In our traffic assignment package, we have a variety of standard solutions available. However, to ensure accurate evaluation and comparison of different scenarios, it is crucial to establish a more formal testing procedure. This procedure will involve checking the link performance, route assignment file, and system\_performance\_summary file using various data sets. Let's examine the three specific scenarios that require testing:

1. **Two-Corridor Example for Simple User Equilibrium (UE) with Excel File as Standard Solution:** This scenario involves analyzing a two-corridor network under simple UE conditions. We will use an Excel file as the standard solution to capture the entire computing sequence of different elements. The testing procedure will include:
   * Evaluating link performance to assess the flow and congestion on each link.
   * Checking the route assignment file to ensure the correct allocation of traffic flows to routes.
   * Verifying the system\_performance\_summary file to obtain an overview of the overall system performance.
2. **Braess Paradox Network for No Build vs. Build Scenarios with Excel File as Standard Solution:** In this scenario, we will examine the Braess paradox network under two scenarios: no build (existing network) and build (after implementing a new construction project). The goal is to observe the effects of the new construction on traffic flow and congestion. We will utilize an Excel file as the standard solution, which will illustrate the entire computing sequence of different elements. The testing procedure will involve:
   * Analyzing link performance to compare the flow and congestion levels in the no build and build scenarios.
   * Examining the route assignment file to understand how traffic flows are distributed among routes in both scenarios.
   * Reviewing the system\_performance\_summary file to gain insights into the overall system performance under each scenario.
3. **Sioux Falls Network for Medium Size Link Travel Volume under UE Conditions with 24 Zones:** This scenario focuses on the Sioux Falls Network, which represents a medium-sized transportation network with 24 zones. We will analyze the link travel volume under UE conditions. The testing procedure will include:
   * Assessing the link performance to determine the volume of traffic on each link and identify any congestion points.
   * Verifying the route assignment file to ensure proper distribution of traffic flows among routes.
   * Analyzing the system\_performance\_summary file to obtain a comprehensive overview of the system's performance, considering factors such as travel times, congestion levels, and overall efficiency.

By establishing a more formal testing procedure for these scenarios, we can effectively evaluate the performance of our traffic assignment package and compare it against standard solutions captured in Excel files. This approach ensures accurate assessments and provides valuable insights into the behavior of transportation networks under various conditions.

**Check 1: Two-Corridor Example**

Given:

* Demand: 7000
* Link volume: To be checked
* Route assignment: To be checked

1. **Experiment #1** Settings:
   * Section: assignment
   * Key: number\_of\_iterations
   * Value: 1
   * Key: route\_output
   * Value: 0

Expected result:

* + Link performance should have a volume of 7000 for the two links on one route.

1. **Experiment #2** Settings:
   * Key: number\_of\_iterations
   * Value: 1
   * Key: route\_output
   * Value: 1

Expected result:

* + Route assignment should have a flow of 7000 for one route.

1. **Experiment #3** Settings:
   * Section: assignment
   * Key: number\_of\_iterations
   * Value: 2
   * Key: route\_output
   * Value: 1

Expected result:

* + Route assignment should have a flow of 7000 for one route.
  + Travel time should be calculated as 48.1367.

By following these steps, we can effectively evaluate the performance of the traffic assignment package for the two-corridor example. Similar procedures will be applied for other scenarios, such as the Braess paradox network and the Sioux Falls Network, to ensure accurate assessment using appropriate data sets and standard solutions.