

Exercise : NULL Functions

Q1 : Show all employees with their salary. If salary is NULL, display 0. (Replace a NULL value with 0.) (IFNULL)

Table 1 - Employees

employee-id	name	department	salary
1	Alice	HR	5000
2	Bob	IT	NULL
3	Charlie	NULL	7000
4	Dana	Finance	NULL

Expected columns: employees-id, name, salary-with-default.

```
SELECT employee-id,
       name,
       IFNULL (salary, 0) AS salary-with-default,
FROM employees;
```

Output / Return:

Employees		
employee-id	name	salary
1	Alice	5000
2	Bob	0
3	Charlie	7000
4	Dana	0

Q2 : Show employee names with their department. If department is NULL, show "Not Assigned".

Expected columns: employee-id, name, department-name

Replacing Value with "Not Assigned" (IFNULL)

```
SELECT employee_id,  
       name,  
       IFNULL(department, 'Not Assigned') AS  
              department_name,  
FROM employees;
```

Output / Return:

Employees		
employee_id	name	department
1	Alice	HR
2	Bob	IT
3	Charlie	Not Assigned
4	Dana	Finance

Table 2 : Orders

order_id	customer_id	delivery_date
101	201	2024-12-01
102	202	NULL
103	NULL	2024-12-03

Q3: Find orders with NULL customer_id using ISNULL().

Expected Columns: order_id, customer_id

```
SELECT order_id,  
       customer_id,  
FROM orders  
WHERE customer_id IS NULL;
```

Return/Output :

Orders

order_id	customer_id
103	NULL

Question 4 : Show all orders. If delivery_date ~~is~~ NULL, show 'Pending'. (Replace NULL value with 'Pending')

Expected columns : order_id, customer_id, delivery_status

SELECT order_id,
customer_id,
delivery_status

FROM orders

WHERE delivery_status IS NULL As 'Pending'

SELECT customer.order_id,
customer_id,
IFNULL (delivery_date, 'Pending') As delivery
status,
FROM orders;

Output :

Orders

order_id	customer_id	delivery status
101	201	2024-12-01
102	202	Pending
103	NULL	2024-12-03

Q5 : Show all students and their grades. Replace NULL with 0.

Expected columns : ~~not_graded_count~~ student_id, name, final_grade

Table 3 : Students

student_id	name	grade
1	Ethan	85
2	Maya	NULL
3	Olivia	90

SELECT student_id

name

~~COALESCE(grade, 0)~~ / IFNULL(grade, 0) AS final_grade,
FROM students;

Output / Return :

Students

student_id	name	final_grade
1	Ethan	85
2	Maya	0
3	Olivia	90

Q6 : Count students who haven't been graded.

Expected Columns : not-graded-count

SELECT COUNT(*) AS not-graded-count,
FROM students,
WHERE grade IS NULL;

Return :

not-graded-count

1

MULTIPLY expressions
 Q7. Show product name, price, and final price after discount (assume 0 if discount is NULL). Replace IF NULL value

Table 4 : Products

product-id	name	price	discount
501	Keyboard	25	NULL
502	Mouse	15	5
503	Monitor	100	NULL

Expected columns : product-id, name, final-price.

SELECT product-id,
 name,
 price,
 COALESCE (discount, 0) AS final-price
 FROM Products;

Return Products

product-id	name	final_price
501	Keyboard	25
502	Mouse	10
503	Monitor	100

$$15 - 5 = 10$$

Q8 : Count how many customers have no email.

Expected columns : missing_email_count.

Table 5 : Customers

customer-id	name	email
1	Linda	NULL
2	Joseph	joseph@mail.com
3	Nia	NULL

SELECT COUNT(*) AS missing_email_count
FROM customers,
WHERE email IS NULL;

Return: customers

customer_id name

Return : missing_email_count

2

Question 9: Show all customers with email. If NULL, display "No Email".

Expected Columns: customer_id, name, email_display

SELECT customer_id,
name,
IFNULL(email, 'No Email') AS email_
display
FROM customers;

Return :

Customers

customer_id	name	email_display
1	Linda	No Email
2	Joseph	joseph@mail.com
3	Nia	No Email

Q10: Show payment details with method replaced by "Unknown" if NULL.

Expected Columns: payment_id, method_display, status.

Table 6 : Payments

payment_id	method	status
301	Credit	NULL
302	Paypal	Success
303	NULL	Failed

SELECT payment_id,
 method status,
 COALESCE (method, 'Unknown') AS method_display
 FROM payments;

Return Payments

payment_id	method_display	status
301	Credit	NULL
302	Paypal	Success
303	Unknown	Failed

Question 11 : Show items and their quantity (0 if NULL).

Expected Columns : Item_id , item_name , quantity - checked.

Table 7 : Inventory

item_id	item_name	quantity
1	Pen	NULL
2	Notebook	150
3	Eraser	NULL

SELECT item_id ,
 item_name ,
 IFNULL (quantity , 0) AS quantity_checked
 FROM Inventory ;

Return : Inventory

item-id	item-name	quantity-checked
1	Pen	0
2	Notebook	150
3	Eraser	0

Q12 : Show all employee ID and the first available value among bonus or commission.

Expected columns : emp-id , first-available-reward

Table 8 : Employees - Extra

emp-id	bonus	commission
1	NULL	300
2	100	NULL
3	NULL	NULL

SELECT emp-id,
COALESCE(bonus, commission) AS first-available-reward
FROM employees+extra;

Return :

Employees - Extra

emp-id	first-available-reward
1	300
2	100
3	NULL

Q13 : Count classes that don't have a room assigned.

