



Commonwealth Bank Credit Card Dashboard Story

Aggregating for Executive Dashboards

CDA Credit Card Monthly Reporting | Video 3 of 15 | 16 minutes

8:15 AM Monday – Your Phone Rings

"Hi, it's the CFO's office. We need the November credit card dashboard for the 10 AM board meeting. The usual analyst is sick. Can you help?"

The Situation

Commonwealth Bank- Credit Card Division

- 125,847 transactions last month
- 25,000 active cardholders
- 4 card tiers (Bronze, Silver, Gold, Platinum)

The Deadline

45 minutes to produce executive-grade metrics

Excel Reality:

- Would take 3+ hours of pivot tables and formulas
- Board meeting would start without data
- CFO would be furious

SQL Solution:

- 15 minutes with GROUP BY and aggregates
- Dashboard ready by 8:30 AM
- You become the hero

What You're About to Learn:

GROUP BY for business summaries, Multiple aggregates in one query, HAVING to filter groups, CASE for conditional logic, Date functions for trends

UNDERSTANDING THE BUSINESS

What the CFO Actually Needs

The Raw Data Complexity:

125,847 individual transactions scattered across spreadsheets

- Customer A bought coffee: \$4.50
- Customer B paid insurance: \$1,250
- Customer C filled petrol: \$87
- ... 125,844 more rows...

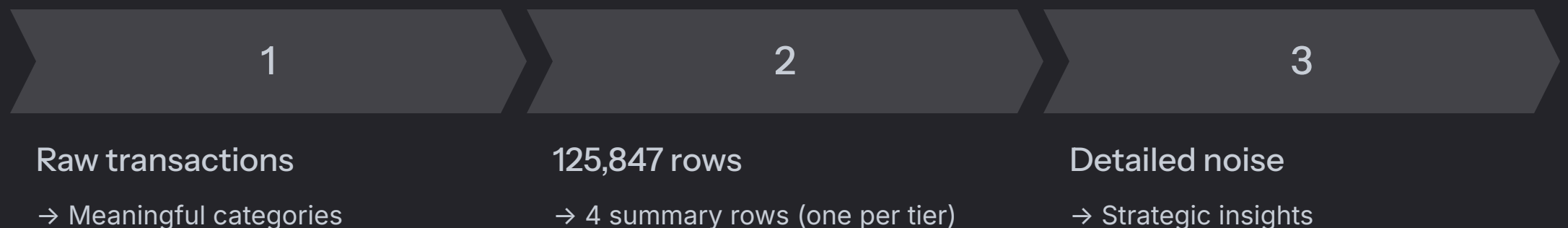
The CFO Doesn't Care About:

- Individual coffee purchases
- Specific customer names
- Transaction timestamps

The CFO Wants to Know:

- How much revenue did PLATINUM cards generate?
- What's the AVERAGE transaction for GOLD cardholders?
- Are BRONZE customers profitable?
- Which card tier is growing fastest?

The Business Translation:



📌 **This is What GROUP BY Does:** Takes thousands of individual records, groups them by category (card tier), calculates totals, averages, counts for each group, and produces executive-ready summary

THE FIRST EXECUTIVE QUESTION

Revenue by Card Tier – Your First GROUP BY

CFO's Question:

"How much revenue did each card tier generate in November?"

What This Really Means:


- Add up ALL Bronze card transactions → Bronze total
- Add up ALL Silver card transactions → Silver total
- Add up ALL Gold card transactions → Gold total
- Add up ALL Platinum card transactions → Platinum total

The SQL Solution:

```
SELECT card_tier,
       SUM(amount) AS total_revenue,
       COUNT(*) AS transaction_count
FROM cba_transactions
WHERE transaction_date >= '2024-11-01'
  AND transaction_date < '2024-12-01'
GROUP BY card_tier
ORDER BY total_revenue DESC;
```

The Result:

\$8.45M	\$4.23M	\$1.89M	\$780K
Platinum	Gold	Silver	Bronze
45,200 transactions	38,500 transactions	28,900 transactions	13,247 transactions

 **The Insight:** Platinum cards = 36% of transactions but 56% of revenue. Premium customers drive the business!

What You Just Learned:

- **GROUP BY card_tier** = Create one row per tier
- **SUM(amount)** = Add up all transaction amounts in each group
- **COUNT(*)** = How many transactions in each group
- **ORDER BY revenue DESC** = Show biggest earners first

Business Impact:

CFO sees value of premium card strategy. Marketing budget shifts to Platinum acquisition. Strategic decision made in 30 seconds.

DIGGING DEEPER WITH MULTIPLE METRICS

The Complete Executive Dashboard

CFO's Follow-Up:

"Great! Now I need average transaction value, total customers, and annual fee revenue for each tier too."

