

SQL CHALLENGES

1. What is the purpose of an index in a database table? (2 marks)

An index is used to quickly locate data without having to search every row in a database table each time the database is accessed.

2. In what order does SQL run the clauses? Select the correct option from the list of choices below: (2 marks)

- i. SELECT, FROM, WHERE, GROUP BY
- ii. FROM, WHERE, HAVING, SELECT, LIMIT
- iii. SELECT, FROM, INNER JOIN, GROUP BY
- iv. FROM, SELECT, LIMIT, WHERE

(ii) is the right order.

3. Given the table below, write a SQL query that retrieves the personal data about alumni who scored above 16 on their calculus exam. (3 marks)

alumni

student_id	name	surname	birth_date	faculty
347	Daniela	Lopes	1991-04-26	Medical School
348	Robert	Fischer	1991-03-09	Mathematics

evaluation

student_id	class_id	exam_date	grade
347	74	2015-06-19	16
347	87	2015-06-06	20
348	74	2015-06-19	13

curricula

class_id	class_name	professor_id	semester
74	algebra	435	2015_summer
87	calculus	532	2015_summer
46	statistics	625	2015_winter

```

SELECT a.name, a.surname, a.birth_date, a.faculty
FROM alumni AS a
INNER JOIN evaluation AS e
ON a.student_id=e.student_id
INNER JOIN curricula AS c
ON e.class_id = c.class_id WHERE c.class_name = 'calculus' AND e.grade>16;

```

4. We'll work with the beverages table. Its first rows are given below. (3 marks)

id	name	launch_year	fruit_pct	contributed_by
1	Bruzz	2007	45	Sam Malone
2	Delightful	2008	41	Sam Malone
3	Nice	2015	42	Sam Malone

Write a query to extract only beverages where fruit_pct is between 35 and 40 (including both ends).

SELECT *

FROM beverages

WHERE fruit_pct BETWEEN 35 AND 40;

5. We'll work with the beverages table again. Its first rows are given below. (3 marks)

id	name	launch_year	fruit_pct	contributed_by
1	Bruzz	2007	45	Sam Malone
2	Delightful	2008	41	Sam Malone
3	Nice	2015	42	Sam Malone

Write a query that finds the average fruit_pct by contributor and displays its ascending order.

```
SELECT contributed_by, AVG(fruit_pct) AS mean_fruits
```

```
FROM beverages
```

```
GROUP BY contributed_by
```

```
ORDER BY mean_fruit
```