned to one or more drivers.

Produce a set of 3NF relations (tables) from the table shown below.

DriverID	DriverName	TaxiID	JobID	JobDateTime	ClientID	ClientName	PickupAddress
D1	Joe Bull	T1	1	25/07/2019 10:00	C1	Anne Woo	1 Kings Road, Swansea
			2	29/07/2019 10:00			
D2	Tom Win	T2	3	30/07/2019 11:00	C1	Anne Woo	1 Kings Road, Swansea
D3	Jim Jones	T3	4	2/08/2019 13:00	C2	Mark Tin	10 High St, Swansea
D4	Stevin Win	T1	5	2/08/2019 13:00	C3	John Seal	22 Red Road, Swansea
D2	Tom Win	T2	6	25/08/2019 10:00	C4	Karen Bow	17 High St, Swansea

JobID -> JobDateTime, DriverID, TaxiID, ClientID
DriverID -> DriverName
ClientID -> ClientName, PickupAddress

R1(JobID, JobDateTime, DriverID, TaxiID, ClientID)
R2(DriverID, DriverName)
R3(ClientID, ClientName, PickupAddress)

[1] Adapted from Database Systems: A Practical Approach to Design, Implementation and Management by Thomas Connolly & Carolyn Begg

Task 5.2[1]**:** Students can lease university flats and some of the details of leases held by students for places in university flats are shown in the table structure below. A room flat number (RoomFlatNo) uniquely identifies each single room in all flats and is used when leasing a room to a student.

- Identify the functional dependencies that exist between the columns of the table and identify the primary key and any alternate key(s) (if present) for the table.
- Produce a set of 3NF tables from this table.

<u>Student Accommodation Leases Table</u>

```
StudentAccommodationLease(LeaseNo, StudentNo,
FlatRoomNo, FirstName, Surname, StartDate,
FinishDate, FlatNo, FlatAddress)
```

StudentAccommodationLease
LeaseNo
StudentNo
FlatRoomNo
FirstName
Surname
StartDate
FinishDate
FlatNo
FlatAddress

LeaseNo -> StudentNo, FlatRoomNo, StartDate, FinishDate
StudentNo -> FirstName, Surname
FlatRoomNo -> FlatNo
FlatNo -> FlatAddress

R1(LeaseNo, StudentNo, FlatRoomNo, StartDate, FinishDate)
R2(StudentNo, FirstName, Surname)
R3(FlatRoomNo, FlatNo)
R4(FlatNo, FlatAddress)

[1] Adapted from Database Systems: A Practical Approach to Design, Implementation and Management by Thomas Connolly & Carolyn Begg