



1.3.2 SQL

1. An airline holds details of flights in a database using the table Flight. An extract of the table is shown below

<u>FlightID</u>	FlightNumber	DestinationCode	DestinationName	DepartureDate	DepartureTime
1643	LN421	LHR	Heathrow	23/08/26	09:30
1147	MD810	MDD	Madrid	23/08/26	11:30
1727	PA615	PRS	Paris	23/08/26	1:00
1394	LN522	LHR	Heathrow	24/08/26	9:00
1232	PA125	PRS	Paris	24/08/26	10:00
1992	JF702	JFK	John F. Kennedy	24/08/26	1:30

- a) Describe what the SQL statement below does.

```
SELECT FlightNumber FROM Flight WHERE DestinationCode = 'LHR'
```

[2 marks]

- Outputs the flight numbers from the Flight table
- ... of flights with the destination LHR
- ... it returns LN421 and LN522

The airport cancels all its flights to Heathrow on 24th August 2026.

- b) The SQL statement below shows all the data for flights going to John F. Kennedy. Rewrite it so it instead removes all flights to Heathrow on 24th August 2026.

```
SELECT * FROM Flight WHERE DestinationName = 'John F. Kennedy'
```

[2 marks]

DELETE FROM Flight

WHERE DestinationName = 'Heathrow' AND DepartureDate = '24/08/26'





2. A sport centre uses a relational database to store information about its facilities (such as the swimming pool) and the bookings that have been made to use them

Figure 1 shows the structure of the relations in the database.

Figure 1

Facility (FacilityID, Description, MaxPeople, PricePerHour)
FacilityForSport (Sport, FacilityID)
Booking (FacilityID, BookingDate, StartTime, EndTime, CustomerID)
Customer (CustomerID, Forename, Surname, EmailAddress)

- a) Write an SQL statement to create the Facility table specified in **Figure 1**, including the primary key.

[3 marks]

```
CREATE TABLE Facility (  
  FacilityID INT PRIMARY KEY,  
  Description VARCHAR(100),  
  MaxPeople INT,  
  PricePerHour REAL)
```

3. A network of zoos uses a relational database system to store information about the animals that they have so that they can be matched up with animals at other zoos in a breeding programme.

Figure 2 shows the structure of the relations in the database.

Figure 2

Zoo (ZooName, Town, Country)
AnimalLocation (AnimalID, ZooName, DateArrived, DateLeft)
Animal (AnimalID, IndividualName, Species, DataOfBirth, Sex)
Match (AnimalFemaleID, AnimalMaleID, DateOfMatch, Successful)

- The AnimalLocation relation identifies which zoos each animal has lived at. The zoo that the animal is currently at can be identified because the DateLeft attribute is set to 01/01/0001 to indicate that the animal has not left.





- The Match relation stores details of matches that have been made. The attributes AnimalFemaleID and AnimalMaleID refer to the AnimalID values of the two matched animals in the Animal relation.

a) Write an SQL statement to create the Animal relation, including the key field.

[3 marks]

```
CREATE TABLE Animal (  
  AnimalID INT PRIMARY KEY,  
  IndividualName VARCHAR(50),  
  Species VARCHAR(40),  
  DateOfBirth DATE,  
  Sex VARCHAR(6) )
```

b) There is a requirement to identify all the red pandas that were present at the zoo called 'Ashdale Park' at any time between 01/04/2025 and 31/05/2025, inclusive.

The animals might still be at the zoo or may have moved to another zoo.

Write a query that will list all the red pandas that were at the zoo on any day between these dates.

For each red panda on the list, the animal's individual name and the date that the animal arrives at the zoo, and other fields, should be listed.

[7 marks]

```
SELECT IndividualName, DateArrived  
FROM Animal  
INNER JOIN AnimalLocation  
ON Animal.AnimalID = AnimalLocation.AnimalID  
WHERE Species = "Red Panda"  
AND ZooName = "Ashdale Park"  
AND (DataArrived < "01/04/2025" AND DateLeft > "31/05/2025"  
OR DataArrived <= "31/05/2025" AND DateLeft = "01/01/0001"  
OR DataArrived >= "01/04/2025" AND DateArrived <= "31/05/2025"  
OR DateLeft >= "01/04/2025" AND DateLeft <= "31/05/2025")
```

