

Exercise walk-through

3.4

SQL for Back-end Programming

GAC Computing

You must be able to

- write a basic SELECT query with WHERE
- explain a JOIN condition
- identify the effect of a missing JOIN condition

1

The method

Method — Ask for exactly the rows needed

`SELECT name FROM courses WHERE level = 'beginner';` asks for names of beginner courses. SQL is **declarative**: it states what is wanted.

A **JOIN 连接** combines related tables through matching keys: `enrolments e JOIN courses c ON c.id = e.course_id`. The `ON` condition prevents unrelated rows being paired.

2

Practice

Practice 2.1 ■ 1 mark

State which SQL word selects columns from a table.

Solution 2.1

Worked steps

- SELECT. **B1**

Practice 2.2 ■ 1 mark

State the purpose of a WHERE condition.

Solution 2.2

Method: Ask for exactly the rows needed — p.4

Worked steps

- It filters rows to those matching a condition. **B1**

Practice 2.3 ■ 2 marks

Explain why a JOIN needs an ON condition.

Solution 2.3

Method: Ask for exactly the rows needed — p.4

Worked steps

- It states which matching keys connect the two tables. **B1**
- It prevents unrelated rows being combined. **A1**

3

Exam-style

Exam-style 3.1 ■ 4 marks

Write a query to return `title` from `books` where `available` is `true`.

Solution 3.1

Worked steps

- `SELECT title FROM books WHERE available = true;`

`B1` `A1` `A1` `B1`

Exam-style 3.2 ■ 4 marks

Explain what can happen when two tables are joined without a condition linking their keys.

Solution 3.2

Method: Ask for exactly the rows needed — p.4

Worked steps

- Every row may be paired with every row in the other table. **B1**
- The query returns many meaningless combinations. **A1**
- This can give the wrong result and use unnecessary resources. **A1**
- An ON condition matching the foreign and primary keys is required. **B1**