5.Data Query Questions

**5.1: Joining Tables and Aggregating Data**

SELECT

c.category\_name,

AVG(p.price) AS average\_price

FROM

categories c

JOIN

products pr ON c.category\_id = pr.category\_id

JOIN

prices p ON pr.product\_id = p.product\_id

GROUP BY

c.category\_name

ORDER BY

c.category\_name;

**5.2: Subqueries and Filtering**

WITH ranked\_products AS (

SELECT

pr.product\_name,

c.category\_name,

p.price,

ROW\_NUMBER() OVER (PARTITION BY c.category\_name ORDER BY p.price DESC) AS rank

FROM

products pr

JOIN

prices p ON pr.product\_id = p.product\_id

JOIN

categories c ON pr.category\_id = c.category\_id

)

SELECT

product\_name,

category\_name,

price

FROM

ranked\_products

WHERE

rank <= 3

ORDER BY

category\_name,

price DESC;

**5.3: Advanced Filtering and Grouping**

WITH average\_ratings AS (

SELECT

pr.product\_id,

pr.product\_name,

c.category\_name,

AVG(r.rating) AS avg\_rating

FROM

products pr

JOIN

categories c ON pr.category\_id = c.category\_id

JOIN

reviews r ON pr.product\_id = r.product\_id

GROUP BY

pr.product\_id, pr.product\_name, c.category\_name

),

ranked\_products AS (

SELECT

product\_name,

category\_name,

avg\_rating,

ROW\_NUMBER() OVER (PARTITION BY category\_name ORDER BY avg\_rating DESC) AS rank

FROM

average\_ratings

)

SELECT

category\_name,

product\_name,

avg\_rating

FROM

ranked\_products

WHERE

rank = 1

ORDER BY

category\_name,

avg\_rating DESC;