

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.