# Description of all assumptions you have made in your design (You can also add more requirements here). (2 mark)

- 1. Managers may also be senior teachers, teachers, and administrators.
- 2. The client may choose to appoint a teacher to attend the first class during the interview. Otherwise, the teacher is the interviewer.
- 3. The time of interview is outside class hours.
- 4. Check the vehicle every night and repair it overnight if it breaks down.
- 5. Students are asked if they need to be transported before each test.
- 6. Each student takes an hour to complete the exam.
- 7. The time a car checks is not counted in a timetable.
- 8. Record the manager's phone number without regard to the general staff.
- 9. Teachers can be changed at the beginning of the course, but not during the course.
- 10. There are no cars in administrative staff.

#### Data type hypothesis:

- 1. OfficeNo, staffNo, clientNo, registrationNo, are all five-digit strings of uppercase letters and Numbers.
- 2. The value of staffType is Instructor/Administrative Staff, Senior Instructor.
- 3. The value of payMethod is Single/Interchangeable.
- 4. The value of pickUp is Yes/No.
- 5. If test passed, the value of failReason is blank, not NULL.
- 6. The value unit of mileage is miles by default.
- 7. If there is no problem in vehicle inspection, the carCondition value is good, and if there is a problem, write down the specific problem.
- 8. The weekNo format is year-week.

# A conceptual schema (ER diagram) (with explanation of how the database design supports the requirements). (3 mark)

Our initial conceptual schema (ER diagram) was designed as the Fig.1 shows. We will explain every relation one by one.

In Easy Drive School, staff's information needs to save in database and each staff has an office plus many staff can in the same office. In STAFF relation, staffNo (staff number) is as primary key of STAFF entity; firstName (staff's first name), lastName (staff's last name), DoB (date of birth), age (staff's age), gender (staff's gender), staffType (staff's identification: Instructor/Administrative Staff/Senior Instructor), phoneNumber (staff's phone number), OFFICE\_officeNo (staff's office number) as the rest of attributes of STAFF table.

Every office's information also needs to be registered. In OFFICE relation, officeNo (office number) is the primary key and MANAGER\_staffNo (the staffNo of the manager the same as STAFF\_staffNo in OFFICE\_has\_STAFF(MANAGER)) is the foreign key from OFFICE\_has\_STAFF(MANAGER), city, address, officeName (office's name) are the rest of the attributes of OFFICE.

Due to the n:n relationship between OFFICE and STAFF – many office and have many staff, we use an associative relation between two tables called OFFICE\_has\_STAFF(MANAGER).

This relation we use to represent every manager of each office. OFFICE\_officeNo (officeNo), STAFF staffNo (manager's staffNo) are the primary key for this entity.

For every instructor or senior instructor, they all have their own car for coaching and the corresponding information of car. In CAR relation, registrationNo (car's registration number) is as primary key and STAFF\_staffNo (instructor's staffNo, 1:1 relationship between CAR and STAFF automatically generate) is the foreign key. The rest of the attributes are checkDate, carCondition.

For every client except of register their basic information, also need to have an interview which will record their first lesson's instructor, the time of interview, the pay method and the office they registered. In CLIENT relation, clientNo (client's registration number), registerDate are as primary key. OFFICE\_officeNo (the register officeNo, 1:1 relationship between CLIENT and OFFICE automatically generate) is the foreign key. The rest of the attributes of CLIENT are firstName (client's first name), lastName (client's last name), DoB

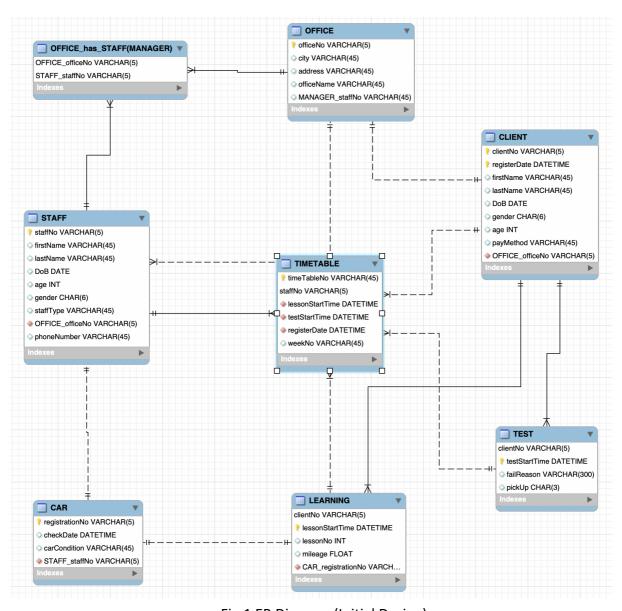


Fig.1 ER Diagram (Initial Design)

(client's birthday), gender (client's gender), age (client's age), payMethod (client's pay method).

