Assignment: Movie Ticket Price Calculator

Objective:

The goal of this assignment is to create a C++ program that calculates the price of a movie ticket based on several criteria using if-else conditions and switch-case statements. This assignment will help you practice decision-making in C++ and work with user input.

Instructions:

1. Problem Statement:

You are required to create a **Movie Ticket Price Calculator** that will determine the price of a movie ticket based on the following criteria:

- Age:
  - Children (12 and under): $8.00
  - Adults (13 to 59): $12.00
  - Seniors (60 and above): $10.00
- Showtime (24-hour format):
  - Morning show (from 9 AM to 5 PM): 10% discount on the ticket price.
- Seat Type:(Hint : Use switch case)
  - Standard: No extra charge.
  - Premium: Additional $5.00 added to the base ticket price.
  - Combo: Additional $7.00 added to the base ticket price.
  - Upgrade for Gold Member: Additional $10.00 added to the base ticket.
- Loyalty Card:
  - If the user has a loyalty card, they get a 15% discount on the total price after other calculations.

2. Program Requirements:

- The program should prompt the user for their “age”, “showtime”, “seat type”, and “loyalty card” status.

- Based on the user's input, the program should calculate the **final ticket price** using “if-else conditions” and a “switch-case” statement for selecting the seat type.

- You must use at least one “switch-case” and multiple “if-else” conditions.

- Implement “input validation” to handle cases where the user provides incorrect input (e.g., negative numbers for age, invalid showtime, etc.).

3. “Detailed Instructions”:

- “Step 1”: Ask the user for their “age” and determine the base ticket price using if-else conditions:

  - If age is 12 or under, set the base price to $8.00.

  - If age is between 13 and 59, set the base price to $12.00.

  - If age is 60 or older, set the base price to $10.00.

- Step 2: Ask the user for the showtime (in 24-hour format). If the showtime is between 9AM and 5 PM (17:00), apply a 10% discount to the base price.

- Step 3: Ask the user for their preferred seat type. Use a switch-case statement to determine if the seat type is:

  - Standard (no extra charge).

  - Premium (add $5.00 to the ticket price).

- Step 4: Ask if the user has a loyalty card (yes or no). If yes, apply a 15% discount on the final price after all other discounts are applied.

- Step 5: Display the “final ticket price” with two decimal places using the appropriate format manipulators (e.g., `fixed` and `set precision`).

4. Program Flow:

The program should follow this basic flow:

- Get the user’s age.

- Get the showtime (in 24-hour format).

- Get the seat type using a switch-case statement.

- Check if the user has a loyalty card (apply a discount if they do).

- Calculate and display the final ticket price.

- Ensure proper formatting and input validation.

5. Error Handling:

- Validate that the age is a positive number.

- Ensure the showtime is a valid hour between 9AM and 11PM (use 24 hours formatting for 11PM it is 23:00).

- Validate seat type and loyalty card responses (ask again if an invalid input is provided).

Example Output:

```
Enter your age: 12
Enter the showtime (24-hour format between 9AM - 5PM, e.g., 14 for 2 PM): 9
Choose seat type
1 for Standard
2 for Premium
3 for Combo
4 for Upgrade to gold member 1
Do you have a loyalty card? (1 for Yes, 0 for No): 1
Final Ticket Price: $6.12
```

```
Enter your age: 20
Enter the showtime (24-hour format between 9AM - 5PM, e.g., 14 for 2 PM): 10
Choose seat type
1 for Standard
2 for Premium
3 for Combo
4 for Upgrade to gold member 2
Do you have a loyalty card? (1 for Yes, 0 for No): 1
Final Ticket Price: $13.43
```

```
Enter your age: 60
Enter the showtime (24-hour format between 9AM - 5PM, e.g., 14 for 2 PM): 5
Invalid showtime entered!
```

```
Enter your age: 60
Enter the showtime (24-hour format between 9AM - 5PM, e.g., 14 for 2 PM): 17
Choose seat type
1 for Standard
2 for Premium
3 for Combo
4 for Upgrade to gold member 3
Do you have a loyalty card? (1 for Yes, 0 for No): 1
Final Ticket Price: $14.45
```

Grading Criteria:

Correctness: The program calculates the correct ticket price based on user input.

- Use of if-else and switch-case: The program should appropriately use both control structures.

- Input Validation: The program should handle incorrect inputs gracefully.

- Code Style: Proper indentation, meaningful variable names, and comments explaining the logic.

- Formatting: Output should be neatly formatted, and the final price should display with two decimal places.

Submission Instructions:

- Submit your C++ source code file (`.cpp`) in git as well as blackboard.

- Ensure your code compiles and runs without errors.

- Add comments to explain the key parts of your code.

Good luck with the assignment!