🚀 Advanced Scenario-Based Coding Tasks (Conditional Statements)

Java Learning Hub!.. 🚀

Q. Smart Traffic Signal Controller

- Scenario: Implement a system where traffic lights change based on vehicle density.
- Input: Number of vehicles in a lane.
- Output: Green if < 10, Yellow if 10-30, Red if > 30.

Q. Online Payment Fraud Detection

- Scenario: A banking system detects fraudulent transactions.
- Input: Amount & location.
- Output: Flag as suspicious if the amount > ₹50,000 & location differs from the last 5 transactions.

Q. Movie Ticket Pricing System

- Scenario: A theater charges different prices based on age.
- Input: Age of the customer.
- Output: Child (₹100), Adult (₹200), Senior Citizen (₹150).

Q. Smart Door Lock System

- Scenario: A digital lock verifies the correct PIN.
- Input: Entered PIN vs Stored PIN.
- Output: "Access Granted" if correct, "Incorrect PIN" if wrong, "Account Locked" after 3 wrong attempts.

Q. Airport Baggage Weight Checker

- Scenario: Airlines impose a fine if luggage is overweight.
- Input: Baggage weight.
- Output: If > 20kg, charge ₹500 per extra kg.

Q. Water Purifier Filter Change Alert

- Scenario: A smart purifier notifies the user when a filter needs changing.
- Input: Days since the last filter change.
- Output: Alert if > 180 days.

Q. Weather-Based Outfit Recommender

- Scenario: Suggest clothes based on temperature.
- Input: Temperature.
- Output: Cold (< 15°C) - "Wear Jacket", Normal (15-30°C) - "T-shirt", Hot (>30°C) - "Wear light clothes".

Q. Online Shopping Discount System

- Scenario: A website gives discounts based on order amount.
- Input: Total purchase amount.
- Output: ₹500-₹1000 → 5% off, ₹1001-₹5000 → 10% off, >₹5000 → 20% off.

Q. Elevator System Control

- Scenario: An elevator decides whether to move up or down based on floor requests.
- Input: Current floor, Requested floor.
- Output: "Move Up", "Move Down", "Stay".

Q. Smart Home Temperature Control

- Scenario: An AC turns ON/OFF based on room temperature.
- Input: Current room temperature.
- Output: AC ON (> 28°C), AC OFF (< 22°C), Maintain (22-28°C).

Q. Spam Message Detector

- Scenario: A chat app filters spam messages.
- Input: Message content.
- Output: "Spam Detected" if it contains words like "FREE", "WIN", "CLICK HERE".

Q. Online Exam Proctoring System

- Scenario: A system detects if a student switches tabs during an exam.
- Input: Tab switches count.
- Output: Warning at 3 switches, Auto-submit at 5 switches.

Q. Digital Wallet Transaction Limit

- Scenario: A wallet app limits daily transactions.
- Input: Amount spent today.
- Output: If > ₹50,000, "Daily Limit Reached".

Q. Speed Radar Detection

- Scenario: A smart camera detects overspeeding vehicles.
- Input: Speed of vehicle.
- Output: "Normal" (<= 60 km/h), "Warning" (61-80 km/h), "Fine Issued" (> 80 km/h).

Q. Hospital Emergency Room Priority System

- Scenario: A hospital assigns priority to patients.
- Input: Condition severity (Mild, Moderate, Severe).
- Output: "Low Priority", "Medium Priority", "High Priority".

Q. Fuel Efficiency Calculator

- Scenario: A vehicle checks fuel efficiency.
- Input: Distance traveled & fuel used.
- Output: If mileage < 10 km/l → "Low Efficiency", 10-20 km/l → "Normal", > 20 km/l → "High Efficiency".

Q. IoT-Based Smart Street Lighting

- Scenario: Streetlights turn ON/OFF based on light intensity.
- Input: Light intensity value.
- Output: If < 50 → "Turn ON", Else → "Turn OFF".

Q. Parking Lot Availability System

- Scenario: A parking system indicates availability.
- Input: Total slots & occupied slots.
- Output: If available slots > 0 → "Parking Available", Else → "Full".

Q. Blood Donation Eligibility System

- Scenario: Checks if a person is eligible to donate blood.
- Input: Age & weight.
- Output: Age > 18 & weight > 50kg → "Eligible", Else → "Not Eligible".

Q. Online Learning Platform Progress Tracker

- Scenario: A platform tracks student progress.
- Input: % of course completed.
- Output: 0-25% → "Getting Started", 26-75% → "Keep Going", 76-99% → "Almost There", 100% → "Course Completed".

Don't just read about coding—write, break, debug, and learn!