

Exercise - 4

SQL Join

Question 1 - Inner Join

Select student_id,

student_name

grade

From students

Inner Join grade on student_id = student_id;

| student_id | student_name | grade |
|------------|--------------|-------|
| 2 | Bob | B |
| 3 | Charlie | A |

Question 2 - Left Join

Select emp_id, emp_name,

dept_name

From employees

Left Join departments on emp_id = emp_id;

| emp_id | emp_name | dept_name |
|--------|----------|-----------|
| 1 | John | NULL |
| 2 | Lisa | HR |
| 3 | Mike | NULL |

Question 4 - Left Join + CASE

Select order_id, customer_id, amount, customer_name

CASE WHEN customer_id IS NULL THEN 'new customer'

ELSE 'returning customer'

END AS customer_type

FROM orders

Left Join customer ON customer_id = customer_id

| order_id | customer_id | amount | customer_type |
|----------|-------------|--------|--------------------|
| 1 | 101 | 500 | returning customer |
| 2 | 102 | 300 | returning customer |
| 3 | 103 | 0 | new customer |

Table 5 - left join + group by + sum

select region_id, region_name

(coalesce (sum(amount, 0)) AS total_sales)

from Regions

left join sales on region_id = region_id

group by region_id, region_name;

| region_id | region_name | total_sales |
|-----------|-------------|-------------|
| 1 | North | 2000 |
| 2 | South | 3500 |
| 3 | East | |

Question 6 - Left join + case

select student_id, name, days_present

case when days_present > 15 Then 'Excellent'

when days_present Between 6 And 14 Then 'Needs Improvement'

when days_present Between 0 And 5 Then 'Poor Attendance'

else 'no record'

end AS attendance_status

from students

left join attendance On student_id = student_id

| student_id | name | days_present | attendance_status |
|------------|---------|--------------|-------------------|
| 1 | Alice | 18 | Excellent |
| 2 | Bob | 5 | Poor Attendance |
| 3 | Charlie | null | No record |

Question 7 - inner join + count + group by

Select project_id, name

Count (task_id) AS task_count

From Projects

Inner Join tasks ON Project_id = project_id

Group by project_id, name;

| Project_id | Name | Task_Count |
|------------|------------|------------|
| 1 | AI Chatbot | 2 |
| 2 | Website | 1 |

Question 8 - full outer join + case when

Select order_total, return_total

COALESCE (cust_id, cust_id) AS cust_id

Case When cust_id is not null

cust_id is not null then 'returned'

else 'no return'

End AS customer_status

From orders

Full outer join returns on cust_id = cust_id

where COALESCE (order_total, 0) > 100

| Cust_id | order_total | return_total | return_Status |
|---------|-------------|--------------|---------------|
| 11 | 120 | 20 | returned |
| 12 | 250 | Null | No return |
| 13 | 180 | Null | No return |

Question 9 - left join + count + order by

Select user_id, name,
Count (login_date) AS login_count
From users

Left Join logins On user_id = user_id

Group by user_id, name

Order by login_count DESC

| user_id | name | login-count |
|---------|--------|-------------|
| 2 | Gloria | 2 |
| 3 | Steve | 1 |
| 1 | Nelson | 0 |

Question 10 - left join + case + order by

Select teacher_id, teacher_name,

Case When subject_name Is Null Then 'No Subject Assigned'

Else subject_name

End As subject_name

From teachers

Left Join subject On teacher_id = teacher_id

Order by teacher_name ASC

| teacher_id | teacher_name | subject_name |
|------------|---------------|---------------------|
| 1 | Mr. Hlongwane | Math |
| 1 | Mr. Hlongwane | Science |
| 2 | Ms. Mjaba | No Subject Assigned |
| 3 | Mr. Dlamini | No Subject Assigned |