Each client can decide to change or ask for a particular instructor in any lesson at any time and can arrange their own timetable for the learning. In LEARNING relation, clientNo (the client's registration number in CLIENT) and lessonStartTime are the primary key, CAR\_registrationNo (1:1 relationship between CAR and LEARNING automatically generate) is the foreign key. One tuple will be added into the relation as long as one class is taken by one client (i.e. every client will have many tuples in the relation after they finish the whole program). The rest of the attributes are lessonNo (the number of the lesson), mileage (mileage taken by client in each lesson).

For every client finish learning, they can have an exam. If client not pass the fail reason should be recorded. Client can ask for pick up/drop off service in each exam. In TEST relation, clientNo (the client's registration number in CLIENT) and testStartTime are the primary key, failReason (the fail reason, if success then it's NULL) and pickUp (weather needed to pick up, Yes or No).

For each staff they can look up their next week time schedule which including time arrangement for coaching, picking up client for exam and interviewing. In TIMETABLE relation, the timeTableNo (sequential number of timetable tuples in order to distinguish the same staffNo tuples) and staffNo (the instructor's number in STAFF) are the primary key. lessonStartTime (coaching time in LEARNING), testStartTime (pick up time in TEST) and registerDate (interview time in CLIENT) are the foreign key. weekNo (number of the week in a year) is the rest of the attributes.

The relational database schema for your database. You should also identify all primary and foreign keys in your design. You should *validate* your relations using normalization, and *explain* why they are in 4th Normal Form. (2 marks)

o The relational database schema

STAFF (staffNo, firstName, LastName, DoB, age, gender, staffType, OFFICE\_officeNo)

**Primary key:** staffNo

Foreign key: OFFICE\_officeNo

OFFICE has STAFF(MANAGER) (OFFICE officeNo, STAFF staffNo)

Primary key: OFFICE\_officeNo, STAFF\_staffNo

MANAGERPHONE (staffNo, phoneNumber)

**Primary key**: staffNo

CLIENT (clientNo, firstName, lastName, DoB, gender, age)

Primary key: clientNo

CLIENTREGISTRATION (<u>registerDate</u>, payMethod, OFFICE\_officeNo, CLIENT\_clientNo)

Primary key: registerDate

Foreign key: OFFICE\_officeNo, CLIENT\_clientNo

OFFICE (officeNo, city, address, MANAGER staffNo)

Primary key: officeNo

Foreign key: MANAGER\_staffNo

CARREGISTRATION (staffNo, registrationNo)

Primary key: stuffNo

Foreign key: registrationNo

CAR (registrationNo, condition, checkDate)

Primary key: registrationNo

LEARINGCAR (<u>registrationNo</u>, <u>clientNo</u>) **Primary key:** registrationNo, clientNo

LEARNING (clientNo, lessonStartTime, lessonNo)

Primary key: clientNo, lessonStartTime

LEARNINGMILEAGE (clientNo, lessonStartTime, mileage)

Primary key: clientNo, lessonStartTime

TEST (clientNo, testStartTime, pickUp, failReason)

Primary key: clientNo, testStartTime Foreign key: clientNo, testStartTime

TIMETABLE (staffNo, lessonStartTime, testStartTime, registerDate)

Primary key: staffNo

Foreign key: lessonStartTime, testStartTime, registerDate

#### Normalization

We use the relations in Fig.1 to start normalization. The final normalization result showed in Fig.2.

STAFF relation

The original entity is:

STAFF
staffNo
firstName
LastName
Dob
age
gender
phoneNumber

staffType	
OFFICE_officeNo	

# Functional dependencies:

staffNo -> firstName, lastName, Dob, age, gender, phoneNumber, staffType, OFFICE\_officeNo
OFFICE officeNo -> phoneNumber

It satisfies 2NF, but doesn't satisfy 3NF because phoneNumber is transitively dependent on staffNo through OFFICE\_officeNo. Considered that we just need managers' phone numbers, thus we put phoneNumber into entity MANAGERPHONE.

# The changed entity is:

STAFF
staffNo
firstName
LastName
Dob
age
gender
staffType
OFFICE_officeNo

It satisfies 2NF, 3NF and 4NF.

#### Functional dependencies:

staffNo -> firstName

staffNo -> lastName

staffNo -> DoB

staffNo -> gender

staffNo -> age

staffNo -> staffType

staffNo -> OFFICE\_officeNo

# After adding phoneNumber,

OFFICE_has_STAFF(MANAGER)
OFFICE_officeNo
STAFF_staffNo

#### Change to

OFFICE_has_STAFF(MANAGER)
OFFICE_officeNo

STAFF_staffNo
phoneNumber

# The functional dependencies:

OFFICE\_officeNo -> STAFF\_staffNo, phoneNumber STAFF\_staffNo -> phoneNumber

It satisfies 2NF, doesn't satisfy 3NF because phoneNumber is transitively dependent on STAFF\_staffNo through OFFICE\_officeNo.

