30 SQL Practice Questions — Student Workbook

Notes for SHS · Topic 65 · fictional student database · SQLite 3.46.1

Question 01 — Retrieve all subjects and their identifiers

Level: Beginner **Skill:** SELECT, FROM

Task: Retrieve all subjects and their identifiers. **Relevant columns:** Subjects(subject_id,subject_name).

Hint available in article: try this question independently first.

Your SQL: _____

Question 02 — Display essential information about the first six resources

Level: Beginner **Skill:** SELECT multiple columns

Task: Display essential information about the first six resources. **Relevant columns:** Resources(resource_id,resource_title,resource_type,estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 03 — Find the available resource formats

Level: Beginner **Skill:** DISTINCT

Task: Find the available resource formats. **Relevant columns:** Resources(resource_type).

Hint available in article: try this question independently first.

Your SQL: _____

Question 04 — Find all Beginner-level learning resources

Level: Beginner **Skill:** WHERE, text equality

Task: Find all Beginner-level learning resources. **Relevant columns:** Resources(resource_title,difficulty_level,resource_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 05 — Find resources estimated to exceed 30 minutes

Level: Beginner **Skill:** comparison operators

Task: Find resources estimated to exceed 30 minutes. **Relevant columns:** Resources(resource_title,estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 06 — Find short resources marked Beginner

Level: Beginner **Skill:** AND, bounded filtering

Task: Find short resources marked Beginner. **Relevant columns:** Resources(resource_title,difficulty_level,estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 07 — Choose resources in the Quiz or Worksheet formats

Level: Beginner **Skill:** OR, IN

Task: Choose resources in the Quiz or Worksheet formats. **Relevant columns:** Resources(resource_title,resource_type).

Hint available in article: try this question independently first.

Your SQL: _____

Question 08 — Search for the word Quiz inside resource titles

Level: Beginner **Skill:** LIKE, text patterns

Task: Search for the word Quiz inside resource titles. **Relevant columns:** Resources(resource_title).

Hint available in article: try this question independently first.

Your SQL: _____

Question 09 — Sort the seven longest catalog resources

Level: Beginner **Skill:** ORDER BY DESC and tie-breaking

Task: Sort the seven longest catalog resources. **Relevant columns:** Resources(resource_title,estimated_minutes,resource_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 10 — Find the five shortest catalog resources

Level: Beginner **Skill:** ORDER BY ASC and LIMIT

Task: Find the five shortest catalog resources. **Relevant columns:** Resources(resource_title,estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 11 — Count every resource in the catalog

Level: Developing **Skill:** COUNT(*)

Task: Count every resource in the catalog. **Relevant columns:** Resources(resource_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 12 — Find the average estimated resource duration

Level: Developing **Skill:** AVG, ROUND

Task: Find the average estimated resource duration. **Relevant columns:** Resources(estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 13 — Check the shortest and longest duration estimates

Level: Developing **Skill:** MIN, MAX

Task: Check the shortest and longest duration estimates. **Relevant columns:** Resources(estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 14 — Count resources at every difficulty level

Level: Developing **Skill:** GROUP BY, COUNT

Task: Count resources at every difficulty level. **Relevant columns:** Resources(difficulty_level,resource_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 15 — Add all recorded study-session minutes

Level: Developing **Skill:** SUM, NULL semantics

Task: Add all recorded study-session minutes. **Relevant columns:** ResourceUsage(minutes_spent).

Hint available in article: try this question independently first.

Your SQL: _____

Question 16 — Count usage sessions marked completed

Level: Developing **Skill:** WHERE, COUNT

Task: Count usage sessions marked completed. **Relevant columns:** ResourceUsage(completed,usage_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 17 — Compute completion percentage for each resource type

Level: Developing **Skill:** JOIN, CASE, GROUP BY

Task: Compute completion percentage for each resource type. **Relevant columns:** Resources(resource_id,resource_type), ResourceUsage(resource_id,completed).