Expected columns : no-room-count

Table 9 : Classes

class_id	subject	room
11	Math	NULL
12	Science	Lab A
13	English	NULL

SELECT COUNT(*) AS no_room_count,
 FROM classes,
 WHERE room IS NULL;

Return: No no_room_count

Return:

2

Q14 : Show attendance records with status. Replace NULL with "Not Marked".

Expected Columns: student_id, date, attendance_status

Table 10 : Attendance

student_id	date	status
1	2025-04-01	NULL
2	2025-04-01	Present
3	2025-04-01	Absent

SELECT student_id
 date,
 COALESCE(status, 'Not Marked') AS attendance_status,
 FROM Attendance;

Return: Attendance

student_id	date	status	attendance_status
1	2025-04-01	Not Marked	
2	2025-04-01	Present	
3	2025-04-01	Absent	

Q15: Show account ID, account type (or 'Unknown'), and balance (or 0).

Expected Columns: account_id, type_display, balance_checked.

Table 11 : Bank_Accounts

account_id	account_type	balance
A1	Savings	NULL
A2	Current	5000
A3	NULL	2000

SELECT account_id,
COALESCE (account_type, 'Unknown') AS
type_display,
COALESCE (balance, 0) AS balance_checked
FROM Bank_Accounts;

Return

Bank_Accounts

account_id	type_display	balance_checked
A1	Savings	0
A2	Current	5000
A3	Unknown	2000

Q16: Show all projects with a start date. If start_date is NULL, display 'TBD'.

Expected Columns: project_id, title, start_display

Table 12 : Projects

project_id	title	start_date	end_date
1	Website Revamp	2025-01-10	NULL
2	Mobile App	NULL	2025-06-01
3	Data Migration	NULL	NULL

SELECT project_id,
 title,
 COALESCE (start_date, 'TBD') AS start_display
 SELECT project_id
 title,
 CASE
 WHEN start_date IS NULL THEN 'TBD'
 ELSE start_date
 END AS start_display
 FROM projects;

Return:

Projects		
project_id	title	start_display
1	Website Revamp	2025-01-10
2	Mobile App	TBD
3	Data Migration	TBD

Q17 : Display reviews showing comment (or 'No Comment')
 and rating (or 0).
 Expected Columns: review_id, product_id, comment -
 display, rating - display .

Table3: Reviews

review_id	product_id	comment	rating
1	501	Great product	4
2	502	NULL	NULL
3	503	Works fine	3

SELECT review_id, product_id,
 COALESCE(comment, 'No Comment') AS comment
 display,
 COALESCE(rating, 0) AS rating_display,
 FROM Reviews, Suppliers,

Return!
 supplier_id, reviews, suppliers

review_id	supplier_id	product_id	comment_display	rating_display
1		501	Great product	4
2		502	No Comment	0
3		503	Works fine	3

Q18: Show the supplier contact number. Use COALESCE
 (phone, alt-phone, 'No Contact').
 Expected columns: supplier_id, name, contact_number

Table 15 : User - Settings for Q19

user_id	theme	language	timezone
1	NULL	English	NULL
2	Dark	NULL	UTC +1
3	NULL	NULL	NULL

Q18
table14:
SELECT us.suppliers
SELECT review_id,

Table 14 : Suppliers for Q18

supplier_id	name	phone	alt-phone
1	Global Goods	NULL	123456789
2	Best Supplies	987654321	NULL
3	Value Source	NULL	NULL

```

SELECT supplier_id,
       name,
       COALESCE(phone, alt_phone, 'No Contact') AS contact_number,
FROM suppliers;

```

Return:

Suppliers		
supplier_id	name	contact_number
1	Global Goods	123456789
2	Best Supplies	No Contact
3	Value Source	No contact

Q19: Show all users and their preferences. Replace all NULLs with defaults

- * Theme → "Light"
- * Language → "English"
- * Timezone → "UTC"

Expected columns: user_id, theme_set, language_set, timezone_set

Table 15 : User_Settings

user_id	theme	language	timezone
1	NULL	English	NULL
2	Dark	NULL	UTC+1
3	NULL	NULL	NULL

```

SELECT user_id,
       COALESCE(theme, 'Light') AS theme_set,
       COALESCE(language, 'English') AS language_set,
       COALESCE(timezone, 'UTC') AS timezone_set
FROM User_Settings;

```

Return:

User - Settings			
user_id	theme_set	language_set	timezone_set
1	Light	English	UTC
2	Dark	English	UTC+1
3	Light	English	UTC

Q20) Show maintenance log with:

* issue → default to "Unknown Issue"

* technician → default to "Not Assigned"

Expected Columns : record_id, machine_id, issue_log, technician_name

Table 16 : Maintenance

record_id	machine_id	issue	technician
1	M101	Overheating	NULL
2	M102	NULL	NULL
3	M103	Jammed	Alex

SELECT record_id,
machine_id,
COALESCE(issue, 'Unknown Issue') AS issue_log
COALESCE(technician, 'Not Assigned') AS technician_name

FROM Maintenance;

record_id	machine_id	issue_log	technician_log
1	M101	Overheating	Not Assigned
2	M102	Unknown Issue	Not Assigned
3	M103	Jammed	Alex