

SQL

- Structured Query Language
- A programming language used to work with database.



Key Database Terms

```
SELECT customers.name, customers.address
FROM customers
WHERE customers.name = 'John'
ORDER BY address ASC
```

Returns the name and address of all records in the customers table where the name is John. Sorts the results by address in ascending order.

```
INSERT INTO books (name, author)
VALUES ('Top Cheeses', 'John Smith')
```

Inserts a record in the books table with the name Top Cheeses and author John Smith

```
UPDATE orders
SET status = 'paid'
WHERE customer = 'James'
```

Sets the status field to paid in the orders table for all records where the customer name is James .

```
DELETE FROM students
WHERE name = 'Dave'
```

Deletes any records in the students table where the name is Dave.

Unit 7: Relational Databases and Structured Query Language (SQL)

Key Database Terms

Database

- A collection of organised and related data.
- Data is organised into tables of data.
- The columns are known as fields.
- Rows are known as records.
- Flat file databases store all data in a single table

Relational Database

- Store data in multiple tables linked together.
- Pieces of data are stored only once, preventing inconsistency and reducing storage space.
- Links between tables join data together.
- Stops the same data being stored multiple times (data redundancy)

Table

- Contains all the fields and the records.
- A database may contain more than one table.

Record

- A collection of data comprising a single row in a table.
- The data about a single thing.

Field

- The column headings in a table.
- Each field contains a different thing such as an address or name.
- Each field might require different data types.

Primary Key

- A unique identifier for each record.
- Makes each record unique and allows it to be identified.
- Each record has one primary key.
- Primary keys are not used again when a record is deleted.
- Can be automatically generated when data is added.

Foreign Key

- The primary key from another table.
- Used to link two tables together

SQL Commands

SELECT – specify one or more fields to be included

FROM – specify one or more tables to be included

WHERE – specify one or more criteria to filter the results

ORDER BY – how the results should be sorted.

ASC and **DESC** specify if the results should be sorted in ascending or descending order.

INSERT INTO – adds a record into a table

VALUES – the values to add

UPDATE – edits existing data

SET – the new values

WHERE – specify one or more criteria for the data to update

DELETE FROM – Deletes existing data

WHERE – specify one or more criteria for the data to delete