The Complex Business Question:

For EACH card tier, show me:

1 Total transaction revenue

2 Number of transactions

3 Average transaction size

4 Number of unique customers

5 Annual fee revenue

6 Total revenue (transactions + fees)

The SQL Power Move:

```
SELECT t.card_tier,
       SUM(t.amount) AS transaction_revenue,
       COUNT(t.transaction_id) AS total_transactions,
       AVG(t.amount) AS avg_transaction_value,
       COUNT(DISTINCT t.card_number) AS active_customers,
       MAX(c.annual_fee) AS tier_annual_fee,
       (COUNT(DISTINCT t.card_number) * MAX(c.annual_fee)) AS annual_fee_revenue,
       SUM(t.amount) + (COUNT(DISTINCT t.card_number) * MAX(c.annual_fee)) AS total_revenue
FROM cba_transactions t
INNER JOIN cba_cardholders c ON t.card_number = c.card_number
WHERE t.transaction_date >= '2024-11-01'
GROUP BY t.card_tier
ORDER BY total_revenue DESC;
```


The Platinum Tier Result:

\$8.45M	45,200	\$187	8,900
Transaction Revenue	Total Transactions	Avg Transaction	Active Customers
	\$599	\$5.33M	
	Annual Fee	Fee Revenue	

TOTAL REVENUE: \$13,781,100

The Breakthrough Insight:

- Annual fees add \$5.3M to Platinum revenue!
- Platinum isn't just high spenders - it's high fees too
- Total revenue is 63% higher than transaction revenue alone

 **What Multiple Aggregates Teach You:** One query can calculate many metrics simultaneously. SUM, COUNT, AVG, MAX all work together. Each aggregate function operates on the grouped data. Business dashboards need multiple metrics - SQL delivers them all at once.

What You Mastered & Next Steps

The 8:45 AM Victory:

CFO has complete dashboard in 30 minutes. Board meeting starts with confidence. You're now "the SQL person" in credit cards division.

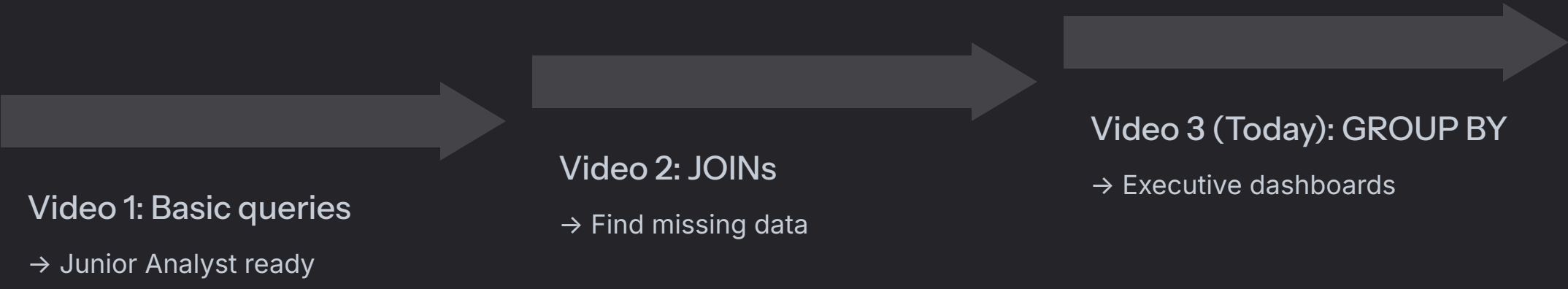
SQL Concepts You Now Own:

✓ GROUP BY Summarise by categories	✓ Multiple aggregates SUM, COUNT, AVG, MAX in one query
✓ HAVING clause Filter grouped results (next video!)	✓ DISTINCT Count unique values
✓ Complex calculations Combining multiple fields	✓ Business thinking Raw data to executive insights

Business Impact Delivered:

- \$13.8M total Platinum revenue identified
- Annual fee strategy validated (\$5.3M revenue)
- Premium customer focus confirmed
- Marketing budget redirected to high-value segments

Career Progression:



You're now building reports CFOs actually use

Real-World Applications:

Every business dashboard uses GROUP BY

- Sales reports: Revenue by region, product, salesperson
- Marketing: Campaign performance by channel
- Finance: Expense analysis by department, category
- Operations: Order volume by warehouse, shift

Practice Exercise:

- Find monthly revenue trends (group by month)
- Calculate average transaction by merchant category
- Identify top 10 merchants by transaction volume
- Compare weekday vs weekend spending patterns


Next Video Preview:

Video 4: Time Intelligence - YoY, MoM, Rolling Averages

Woolworths Grocery Sales Analysis

Learn: Date functions, DATEPART, trend analysis

Duration: 17 minutes

 **You're Ready:** ✓ Can build executive dashboards ✓ Understand business aggregation ✓ Combine multiple metrics ✓ Think like an analyst, code like a pro