Revenue And Profit Calculations

$ COGS = unitsPrice * quantity $

$ VAT = 5% * COGS $

VAT is added to the COGS and this is what is billed to the customer.

$ total(gross_sales) = VAT + COGS $

$ grossProfit(grossIncome) = total(gross_sales) - COGS $

Gross Margin is gross profit expressed in percentage of the total(gross profit/revenue)

$ \text{Gross Margin} = \frac{\text{gross income}}{\text{total revenue}} $

Example with the first row in our DB:

Data given:

- $ \text{Unite Price} = 45.79 $
- $ \text{Quantity} = 7 $

$ COGS = 45.79 * 7 = 320.53 $

$ \text{VAT} = 5% * COGS\= 5% 320.53 = 16.0265 $

$ total = VAT + COGS\= 16.0265 + 320.53 = 336.5565

$ \text{Gross Margin Percentage} = \frac{\text{gross income}}{\text{total revenue}}\=\frac{16.0265}{336.5565} = 0.047619\\approx 4.7619% $

🧻 **Definitions:**

1. **COGS (Cost of Goods Sold)** = *unit price × quantity sold*

This is the cost you spend to buy or produce the items you're selling.

2. **VAT (Value Added Tax)** = *5% of COGS*

This is a tax added on top of the COGS, usually paid by the customer.

3. **Total Revenue (Gross Sales)** = *COGS + VAT*

This is the final price billed to the customer (i.e., how much the customer pays).

4. **Gross Income (Gross Profit)** = *Total Revenue - COGS*

This is your **actual earning**, which in this case is just the VAT (since COGS goes back to buying/producing the item).

5. **Gross Margin %** = *(Gross Profit ÷ Total Revenue) × 100*

This is a percentage showing **how much profit** you're making from the revenue.

📊 Now, let's plug in your data:

✅ **Step 1: COGS**

```
java

COGS = Unit Price × Quantity
     = 45.79 × 7
     = 320.53
```

✅ **Step 2: VAT**

```
java

VAT = 5% of COGS
    = 0.05 × 320.53
    = 16.0265
```

✅ **Step 3: Total Revenue (what the customer pays)**

```
makefile

Total = COGS + VAT
      = 320.53 + 16.0265
      = 336.5565
```

✅

✅ **Step 4: Gross Profit (Your earnings)**

```
java

Gross Profit = Total - COGS
             = 336.5565 - 320.53
             = 16.0265
```

> You earned ₹16.03 on this sale.

✅ **Step 5: Gross Margin %**

```
java

Gross Margin = (Gross Profit ÷ Total Revenue) × 100
             = (16.0265 ÷ 336.5565) × 100
             ≈ 0.047619 × 100
             ≈ 4.76%
```

Assumptions (Your Table Columns)

Let's assume your table is called sales, with the following columns:

Column	Meaning
unit_price	Price per item

Column	Meaning
quantity	Quantity sold

```sql
SELECT
    unit_price,
    quantity,

    -- Step 1: COGS = unit_price * quantity
    (unit_price * quantity) AS COGS,

    -- Step 2: VAT = 5% of COGS
    (unit_price * quantity * 0.05) AS VAT,

    -- Step 3: Total Revenue = COGS + VAT
    (unit_price * quantity * 1.05) AS total_revenue,

    -- Step 4: Gross Profit = VAT
    (unit_price * quantity * 0.05) AS gross_profit,

    -- Step 5: Gross Margin % = Gross Profit / Total Revenue * 100
    ROUND((unit_price * quantity * 0.05) / (unit_price * quantity * 1.05) * 100, 2) AS gross_margi

FROM
    sales;
```

☑ Explanation:

- **COGS** = unit_price * quantity
- **VAT** = 5% of COGS = COGS * 0.05
- **Total Revenue** = COGS + VAT = COGS * 1.05
- **Gross Profit** = VAT (since that's your markup)
- **Gross Margin %** = (VAT / Total Revenue) * 100