Then we split the entity:

OFFICE_has_STAFF(MANAGER)
OFFICE_officeNo
STAFF_staffNo

MANAGERNUMBER
staffNo
phoneNumber

They all satisfy 2NF, 3NF and 4NF. Functional dependencies:

OFFICE\_officeNo -> STAFF\_staffNo staffNo -> phoneNumber

### • OFFICE relation

OFFICE
officeNo
city
address
MANAGER_staffNo
officeName

# Functional dependencies:

officeNo -> city officeNo -> address officeNo -> MANAGER\_staffNo officeNo -> officeName

It eliminates the partial dependence of non-primary attribute on code and the dependence of transfer function and eliminates the multi-value dependence of non-trivial and non-function.

#### CARREGISTRATION relation

CARREGISTRATION
staffNo
registrationNo

# Functional Dependency:

staffNo -> registrationNo

The original relation that we designed satisfies 1NF which means the intersection of each row and column contains one and only one value. Besides, we found that there is no non-primary-key attribute transitively depend on the primary key and every determinant is a candidate key in this relation. There is also no multi-valued dependency in CARREGISTRATION. Therefore, we get the relation in 4th Normal Form.

#### CAR relation

CAR
registrationNo
condition
checkDate

#### **Functional Dependency:**

registrationNo -> condition, checkDate

The original relation that we designed satisfies 1NF which means the intersection of each row and column contains one and only one value. Besides, we found that there is no non-primary-key attribute transitively depend on the primary key and every determinant is a candidate key in this relation. There is also no multi-valued dependency in CAR. Therefore, we get the relation in 4th Normal Form.

#### • LEARNINGCAR relation

LEARINGCAR
registrationNo
clientNo

#### Functional Dependency:

registrationNo -> clientNo

The original relation that we designed satisfies 1NF which means the intersection of each row and column contains one and only one value. Besides, we found that there is no non-primary-key attribute transitively depend on the primary key and every determinant is a candidate key in this relation. There is also no multi-valued dependency in LEARNINGCAR. Therefore, we get the relation in 4th Normal Form.

#### • LEARNING relation

LEARING
clientNo
lesson Start Time
lessonNo

#### **Functional Dependency:**

clientNo -> lessonStartTime, lessonNo

The original relation that we designed satisfies 1NF which means the intersection of each row and column contains one and only one value. Besides, we found that there is no non-primary-key attribute transitively depend on the primary key and every determinant is a candidate key in this relation. There is also no multi-valued dependency in LEARNING. Therefore, we get the relation in 4th Normal Form.

#### • LEARNINGMILEAGE relation

LEARNINGMILEAGE
clientNo
lessonStartTime
mileage

# Functional Dependency:

clientNo -> lessonStartTime, mileage

The original relation that we designed satisfies 1NF which means the intersection of each row and column contains one and only one value. Besides, we found that there is no non-primary-key attribute transitively depend on the primary key and every determinant is a candidate key in this relation. There is also no multi-valued dependency in LEARNINGMILEAGE. Therefore, we get the relation in 4th Normal Form.

#### • CLIENT relation

CLIENT
clientNo
registerDate
firstName
lastName
DoB
gender

age
OFFICE_officeNo
payMethod

Split this entity into two entities, CLIENT and CLIENTREGISTER, to satisfy 2NF.

CLIENT
clientNo
firstName
lastName
DoB
gender
age

#### Functional dependencies:

clientNo -> firstName clientNo -> lastName clientNo -> DoB clientNo -> gender clientNo -> age

CLIENTREGISTER
clientNo
registerDate
OFFICE_officeNo
payMethod

#### Functional dependencies:

clientNo -> registerDate
clientNo -> OFFICE\_officeNo
clientNo -> payMethod

It eliminates the partial dependence of non-primary attribute on code and the dependence of transfer function and eliminates the multi-value dependence of non-trivial and non-function.

#### TEST relation

The original relation that we designed satisfies 1NF which means the intersection of each row and column contains one and only one value. Besides, we found that there is no non-primary-key attribute transitively depend on the primary key and every determinant is a candidate key in this relation. There is also no multi-valued dependency in TEST. Therefore, we get the relation in 4<sup>th</sup> Normal Form.

#### The functional dependencies:

clientNo, testStartTime -> pickUp
clientNo, testStartTime -> failReason

TEST
clientNo(primary key)
testStartTime(primary key)
pickUp
failReason

# • TIMETABLE relation

Because there are no non-primary attributes that depend partly on the code and on the transfer function, there are no non-trivial and non-functional multivalued dependencies.

