PHASE 5: PERFORMANCE TESTING PHASE

5.1 Testing Strategy

- After completing the configuration and development of the FoodConnect application, a detailed performance and functionality testing cycle was carried out. The main objective of this phase was to ensure that every component of the Salesforce system functioned as expected under normal and peak usage conditions. Testing focused on validating data integrity, automation efficiency, and overall system responsiveness.
- The testing process included multiple Salesforce modules such as object creation, record insertion through flows, trigger execution, and visualization through reports and dashboards. Each module was evaluated independently and then tested collectively to ensure seamless integration across the entire system.
- Object creation testing confirmed that new records for venues, volunteers, drop-off points, and tasks could be added without any validation or relationship errors. Flow testing verified that the automated record creation process worked smoothly, accurately capturing input data and storing it in the database. The Apex trigger was tested to ensure that distance values were automatically calculated and updated correctly before a record was saved. Report and dashboard testing focused on verifying data accuracy, layout clarity, and loading performance.
- All testing activities were conducted in the Salesforce Developer Org environment, simulating real-world user interactions. The results confirmed that the system met all functional and performance requirements, maintaining consistency and accuracy throughout the workflow.

5.2 Test Scenarios and Observations

- During the testing phase, several scenarios were executed to validate the core functionality of the FoodConnect application. Creating a new venue record successfully stored all donor information and automatically linked it with the associated NGO. Running the flow confirmed that data entered through the screen interface was correctly inserted into the relevant Salesforce objects. Trigger execution tests verified that the calculated distance field updated automatically whenever a new drop-off point record

was added.

- When reports and dashboards were generated, they accurately displayed data related to volunteers, tasks, and overall food distribution metrics. The sharing rules were also tested to ensure that each NGO group—Iksha, NSS, and Street Cause—could only view the records assigned to them based on their distance criteria. Every test case executed produced the expected results, and no errors or system crashes were encountered during validation.
- The outcome of these tests demonstrated that all automation processes, data models, and logic rules worked effectively together. The system maintained stability, accuracy, and speed even when handling multiple simultaneous operations, confirming its readiness for production use.

5.3 Performance Metrics and Analysis

- Performance testing focused on evaluating the speed, reliability, and responsiveness of different operations within the system. Record creation was consistently completed within less than two seconds, while flow execution averaged about two and a half seconds. Dashboards, which involved multiple data visualizations, loaded completely in approximately three seconds. The error rate during testing remained at zero percent, which exceeded the expected performance target of fewer than five percent.
- These results confirm that the FoodConnect application is well optimized for performance and scalability. The system demonstrated the ability to manage data transactions efficiently while maintaining a smooth user experience. Salesforce's underlying cloud infrastructure contributed to these consistent results by providing robust data handling and secure processing capabilities.

5.4 Outcome of Testing

- The overall outcome of the testing phase indicated that the FoodConnect Salesforce application performed efficiently and reliably in all evaluated areas. Data relationships were correctly maintained, and all triggers and automation processes executed without

error. Reports and dashboards provided clear, real-time visual insights, ensuring that

administrators and NGOs could make quick, data-driven decisions. Access controls were verified to be functioning as intended, guaranteeing that data visibility was limited to authorized users only.

- The application thus proved to be both functionally stable and performance-efficient. It can now be confidently deployed in real-world NGO operations to streamline the food donation and distribution process. The combination of accurate automation, secure sharing rules, and responsive dashboards ensures that the system supports organizational transparency and operational effectiveness.