3. GAC017 Computing III: Data Science and Web Apps

Starter Quiz ·

GAC Computing Name: _____ Score: _____

1. Where should a private database password used by the application be kept?
   - ☐ In a public screenshot
   - ☐ In the page source
   - ☐ In a downloadable browser script
   - ☐ In protected server configuration

2. Which lookup keeps a submitted name separate from SQL syntax?
   - ☐ A fixed SELECT with a bound name value
   - ☐ A query trusted because the name came from a form
   - ☐ A SELECT built by pasting the name
   - ☐ A string with untrusted quotes removed only

3. Which design represents students taking many courses and courses having many students?
   - ☐ Students, courses and an enrolments relationship table
   - ☐ One table holding each student and course name in a single row
   - ☐ Students and courses joined by a student ID stored in each course
   - ☐ Students and courses with a course-list field in each student row

4. Which clause filters groups to those with at least two enrolled students?
   - ☐ HAVING COUNT(e.student_id) >= 2
   - ☐ SELECT title only
   - ☐ ORDER BY title
   - ☐ WHERE COUNT(e.student_id) >= 2

5. Under this route contract, a permitted student exists but has no courses. Which response is appropriate?
   - ☐ A fabricated course
   - ☐ 200 with []
   - ☐ Always 400
   - ☐ A raw database exception

6. Deleting every row with any blank field is always a neutral cleaning decision.

   ☐ True ☐ False

7. The server needs independent input checks even when the form validates input.

   ☐ True ☐ False

8. Which external inputs need appropriate server checks? Select all that apply.
   - ☐ Only fields that look suspicious
   - ☐ URL parameters
   - ☐ Form values
   - ☐ Uploaded file contents

   Tick every correct option.

9. Repeating the same course ID in several enrolment rows is always a normalisation error.
   ☐ True ☐ False

10. Complete the clause that groups by course identity and title: _____ c.id, c.title

    _____

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Answers ·

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1. **In protected server configuration**

   Downloadable code can be inspected. Keep private service credentials on the server.

2. **A fixed SELECT with a bound name value**

   Binding values keeps them separate from the fixed statement.

3. **Students, courses and an enrolments relationship table**

   Each enrolment records one student–course pair.

4. **HAVING COUNT(e.student_id) >= 2**

   HAVING applies a condition to groups; WHERE filters input rows.

5. **200 with []**

   A successful empty list is a defined outcome, not a database failure.

6. **False**

   Useful fields may remain, and missingness can bias which observations are retained.

7. **True**

   A caller can bypass the form and send a request directly.

8. **URL parameters; Form values; Uploaded file contents**

   Ordinary-looking external values can still have wrong types, lengths or permissions.

9. **False**

   Repeated references are expected. Copying the course title into each relationship row creates the update problem here.

10. **GROUP BY**

    GROUP BY defines the groups. Including the ID keeps different same-title courses separate.