

# Advanced 1-Hour Java Assessment Task

**Difficulty Level:** Moderate → Hard (Placement-Oriented)  
**Topics Covered:** Datatypes, Variables, Operators, If, If-Else, If-Else-If, Switch, Nested Switch, Nested Decision Making, Logical Operators

## Problem Statement: Travel Ticket Booking & Fare Processing System

Design a Java program that simulates a travel ticket booking system. The program must validate passenger details, calculate fare dynamically, apply discounts, and determine booking status using multiple decision structures.

### Step 1: Passenger Input

- Passenger ID (int)
- Passenger Name (String)
- Age (int)
- Travel Type (int): 1-Bus, 2-Train, 3-Flight
- Base Fare (double)
- Is Government Employee (boolean: true/false)

### Step 2: Age & Eligibility Validation (if / else)

- If age < 5 → Print 'Free Ticket – No Booking Required' and stop execution.
- If age > 80 → Print 'Medical Clearance Required' and stop execution.
- Else → Continue booking process.

### Step 3: Travel Type & Class Selection (Nested Switch)

**Bus:** 1-Sleeper, 2-Seater  
**Train:** 1-General, 2-Sleeper, 3-AC  
**Flight:** 1-Economy, 2-Business

### Step 4: Fare Multiplier Calculation

| Travel Type | Class    | Multiplier |
|-------------|----------|------------|
| Bus         | Sleeper  | 1.2        |
| Bus         | Seater   | 1.0        |
| Train       | General  | 1.0        |
| Train       | Sleeper  | 1.3        |
| Train       | AC       | 1.6        |
| Flight      | Economy  | 2.5        |
| Flight      | Business | 3.5        |

Fare After Class = Base Fare × Multiplier

### Step 5: Discount Calculation (if-else-if + logical operators)

- Apply discounts in the following priority order:
- Age ≥ 60 → 30% Senior Citizen Discount
  - Else if Government Employee → 15% Discount
  - Else if Age between 5 and 12 → 50% Child Discount
  - Else → No Discount

Final Fare = Fare After Class – Discount Amount

### ***Step 6: Booking Status (Nested Decision Making)***

- If final fare  $\geq 10,000$ :
  - If travel type is Flight  $\rightarrow$  Booking Status: Confirmed
  - Else  $\rightarrow$  Booking Status: Waiting List
- Else  $\rightarrow$  Booking Status: Confirmed

### ***Step 7: Display Ticket Summary***

Display Passenger ID, Name, Travel Type, Class, Base Fare, Final Fare, Discount Applied, and Booking Status.

**Note:** Use meaningful variable names, proper indentation, and clear output formatting. Partial logic errors will reduce marks.