# Functional dependency:

timeTableNo,staffNo -> lessonStartTime, testStartTime, registerDate, weekNo

TIMETABLE
timeTableNo
staffNo
lesson Start Time
testStartTime
registerDate
weekNo

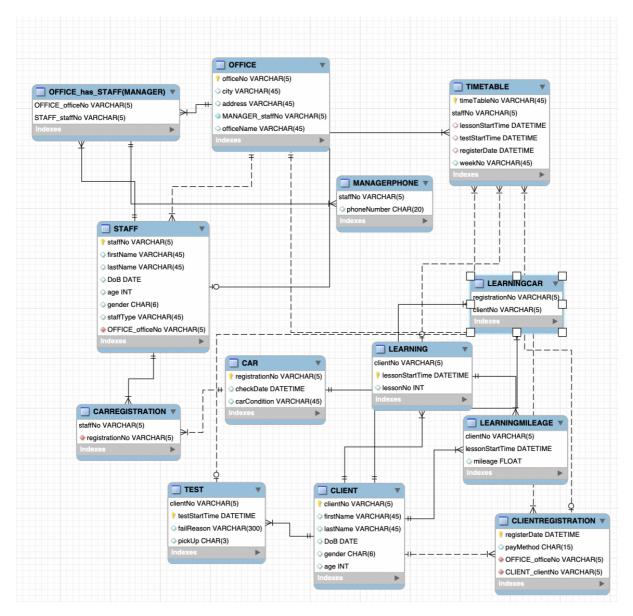


Fig. 2 ER Diagram in 4NF (Final Design)

The sample test data. This test data should be carefully designed in order to test that your queries will work under any conditions. (1 marks)

INSERT INTO 'mydb'.'office' ('officeNo', 'city', 'address', 'MANAGER\_staffNo', 'officeName') VALUES ('A0001', 'Glasgow', '145 Kelvinhaugh St, Glasgow', 'A0001', 'Bearsden'); INSERT INTO 'mydb'.'office' ('officeNo', 'city', 'address', 'MANAGER\_staffNo', 'officeName') VALUES ('A0002', 'London', '385-389 Oxford St, London', 'A0007', 'Bridge'); INSERT INTO 'mydb'.'office' ('officeNo', 'city', 'address', 'MANAGER\_staffNo', 'officeName') VALUES ('A0003', 'Birmingham', '256 Colebrook St, Birmingham', 'A0011', 'Oxley');

```
INSERT INTO 'mydb'.'office' ('officeNo', 'city', 'address', 'MANAGER_staffNo', 'officeName')
VALUES ('A0004', 'Edinburgh', '023 Chambers St, Edinburgh', 'A0016', 'Ingliston');
INSERT INTO 'mydb'.'office' ('officeNo', 'city', 'address', 'MANAGER staffNo', 'officeName')
VALUES ('A0005', 'Liverpool', '029 Dale St, Liverpool', 'A0021', 'Albion');
INSERT INTO 'mydb'.'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0001', 'John', 'Davids', '1964-04-21', '56', 'male',
'Senior Instructor', 'A0001');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0002', 'Emma', 'Miller', '1987-06-12', '33',
'female', 'Senior Instructor', 'A0001');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0003', 'James', 'Brown', '1982-01-23', '38', 'male',
'Instructor', 'A0001');
INSERT INTO 'mydb'.'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0004', 'Alex', 'Thomas', '1962-12-12', '58', 'male',
'Instructor', 'A0001');
INSERT INTO 'mydb'.'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0005', 'Betty', 'Jones', '1991-08-23', '29', 'female',
'Administrative Staff', 'A0001');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0006', 'Chase', 'Walker', '1993-02-11', '27', 'male',
'Administrative Staff', 'A0001');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0007', 'Ryan', 'Smith', '1978-01-31', '42', 'male',
'Senior Instructor', 'A0002');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0008', 'Lily', 'Williams', '1984-04-20', '36',
'female', 'Senior Instructor', 'A0002');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0009', 'Black', 'Wilson', '1994-05-18', '26', 'male',
'Instructor', 'A0002');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0010', 'Cora', 'Clark', '1990-06-06', '30', 'female',
'Administrative Staff', 'A0002');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0011', 'Nicola', 'Jackson', '1975-07-18', '45',
'female', 'Senior Instructor', 'A0003');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0012', 'Jack', 'Lewis', '1981-04-23', '39', 'male',
'Senior Instructor', 'A0003');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0013', 'Justin', 'Lee', '1994-09-08', '26', 'male',
'Instructor', 'A0003');
INSERT INTO 'mydb'.'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
```

`staffType`, `OFFICE\_officeNo`) VALUES ('A0014', 'Nelly', 'Adams', '1995-05-05', '25',

