Exercise 4 - SQL JOINS

1 ~~Display only~~ Join students and grades to display only students who have grades

```
SELECT student_id,
       student_name,
       grade
FROM students AS A
INNER JOIN grades AS B
ON A.student_id = B.student_id
```

student_id	student_name	grade
2	Bob	B
3	chalie	A

2. Display all employees and the departments they belong to. Include employees with no department

```
SELECT emp_id,
       emp_name,
       department
FROM employees AS A
LEFT JOIN departments AS B
ON A.emp_id = B.emp_id;
```

emp_id	emp_name	department
1	John	Null
2	Lisa	HR
3	Mike	IT

3. Display a complete list of products and their quantities sold. Include products with no sales and sales for unknown products

```
SELECT product_id,
       product_name,
       quantity
FROM products AS A
FULL OUTER JOIN sales AS B
ON A.product_id = B.product_id
```

Product_id	product_name	quantity
1	Laptop	Null
2	Mouse	50
3	keyboard	Null
4	Null	30

4 Display all orders and indicate whether the customer is 'New' or 'Returning'

```
SELECT order_id,
    customer_id,
    amount
    Customer_name,
CASE
  WHEN Customer_id is NOT NULL THEN 'Returning customer'
ELSE 'New customer'
END As customer_type
FROM orders AS A
LEFT JOIN customers AS B
ON A.customer_id = B.customer_id;
```

order_id	customer_id	amount	customer_name	customer_type
1	101	500	Paul	Returning customer
2	102	300	Sarah	Returning customer
3	105	0	Nuci	New Customer

5 - Show total sales per region and include regions with no sales

```
SELECT region_id,
    region_name,
SUM (amount) AS total_sales
FROM sales AS A
LEFT JOIN regions AS B
ON A.region = B.region_id
GROUP BY region_id, region_name;
```

region_id	region_name	total_sales
1	North	2000
2	South	3500
3	East	NULL

6 classify students based on attendance

```
SELECT student_id,
       name,
       days_present,
CASE
  WHEN days_present <= 5 THEN 'poor attendance'
  WHEN days_present BETWEEN 6 AND 18 THEN 'Needs improving'
  WHEN days_present > 18 THEN 'exellent'
ELSE 'empty'
END AS attendance_status
FROM students AS A
LEFT JOIN attendance AS B
ON A.student_id = B.student_id;
```

student_id	name	day_present	attendance_status
1	Alice	18	needimprovement
2	Bob	5	poorattendance
3	charlie	NULL	empty

7. Show number of tasks per project. Only include projects that have tasks

```
SELECT project_id,
       name,
COUNT(task_id) AS task_count
FROM projects AS A
INNER JOIN tasks AS B
ON A.project_id = B.project_id
GROUP BY project_id
```

project_id	name	task_count
1	AI chatbot	2
2	Website	1

9 Count how many times each user logged in

```
SELECT user_id,
       name,
       COUNT(login_date) AS login_count
FROM users AS A
LEFT JOIN logins AS B
ON A.user_id = B.user_id
GROUP BY login_count DESC;
```

user_id	name	login_count
2	Gloria	2
3	Steve	1
1	Nelson	0

10. Show all teachers and the subjects they teach. If no subject label appropriately.

```
SELECT teacher_id,
       teacher_name,
       IFNULL(subject_name, 'No subject assigned') AS subject_name
FROM teachers AS A
LEFT JOIN subjects AS B
ON A.teacher_id = B.teacher_id;
```

teacher_id	teacher_name	Subject_name
1	Mr. Mlangwene	Math
1	Mr. Mlungwene	Science
2	Ms. Nkaba	No subject assigned
3	Mr Dlamini	No Subject assigned