

BRIGHTLIGHT TUTORIALS

DATA ANALYTICS

EXERCISE 6: NULL FUNCTIONS

Table 1 : Employees

Q1 : Show all employees with salary, if salary is NULL, display 0

Syntax :

```
SELECT employee_id, name,  
IFNULL (salary, 0) AS salary-with-default  
FROM Employees;
```

OUTPUT :

employee_id	name	salary-with-default
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."

Syntax :

```
SELECT employee_id, name,  
IFNULL (department, 'Not Assigned') AS department-name  
FROM Employees;
```

Output :

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

Table 2: Orders

Q3: Find orders with NULL customer_id using ISNULL

Syntax:

```
SELECT order_id, customer_id
FROM Orders
WHERE customer_id ISNULL;
```

Output:	order_id	customer_id
	103	NULL

Q4: Show orders. If delivery_date is NULL, show 'Pending'

Syntax:

```
SELECT order_id, customer_id,
IFNULL (delivery_date, 'Pending') AS delivery_status
FROM Orders;
```

Output:	order_id	customer_id	delivery_status
	101	201	2024-12-01
	102	202	Pending
	103	NULL	2024-12-03

Table 3: Students

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

Syntax :

```
SELECT student_id, name,  
IFNULL (grade, 0) AS final_grade  
FROM students;
```

Output :

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

Q6 : Count students who haven't been graded

Syntax :

```
SELECT COUNT(*) AS not_graded_count  
FROM Students  
WHERE grade ISNULL;
```

Output :

student_id	name	not_graded_count
2	Maya	01

Table 4 : Products

Q7 : Show product name, price, and final price after discount (assume 0 if discount is NULL)

Syntax :

```
SELECT product_id, name, price,  
IFNULL (discount, 0) AS final_price  
FROM Products;
```


Output :	Product-id	name	price	final-price
	501	Keyboard	25	0
	502	Mouse	15	5
	503	Monitor	100	0

Table 5: Customers

Q8: Count how many customers have no email

Syntax :

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

Output :	missing_email_count
	2

Q9: Show all customers with email. If NULL, display "No Email"

Syntax :

```
SELECT customer-id, name,
IFNULL(email, 'No Email') AS email_display
FROM customers;
```

Output :	customer-id	name	email-display
	1	Linda	No Email
	2	Joseph	joseph@mail.com
	3	Hia	No Email

Table 6 : Payments

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

Syntax :

```
SELECT payment-id,  
IFNULL (method, 'Unknown') AS method-display,  
status  
FROM Payments
```

Output :	payment-id	Method-display	status
	301	Credit	NULL
	302	Paypal	Success
	303	Unknown	Failed

Table 7 : Inventory

Q11 : Show items and their quantity (0 if NULL)

Syntax :

```
SELECT item-id,  
item-name,  
IFNULL (quantity, 0) AS quantity-checked  
FROM inventory;
```

Output :

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

Table 8: Employees-Extra

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

Syntax:

```
SELECT emp-id,  
       COALESCE (bonus, commission) AS  
       first-available-reward  
FROM Employees-Extra;
```

Output:

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

Table 9: classes

Q13: Count classes that have no room assigned

Syntax:

```
SELECT COUNT (*) AS no-room-count  
FROM classes  
WHERE room IS NULL;
```

Output: no-room-count
2

Table 10: Attendance

Q14: Attendance records with status and replace NULL with 'Not marked'

Syntax :

```
SELECT student-id,  
       date,  
       IFNULL (status, 'Not Marked') AS attendance-status  
FROM Attendance;
```

Output :

student-id	date	attendance-status
1	2025-04-01	Not Marked
2	2025-04-01	Present
3	2025-04-01	Absent

Table 11 : Bank-Accounts

Q15: Show account-ID, account type (or unknown) and balance (or 0)

Syntax :

```
SELECT account-id,  
       IFNULL (account-type, 'unknown') AS  
       type-display,  
       IFNULL (balance, 0) AS balance-checked  
FROM Bank-Accounts;
```

Output :

account-id	type-display	balance-checked
A1	Savings	0
A2	Current	5000
A3	Unknown	2000

~	curr	English	UTC+1
3	Light	English	UTC

Table 12: Projects

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

Syntax:

```
SELECT project-id,  
       title,  
       IFNULL (start-date, 'TBD') AS start-display  
FROM Projects;
```

Output:

project-id	title	start-display
1	Website Revamp	2025-01-10
2	Mobile App	TBD
3	Data Migration	TBD

Table 13: Reviews

Q17: Display reviews showing comment (or 'No comment') and rating (or 0)

Syntax:

```
SELECT review-id,  
       product-id,  
       IFNULL (comment, 'No comment') AS comment-display,  
       IFNULL (rating, 0) AS rating-display  
FROM Reviews;
```

Output:

review-id	product-id	Comment-display	rating-display
1	501	Great product	4
2	502	No comment	0
3	503	Works fine	3

Table 14: Suppliers

Q18: Show supplier contact number. Use COALESCE (phone, alt-phone, 'No contact')

Syntax:

```
SELECT supplier-id,  
       name,  
       COALESCE (phone, alt-phone, 'No contact') AS  
       contact-number  
FROM Suppliers;
```

Output:

supplier-id	name	contact-number
1	Global Goods	123456789
2	Best suppliers	98 7654321
3	Value Source	No contact

Table 15: User-Settings

Q19: Show all users and their preferences

Syntax:

```
SELECT user-id,  
       IFNULL (theme, 'Light') AS theme-set,  
       IFNULL (language, 'English') AS language-set,  
       IFNULL (timezone, 'UTC') AS timezone-set  
FROM User-Settings
```

user-id	theme-set	language-set	timezone-set
1	Light	English	UTC
2	Dark	English	UTC+1
3	Light	English	UTC

Table 16: Maintenance

Q20: Show maintenance log

Syntax:

```
SELECT record-id,  
       machine-id,  
       IFNULL(issue, 'Unknown Issue') AS issue-log  
       IFNULL(technician, 'Not Assigned') AS technician-name  
FROM Maintenance;
```

Output:

record-id	machine-id	issue-log	technician-name
1	M101	Overheating	Not Assigned
2	M102	Unknown Issue	Not Assigned
3	M103	Jammed	Alex