'female', 'Administrative Staff', 'A0003');

```
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0015', 'Lucas', 'Evans', '1989-10-18', '31', 'male',
'Administrative Staff', 'A0003');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0016', 'Sean', 'Green', '1960-01-03', '60', 'male',
'Administrative Staff', 'A0004');
INSERT INTO 'mydb'.'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0017', 'Hunter', 'Phillips', '1976-09-30', '44',
'male', 'Senior Instructor', 'A0004');
INSERT INTO 'mydb'.'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0018', 'James', 'Brown', '1987-11-28', '33', 'nale',
'Senior Instructor', 'A0004');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0019', 'Louise', 'Backer', '1988-10-03', '32',
'female', 'Instructor', 'A0004');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0020', 'Judy', 'Mitchell', '1981-07-25', '39',
'female', 'Administrative Staff', 'A0004');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0021', 'Jack', 'Lee', '1961-06-30', '59', 'male',
'Senior Instructor', 'A0005');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0022', 'Andrew', 'Moore', '1973-02-16', '47',
'male', 'Instructor', 'A0005');
INSERT INTO 'mydb'. 'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
`staffType`, `OFFICE_officeNo`) VALUES ('A0023', 'Eric', 'Martin', '1975-04-26', '45', 'male',
'Instructor', 'A0005');
INSERT INTO 'mydb'.'staff' ('staffNo', 'firstName', 'lastName', 'DoB', 'age', 'gender',
'staffType', 'OFFICE officeNo') VALUES ('A0024', 'Arthur', 'Morgan', '1984-09-13', '36',
'male', 'Administrative Staff', 'A0005');
INSERT INTO 'mydb'.'client' ('clientNo', 'firstName', 'lastName', 'DoB', 'gender', 'age')
VALUES ('A0001', 'Logan', 'Scoot', '1981-04-20', 'male', '39');
INSERT INTO 'mydb'.'client' ('clientNo', 'firstName', 'lastName', 'DoB', 'gender', 'age')
VALUES ('A0002', 'Gemma', 'Ramirez', '1980-02-21', 'female', '40');
INSERT INTO 'mydb'.'client' ('clientNo', 'firstName', 'lastName', 'DoB', 'gender', 'age')
VALUES ('A0003', 'Bryan', 'Hall', '1995-09-16', 'male', '26');
INSERT INTO 'mydb'.'client' ('clientNo', 'firstName', 'lastName', 'DoB', 'gender', 'age')
VALUES ('A0004', 'Benjamin', 'Torres', '1991-03-24', 'male', '29');
INSERT INTO 'mydb'.'client' ('clientNo', 'firstName', 'lastName', 'DoB', 'gender', 'age')
VALUES ('A0005', 'Judy', 'Allen', '1987-11-13', 'female', '33');
INSERT INTO 'mydb'.'client' ('clientNo', 'firstName', 'lastName', 'DoB', 'gender', 'age')
VALUES ('A0006', 'Bill', 'Willimson', '1975-03-13', 'male', '45');
INSERT INTO 'mydb'.'office has staff(manager)' ('OFFICE officeNo', 'STAFF staffNo')
VALUES ('A0001', 'A0001');
```

```
INSERT INTO `mydb`.`office_has_staff(manager)` (`OFFICE_officeNo`, `STAFF_staffNo`)
VALUES ('A0002', 'A0007');
INSERT INTO 'mydb'.'office has staff(manager)' ('OFFICE officeNo', 'STAFF staffNo')
VALUES ('A0003', 'A0011');
INSERT INTO `mydb`.`office_has_staff(manager)` (`OFFICE_officeNo`, `STAFF_staffNo`)
VALUES ('A0004', 'A0016');
INSERT INTO 'mydb'.'office has staff(manager)' ('OFFICE officeNo', 'STAFF staffNo')
VALUES ('A0005', 'A0021');
INSERT INTO 'mydb'. 'managerphone' ('staffNo', 'phoneNumber') VALUES ('A0001',
'1410286271');
INSERT INTO 'mydb'. 'managerphone' ('staffNo', 'phoneNumber') VALUES ('A0007',
'2083461911');
INSERT INTO 'mydb'. 'managerphone' ('staffNo', 'phoneNumber') VALUES ('A0011',
'1210283625');
INSERT INTO 'mydb'. 'managerphone' ('staffNo', 'phoneNumber') VALUES ('A0016',
'1310183613');
INSERT INTO 'mydb'. 'managerphone' ('staffNo', 'phoneNumber') VALUES ('A0021',
'1511836211');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0001',
'2000-01-05 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0002',
'2000-01-06 21:00:00', 'tyre flat');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0003',
'2000-01-07 21:00:00', 'brake is broken');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0004',
'2000-01-05 21:30:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0005',
'2000-02-05 21:30:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0006',
'2002-01-04 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0007',
'2002-01-05 21:00:00', 'tyre flat');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0008',
'2002-01-06 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0009',
'2006-02-04 21:00:00', 'tyre flat');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0010',
'2006-02-05 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0011',
'2006-02-06 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0012',
'2020-02-04 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0013',
'2020-02-05 21:00:00', 'brake is broken');
```

```
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0014',
'2020-02-06 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0015',
'2020-02-06 21:00:00', 'good');
INSERT INTO 'mydb'.'car' ('registrationNo', 'checkDate', 'carCondition') VALUES ('C0016',
'2020-03-03 19:30:00', 'tyre flat');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0001', 'C0001');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0002', 'C0002');
INSERT INTO `mydb`.`carregistration` (`staffNo`, `registrationNo`) VALUES ('A0003', 'C0003');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0005', 'C0004');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0007', 'C0005');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0008', 'C0006');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0009', 'C0007');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0011', 'C0008');
INSERT INTO 'mydb'. 'carregistration' ('staffNo', 'registrationNo') VALUES ('A0012', 'C0009');
INSERT INTO 'mydb'. 'carregistration' ('staffNo', 'registrationNo') VALUES ('A0013', 'C0010');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0017', 'C0011');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0018', 'C0012');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0019', 'C0013');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0021', 'C0014');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0022', 'C0015');
INSERT INTO 'mydb'.'carregistration' ('staffNo', 'registrationNo') VALUES ('A0023', 'C0016');
INSERT INTO 'mydb'. 'clientregistration' ('registerDate', 'payMethod', 'OFFICE officeNo',
`CLIENT_clientNo`) VALUES ('1999-12-05 07:00:00', 'Single', 'A0001', 'A0001');
INSERT INTO 'mydb'.'clientregistration' ('registerDate', 'payMethod', 'OFFICE officeNo',
`CLIENT clientNo`) VALUES ('1999-12-06 07:00:00', 'Interchangeable', 'A0001', 'A0002');
INSERT INTO 'mydb'.'clientregistration' ('registerDate', 'payMethod', 'OFFICE officeNo',
`CLIENT clientNo`) VALUES ('2014-06-02 07:30:00', 'Single', 'A0002', 'A0003');
INSERT INTO 'mydb'.'clientregistration' ('registerDate', 'payMethod', 'OFFICE_officeNo',
`CLIENT clientNo`) VALUES ('2011-06-04 07:00:00', 'Single', 'A0003', 'A0004');
INSERT INTO `mydb`.`clientregistration` (`registerDate`, `payMethod`, `OFFICE_officeNo`,
`CLIENT clientNo`) VALUES ('2007-06-09 06:30:00', 'Interchangeable', 'A0004', 'A0005');
INSERT INTO 'mydb'.'clientregistration' ('registerDate', 'payMethod', 'OFFICE officeNo',
`CLIENT clientNo`) VALUES ('1995-06-23 07:00:00', 'Single', 'A0005', 'A0006');
INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0001',
'1999-12-09 10:00:00', '1');
INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0001',
'1999-12-09 09:00:00', '2');
INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0001',
'1999-12-08 10:00:00', '3');
INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0001',
'1999-12-08 09:00:00', '4');
INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0002',
'1999-12-10 10:00:00', '1');
```

```
INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0002', '1999-12-10 15:00:00', '2'); INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0002', '1999-12-11 10:00:00', '3');
```

