

# Test Cases

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November 20, 2023

## **1 Introduction**

This is the introduction section of my document.

## 2 Test Scenario 1: City and Train Management

### 2.1 Test Case 1.1: Add a New City

**Description:** Verify that a new city can be added to the system.

**Preconditions:**

- The system is running.
- The user is authorized to add a new city.

**Steps:**

1. Add a new city.

**Expected Result:** The city should be added to the list of cities in the system.

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### 2.2 Test Case 1.2: Add a New Train

**Description:** Verify that a new train can be added to the system.

**Preconditions:**

- The system is running.
- The user is authorized to add a new train.

**Steps:**

1. Add a new train.

**Expected Result:** The new train should be added to the list of trains in the system.

## 3 Test Scenario 2: Trip Management

### 3.1 Test Case 2.1: Create a New Trip

**Description:** Verify that a new trip can be added to the system considering the specific constraints.

**Preconditions:**

- The system is running.
- The user is authorized to add a new trip.

**Steps:**

1. Provide valid details for the new trip: Origin
2. Provide valid details for the new trip: Destination
3. Provide valid details for the new trip: Train
4. Provide valid details for the new trip: Departure Time
5. Provide valid details for the new trip: Arrival Time

**Expected Result:** The new trip should be created and registered in the system.

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### 3.2 Test Case 2.2: Cancel Trip

**Description:** Verify that a trip can be canceled in the system.

**Preconditions:**

- The system is running.
- The user is authorized to cancel a trip.

**Steps:**

1. Select a trip to cancel

**Expected Result:** The selected trip should be canceled, and all associated tickets should also be canceled.

## 4 Test Scenario 3: Ticket Booking and Cancellation

### 4.1 Test Case 3.1: Book a Ticket

**Description:** Verify that a new ticket can be booked for a trip if the trip has not reached the maximum number of passengers.

**Preconditions:**

- The system is running.
- The user is authorized to book a ticket.
- There is an available trip.

**Steps:**

1. Select an available trip
2. Provide passenger name
3. Book a ticket

**Expected Result:** A new ticket should be booked for the selected trip.

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### 4.2 Test Case 3.2: Cancel a Ticket

**Description:** Verify that a booked ticket can be canceled.

**Preconditions:**

- The system is running.
- The user has a booked ticket.

**Steps:**

1. Select a booked ticket

**Expected Result:** The selected ticket should be canceled, and the trip should be updated accordingly.

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### 4.3 Test Case 3.3: Book a Ticket for a full trip

**Description:** Verify that a ticket for a full trip cannot be created.

**Preconditions:**

- The system is running.

**Steps:**

1. Create a ticket for a trip with max passengers

**Expected Result:** The ticket should not be booked and it must give an error.

## 5 Test Scenario 4: Delay Management

### 5.1 Test Case 4.1: Add Departure Delay to a Trip

**Description:** Verify that a departure delay can be added to a trip, and it updates the real departure time.

**Preconditions:**

- The system is running.
- There is a trip available for delay.

**Steps:**

1. Select a trip
2. Add departure delay

**Expected Result:** The departure delay should be added to the trip, and the real departure time should be updated accordingly.

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### 5.2 Test Case 4.2: Add Arrival Delay to a Trip

**Description:** Verify that an arrival delay can be added to a trip, and it updates the real arrival time.

**Preconditions:**

- The system is running.
- There is a trip available for delay.

**Steps:**

1. Select a trip
2. Add arrival delay

**Expected Result:** The arrival delay should be added to the trip, and the real arrival time should be updated accordingly.

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### 5.3 Test Case 4.3: Add Departure Delay more than Duration to pass arrival date

**Description:** Verify that a departure date cannot pass arrival time after being delayed.

**Preconditions:**

- The system is running.
- There is a trip available for delay.

**Steps:**

1. Select a trip
2. Add departure delay more than duration

**Expected Result:** The departure delay should not be added to the trip, or the arrival time must be updated.

## **6 Test Scenario 5: Delay Management**

### **6.1 Test Case 5.1: Add Departure Delay to a Trip**