Hint available in article: try this question independently first.

Your SQL: _____

Question 18 — Find frequently visited resources using a minimum of six sessions

Level: Developing **Skill:** HAVING, grouped filtering

Task: Find frequently visited resources using a minimum of six sessions. **Relevant columns:** Resources(resource_id,resource_title),ResourceUsage(resource_id,usage_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 19 — Count the unique students who accessed at least one resource

Level: Developing **Skill:** COUNT DISTINCT

Task: Count the unique students who accessed at least one resource. **Relevant columns:** ResourceUsage(student_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 20 — Compare recorded session duration across study levels

Level: Developing **Skill:** INNER JOIN, GROUP BY, AVG

Task: Compare recorded session duration across study levels. **Relevant columns:** Students(student_id,study_level),ResourceUsage(student_id,minutes_spent).

Hint available in article: try this question independently first.

Your SQL: _____

Question 21 — Show resource titles beside their subject names

Level: Challenge **Skill:** INNER JOIN

Task: Show resource titles beside their subject names. **Relevant columns:** Resources(subject_id,resource_title),Subjects(subject_id,subject_name).

Hint available in article: try this question independently first.

Your SQL: _____

Question 22 — Keep all subjects, including the empty subject

Level: Challenge **Skill:** LEFT JOIN, COUNT right key

Task: Keep all subjects, including the empty subject. **Relevant columns:** Subjects(subject_id,subject_name),Resources(subject_id,resource_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 23 — Locate the catalog resource that no one accessed

Level: Challenge **Skill:** LEFT JOIN, IS NULL

Task: Locate the catalog resource that no one accessed. **Relevant columns:** Resources(resource_id,resource_title),ResourceUsage(resource_id,usage_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 24 — Find student codes that accessed three or more different resources

Level: Challenge **Skill:** COUNT DISTINCT, HAVING

Task: Find student codes that accessed three or more different resources. **Relevant columns:** Students(student_id,student_code),ResourceUsage(student_id,resource_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 25 — Find resources longer than the catalog average

Level: Challenge **Skill:** scalar subquery

Task: Find resources longer than the catalog average. **Relevant columns:** Resources(resource_title,estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 26 — Create three duration bands using CASE

Level: Challenge **Skill:** CASE WHEN, derived columns

Task: Create three duration bands using CASE. **Relevant columns:** Resources(resource_title,estimated_minutes).

Hint available in article: try this question independently first.

Your SQL: _____

Question 27 — Calculate measured mean session time for each subject

Level: Challenge **Skill:** three-way LEFT JOIN, AVG, NULL

Task: Calculate measured mean session time for each subject. **Relevant columns:** Subjects(subject_id),Resources(subject_id),ResourceUsage(resource_id,minutes_spent).

Hint available in article: try this question independently first.

Your SQL: _____

Question 28 — Rank resources within each subject by visit count

Level: Challenge **Skill:** CTE and ROW_NUMBER window

Task: Rank resources within each subject by visit count. **Relevant columns:** Resources(resource_id,subject_id),Subjects(subject_id),ResourceUsage(resource_id).

Hint available in article: try this question independently first.

Your SQL: _____

Question 29 — Summarize events and recorded minutes by month

Level: Challenge **Skill:** strftime dates, GROUP BY, SUM

Task: Summarize events and recorded minutes by month. **Relevant columns:** ResourceUsage(access_date,minutes_spent).

Hint available in article: try this question independently first.

Your SQL: _____

Question 30 — Produce the complete six-column subject analytics report

Level: Challenge **Skill:** multiple LEFT JOINs, conditional SUM, COUNT DISTINCT

Task: Produce the complete six-column subject analytics report. **Relevant columns:** Subjects,Resources,ResourceUsage.

Hint available in article: try this question independently first.

Your SQL: _____

Suggested grading: Beginner Q1–10 = 1 each; Developing Q11–20 = 2 each; Challenge Q21–30 = 3 each. Total 60. Informal self-assessment only.