 $INSERT\ INTO\ `mydb`.`learning`\ (`clientNo`,\ `lessonStartTime`,\ `lessonNo`)\ VALUES\ ('A0002',\ '1999-12-11\ 15:00:00',\ '4');$ 

INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0003', '2014-06-05 13:00:00', '1');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0003', '2014-06-05 14:00:00', '2');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0003', '2014-06-06 09:00:00', '3');

INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0003', '2014-06-07 09:00:00', '4');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0004', '2011-06-10 16:00:00', '1');

INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0004', '2011-06-10 17:00:00', '2');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0004', '2011-06-11 16:00:00', '3');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0004', '2011-06-11 17:00:00', '4');

INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0005', '2007-06-20 18:00:00', '1');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0005', '2007-06-20 19:00:00', '2');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0005', '2007-06-21 18:00:00', '3');

INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0005', '2007-06-21 19:00:00', '4');

INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0006', '1995-07-01 08:00:00', '1');

INSERT INTO 'mydb'. 'learning' ('clientNo', 'lessonStartTime', 'lessonNo') VALUES ('A0006', '1995-07-01 15:00:00', '2');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0006', '1995-07-02 08:00:00', '3');

INSERT INTO `mydb`.`learning` (`clientNo`, `lessonStartTime`, `lessonNo`) VALUES ('A0006', '1995-07-02 15:00:00', '4');

INSERT INTO `mydb`.`test` (`clientNo`, `testStartTime`, `failReason`, `pickUp`) VALUES ('A0001', '2000-01-09 14:00:00', '', 'Yes');

INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES ('A0002', '2000-01-12 14:00:00', 'operation mistake', 'Yes');

INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES ('A0002', '2000-01-15 14:00:00', 'operation mistake', 'Yes');

INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES ('A0002', '2000-01-20 14:00:00', 'not wearing a seat belt', 'Yes');

```
INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0002', '2000-01-24 14:00:00', 'operation mistake', 'Yes');
INSERT INTO 'mydb'. 'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0003', '2014-07-01 13:00:00', 'operation mistake', 'Yes');
INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0003', '2014-07-03 13:00:00', ", 'No');
INSERT INTO 'mydb'. 'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0004', '2011-07-01 09:00:00', '', 'No');
INSERT INTO 'mydb'. 'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0005', '2007-07-01 15:00:00', ", 'Yes');
INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0006', '1995-07-01 10:00:00', 'not wearing a seat belt', 'Yes');
INSERT INTO 'mydb'. 'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0006', '1995-07-03 10:00:00', 'operation mistake', 'Yes');
INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0006', '1995-07-12 10:00:00', 'operation mistake', 'No');
INSERT INTO 'mydb'.'test' ('clientNo', 'testStartTime', 'failReason', 'pickUp') VALUES
('A0006', '1995-07-15 10:00:00', 'operation mistake', 'No');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0001', '1999-12-08 09:00:00', '21');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0001', '1999-12-08 10:00:00', '23');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0001', '1999-12-09 09:00:00', '24');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0001', '1999-12-09 10:00:00', '25');
INSERT INTO 'mydb'.'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0002', '1999-12-10 10:00:00', '14');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0002', '1999-12-10 15:00:00', '14');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0002', '1999-12-11 10:00:00', '15');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0002', '1999-12-11 15:00:00', '21');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0003', '2014-06-05 13:00:00', '21');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0003', '2014-06-05 14:00:00', '24');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0003', '2014-06-06 09:00:00', '12');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0003', '2014-06-07 09:00:00', '14');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0004', '2011-06-10 16:00:00', '15');
```

INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES

('A0004', '2011-06-10 17:00:00', '21');

```
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0004', '2011-06-11 16:00:00', '21');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0004', '2011-06-11 17:00:00', '16');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0005', '2007-06-20 18:00:00', '17');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0005', '2007-06-20 19:00:00', '13');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0005', '2007-06-21 18:00:00', '4');
INSERT INTO 'mydb'.'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0005', '2007-06-21 19:00:00', '16');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0006', '1995-07-01 08:00:00', '12');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0006', '1995-07-01 15:00:00', '15');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0006', '1995-07-02 08:00:00', '25');
INSERT INTO 'mydb'. 'learningmileage' ('clientNo', 'lessonStartTime', 'mileage') VALUES
('A0006', '1995-07-02 15:00:00', '22');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0001', 'A0001');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0003', 'A0002');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0002', 'A0002');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0006', 'A0003');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0009', 'A0004');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0011', 'A0005');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0012', 'A0005');
INSERT INTO 'mydb'. 'learningcar' ('registrationNo', 'clientNo') VALUES ('C0014', 'A0006');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'registerDate', 'weekNo')
VALUES ('1', 'A0001', '1999-12-05 07:00:00', '1999-49');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('2', 'A0001', '1999-12-08 09:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('3', 'A0001', '1999-12-08 10:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('4', 'A0001', '1999-12-09 09:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('5', 'A0001', '1999-12-09 10:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'registerDate', 'weekNo')
VALUES ('6', 'A0003', '1999-12-06 07:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('7', 'A0003', '1999-12-10 10:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('8', 'A0002', '1999-12-10 15:00:00', '1999-50');
```

```
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('9', 'A0002', '1999-12-11 10:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('10', 'A0002', '1999-12-11 15:00:00', '1999-50');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('11', 'A0003', '2000-01-09 14:00:00', '2000-02');
INSERT INTO `mydb`.`timetable` (`timeTableNo`, `staffNo`, `testStartTime`, `weekNo`)
VALUES ('12', 'A0003', '2000-01-12 14:00:00', '2000-03');
INSERT INTO 'mydb'. 'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('13', 'A0003', '2000-01-15 14:00:00', '2000-03');
INSERT INTO 'mydb'. 'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('14', 'A0003', '2000-01-20 14:00:00', '2000-04');
INSERT INTO 'mydb'. 'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('15', 'A0003', '2000-01-24 14:00:00', '2000-05');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'registerDate', 'weekNo')
VALUES ('16', 'A0007', '2014-06-02 07:30:00', '2014-23');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('17', 'A0008', '2014-06-05 13:00:00', '2014-23');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('18', 'A0008', '2014-06-05 14:00:00', '2014-23');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('19', 'A0008', '2014-06-06 09:00:00', '2014-23');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('20', 'A0008', '2014-06-07 09:00:00', '2014-23');
INSERT INTO 'mydb'. 'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('21', 'A0009', '2014-07-03 13:00:00', '2014-27');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'registerDate', 'weekNo')
VALUES ('22', 'A0012', '2011-06-04 07:00:00', '2011-23');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('23', 'A0012', '2011-06-10 16:00:00', '2011-24');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('24', 'A0012', '2011-06-10 17:00:00', '2011-24');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('25', 'A0012', '2011-06-11 16:00:00', '2011-24');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('26', 'A0012', '2011-06-11 17:00:00', '2011-24');
INSERT INTO 'mydb'. 'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('27', 'A0011', '2011-07-01 09:00:00', '2011-27');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'registerDate', 'weekNo')
VALUES ('28', 'A0016', '2007-06-09 06:30:00', '2007-23');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('29', 'A0017', '2007-06-20 18:00:00', '2007-25');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('30', 'A0018', '2007-06-20 19:00:00', '2007-25');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('31', 'A0018', '2007-06-21 18:00:00', '2007-25');
```

```
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('32', 'A0018', '2007-06-21 19:00:00', '2007-25');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('33', 'A0019', '2007-07-01 15:00:00', '2007-26');
INSERT INTO 'mydb'. 'timetable' ('timeTableNo', 'staffNo', 'registerDate', 'weekNo')
VALUES ('34', 'A0021', '1995-06-23 07:00:00', '1995-26');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('35', 'A0021', '1995-07-01 08:00:00', '1995-27');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('36', 'A0021', '1995-07-01 15:00:00', '1995-27');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('37', 'A0021', '1995-07-02 08:00:00', '1995-27');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'lessonStartTime', 'weekNo')
VALUES ('38', 'A0021', '1995-07-02 15:00:00', '1995-27');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('39', 'A0023', '1995-07-01 10:00:00', '1995-27');
INSERT INTO `mydb`.`timetable` (`timeTableNo`, `staffNo`, `testStartTime`, `weekNo`)
VALUES ('40', 'A0023', '1995-07-03 10:00:00', '1995-28');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('41', 'A0023', '1995-07-12 10:00:00', '1995-29');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('42', 'A0023', '1995-07-15 10:00:00', '1995-29');
INSERT INTO 'mydb'.'timetable' ('timeTableNo', 'staffNo', 'testStartTime', 'weekNo')
VALUES ('43', 'A0009', '2014-07-01 13:00:00', '2014-27');
```

