Business Logic Reasoning Warm-Up

What Is Business Logic?

Business logic means the rules that describe how the real world works inside your program.
For example, a company might say:
- Employees earn overtime pay for hours over 40.
- New customers get a 10% discount.

Those are business rules, and our job as programmers is to turn them into code logic using if statements, calculations, and variables.

Many beginners find this hard at first because your brain is doing several things at once:
- Remembering the rules
- Thinking about the code
- Keeping track of the order of steps

That's normal. The more we practice writing out logic clearly before coding, the easier it becomes.

Instructions

Each group will receive a different business scenario. Your task is to fill out the reasoning form below for your assigned scenario. You do NOT need to write code — focus on the logic.

Possible Scenarios (One Per Group)

1. Sales Bonus Calculator

A company pays sales staff a base salary and gives a bonus based on sales amounts and months worked.
Rules:

Every salesperson has a base salary.

If sales are greater than $10,000, they earn a 10% bonus on sales.

If sales are greater than $20,000, they earn a 15% bonus instead.

New hires (less than 3 months) have a maximum bonus of $500.

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2. Shipping Cost Calculator

Shipping cost depends on package weight, delivery speed, and distance.
Rules:

Regular delivery costs $5 plus $0.25 per mile.

Express delivery costs $10 plus $0.40 per mile.

Packages over 20 lbs add a $5 heavy item fee.

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3. Movie Ticket Pricing

Ticket price changes depending on age group, day of the week, and student status.
Rules:

Regular adult ticket price: $12.

Seniors (65+) pay $8.

Children (under 13) pay $6.

Students get a $2 discount on any ticket.

Tuesday is discount day: all tickets are 20% off.

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4. Loyalty Points System

Customers earn points based on how much they spend, with different multipliers for membership levels.
Rules:

Regular members earn 1 point per $1 spent.

Silver members earn 1.5 points per $1 spent.

Gold members earn 2 points per $1 spent.

On double-points day, all points are multiplied by 2.

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5. Insurance Premium Adjustment

Insurance cost depends on driver age, accident history, and type of vehicle.
Rules:

Base premium: $100 per month.

Drivers under 25 pay a 25% surcharge.

Drivers over 65 get a 10% discount.

Each accident in the last 3 years adds $20.

Sports cars add an extra $50 fee.

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6. Store Discount Rules

Customers get different discounts depending on total purchase amount, membership tier, and whether an item is on sale.
Rules:

Purchases under $50: no discount.

Purchases between $50–$100: 5% discount.

Purchases over $100: 10% discount.

Members get an extra 5% off.

Sale items cannot have any other discounts applied.

Business Logic Reasoning Form

Scenario Title: _____

1. Inputs – What information do we need to know before calculating or deciding?

2. Outputs – What should the program show or return at the end?

3. Rules / Conditions – Write out the main 'if' statements in plain English.

4. Test Examples – Try a few sample inputs and expected results.

Example Input 1	Example Input 2	Example Input 3	Expected Output

5. Edge Case – What happens in boundary or special situations?

Reflection

1. Did your logic cover all the rules?
2. Were any rules confusing or missing details?
3. If the business changed the rules, what would be easy or hard to update?