BrightLight Tutorials – Data Analytics

SQL Fundamentals

Exercise 3: SQL CASE Statements

Instructions:

1. Write your answers on paper using a pen.
2. For each query, **draw a table** showing the final output (the result set).
3. In your `SELECT` statements, choose **relevant columns to display**, unless specified.
4. After completing all questions, **scan your work into a PDF**.
5. Email your PDF to: **rofhiwa@brightlighttutorials.co.za**
6. **Submission Deadline: 21 April 2025, 23:59**

Questions

1. Table: `products`

product_id	product_name	price
1	Laptop	1200.00
2	Phone	800.00
3	Keyboard	45.00
4	Monitor	300.00
5	Mouse	25.00

Question:

Classify each product by price:

- 'Expensive' if price > 1000
- 'Mid-range' if price between 100 and 1000
- 'Budget' if price < 100

Expected Output Columns:

- `product_name`
- `price`
- `price_category`

2. Table: `orders`

order_id	customer_name	amount
1	Alice	150.00
2	Bob	560.00
3	Charlie	999.99
4	Diana	45.50
5	Ethan	1200.00

Question:

Label each order:

- 'High Value' for orders ≥ 1000
- 'Medium Value' for 500–999.99
- 'Low Value' for orders < 500

Expected Output Columns:

- `customer_name`
- `amount`
- `order_value_category`

3. Table: `employees`

emp_id	emp_name	department	salary
1	John	IT	85000
2	Sara	HR	60000
3	Mark	IT	75000
4	Lucy	Finance	95000
5	Tom	HR	55000

Question:

Categorize employee position:

- If in 'IT' and salary > 80000 → 'Senior IT'
- If in 'HR' and salary > 55000 → 'Experienced HR'
- Otherwise → 'Staff'

Expected Output Columns:

- `emp_name`
- `department`
- `salary`
- `position_level`

4. Table: `students`

student_id	student_name	score
1	Anna	92
2	Ben	76
3	Cara	59
4	David	83
5	Ella	68

Question:

Assign a letter grade:

- ≥ 90: 'A'
- 80–89: 'B'
- 70–79: 'C'
- 60–69: 'D'
- < 60: 'F'

Expected Output Columns:

- `student_name`
- `score`
- `grade`

5. Table: `deliveries`

delivery_id	delivery_time_minutes
1	45
2	80
3	30
4	65
5	100

Question:

Label delivery performance:

- ≤ 30 mins: 'Fast'
- 31–60 mins: 'On Time'
- 60 mins: 'Late'

Expected Output Columns:

- `delivery_id`
- `delivery_time_minutes`
- `performance`

6. Table: `tickets`

ticket_id	issue_type	priority
1	Login issue	1
2	Server down	3
3	Slow system	2
4	Email error	2
5	Password reset	1

Question:

Convert priority to labels:

- 3 → 'High'
- 2 → 'Medium'
- 1 → 'Low'

Expected Output Columns:

- `issue_type`
- `priority`
- `priority_label`

7. Table: `attendance`

student_id	days_present	total_days
1	45	50
2	30	50
3	48	50
4	25	50
5	50	50

Question:

Calculate attendance % and classify:

- ≥ 90% → 'Excellent'
- 75–89% → 'Good'
- < 75% → 'Needs Improvement'

Expected Output Columns:

- `student_id`
- `attendance_percentage`
- `attendance_status`

8. Table: `products_inventory`

product_id	stock_qty
1	5
2	0
3	25
4	10
5	3

Question:

Label stock status:

- 0 → 'Out of Stock'
- 1–5 → 'Low Stock'
- 5 → 'In Stock'

Expected Output Columns:

- `product_id`
- `stock_qty`
- `stock_status`

9. Table: `classes`

class_id	subject	enrolled_students
1	Math	30
2	English	25
3	Science	15
4	Art	5
5	History	20

Question:

Classify by size:

- ≥ 25 → 'Large'
- 10–24 → 'Medium'
- < 10 → 'Small'

Expected Output Columns:

- `subject`
- `enrolled_students`
- `class_size_category`

10. Table: `payments`

payment_id	amount	payment_method
1	50.00	Card
2	200.00	Cash
3	150.00	Card
4	75.00	PayPal
5	300.00	Cash

Question:

Apply discount flag:

- If `payment_method = 'Cash'` and amount ≥ 200 → 'Eligible for Discount'
- Otherwise → 'Not Eligible'

Expected Output Columns:

- `payment_id`
- `payment_method`
- `amount`
- `discount_eligibility`