# A set of SQL queries for sample queries (listed in Sample Queries), with query results of the output you obtain when you run these queries. (2 marks)

- a) SELECT STAFF.firstName, STAFF.lastName, MANAGERPHONE.phoneNumber FROM OFFICE INNER JOIN STAFF ON OFFICE.MANAGER\_staffNo = STAFF.staffNo INNER JOIN MANAGERPHONE ON STAFF.staffNo = MANAGERPHONE.staffNo;
- b) SELECT officeNo, address FROM OFFICE WHERE city = 'Glasgow';
- c) SELECT STAFF.firstName, STAFF.lastName FROM OFFICE INNER JOIN STAFF ON OFFICE.officeNo = STAFF.OFFICE\_officeNo WHERE OFFICE.city = 'Glasgow' AND OFFICE.officeName = 'Bearsden' AND STAFF.gender = 'female';
- d) SELECT OFFICE\_officeNo, COUNT(staffNo) AS 'Staff Number' FROM STAFF GROUP BY OFFICE\_officeNo;
- e) SELECT city, COUNT(CLIENT\_clientNo) FROM CLIENTREGISTRATION INNER JOIN OFFICE ON CLIENTREGISTRATION.OFFICE officeNo = OFFICE.officeNo GROUP BY city;

- f) SELECT staffNo, lessonStartTime, testStartTime, registerDate, weekNo FROM TIMETABLE WHERE staffNo = 'A0001' AND weekNo = '1999-49';
  - Note: 'A0001' and '1999-49' are the corresponding staffNo and weekNo the user wants to search.
- g) SELECT TIMETABLE.staffNo, CLIENT\_clientNo, OFFICE\_officeNo, payMethod, TIMETABLE.registerDate FROM TIMETABLE, CLIENTREGISTRATION WHERE staffNo = 'A0001' AND TIMETABLE.registerDate = CLIENTREGISTRATION.registerDate;
  - Note: 'A0001' is the corresponding staffNo the user wants to search.
- h) SELECT count(CLIENT\_clientNo) FROM CLIENTREGISTRATION WHERE OFFICE\_officeNo = (SELECT officeNo FROM OFFICE WHERE officeName = 'Bearsden' and city = 'Glasgow');
- i) SELECT staffNo, firstName, lastName FROM STAFF WHERE age>55;
- j) SELECT registrationNo FROM CAR WHERE carCondition = "good";
- k) SELECT registrationNo FROM CARREGISTRATION WHERE staffNo IN (SELECT staffNo FROM STAFF WHERE OFFICE\_officeNo IN (SELECT officeNo FROM OFFICE WHERE officeName = "Bearsden"));
- SELECT CLIENT.firstName, CLIENT.lastName FROM CLIENT INNER JOIN TEST ON CLIENT.clientNo = TEST.clientNo WHERE TEST.failReason = "AND strcmp(date\_format(TEST.testStartTime,'%Y-%m'),'2000-01') = 0;
- m) SELECT firstName, lastName FROM CLIENT WHERE clientNo IN (SELECT clientNo FROM TEST GROUP BY clientNo HAVING COUNT(clientNo) >3);
- n) SELECT AVG(mileage) AS avgMile FROM LEARNINGMILEAGE;
- SELECT OFFICE\_officeNo, staffType, COUNT(staffNo) AS AdministrativeStaffNumber
   FROM STAFF WHERE staffType = 'Administrative Staff' GROUP BY OFFICE officeNo;