INTERNSHIP REPORT

ON

FAST FOOD DELIVERY SYSTEM

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Batch: 2023-24

ACKNOWLEDGEMENT

We would like to take this opportunity to thank all the people who were part of this seminar in numerous ways, people who gave un-ending support right from the initial stage.

In particular we wish to thank **Prof. Sagar Patil** as internal project guide who gave their co-operation timely and precious guidance without which this project would not have been a success. We thank them for reviewing the entire project with painstaking efforts and more of his, unbanning ability to spot the mistakes.

And last but not the least we would like to thank all my friends who were Associated with me and helped me in preparing my project. The project named **"Fast Food Delivery"** would not been possible without the extensive support of people who were directly or indirectly involved in its successful execution.

Abstract

This project involves designing and implementing an online food delivery platform using Salesforce. The platform facilitates seamless user registration, menu browsing, order placement, payment processing, and delivery tracking. Key features include custom objects, dynamic dashboards, workflow automation, personalized email notifications, and robust security measures. The project aims to enhance operational efficiency, improve customer experience, and provide actionable insights for stakeholders.

Table of Contents

Chapter 1: Introduction

1.1 Introduction

The rise of online food delivery services has transformed the food industry, making it convenient for customers to order meals from their favorite restaurants. This project leverages Salesforce to create a robust platform that automates and streamlines the process, ensuring an efficient, secure, and user-friendly experience for customers, restaurants, and delivery staff.

1.2 Motivation

The motivation behind this project stems from the growing demand for efficient and reliable food delivery solutions. Traditional systems often face challenges such as data inaccuracies, delayed deliveries, and limited insights. This project aims to address these gaps by utilizing Salesforce's powerful capabilities.

1.3 Problem Statement

Existing food delivery platforms often suffer from inefficiencies in order management, lack of real-time insights, and inadequate automation. Additionally, ensuring data security and seamless integration with external systems remains a challenge. This project seeks to build a comprehensive solution to overcome these limitations.

1.4 Objectives of the Proposed Work

1. To design a scalable and efficient food delivery platform using Salesforce.
2. To automate workflows for order processing, notifications, and tracking.
3. To provide actionable insights through dynamic reports and dashboards.
4. To ensure robust security and seamless integration with third-party services.

Chapter 2: Literature Review

2.1 Literature Review

The **online food delivery industry** has experienced rapid growth, driven by technological advancements and changing consumer behavior. This chapter reviews existing platforms, methodologies, and challenges, highlighting the gaps this project addresses through Salesforce's capabilities.

Existing Food Delivery Platforms

Popular food delivery platforms like **Uber Eats**, **Zomato**, and **Swiggy** provide seamless user experiences by integrating features such as menu browsing, order placement, and delivery tracking. However, several challenges persist:

1. **Data Management Inefficiencies:**
    - Complex databases often lead to errors in order processing and tracking.
2. **Limited Automation:**
    - Dependence on manual updates for order statuses and notifications increases delays.
3. **Scalability Challenges:**
    - Handling high user traffic during peak hours remains a significant hurdle.

Studies on Automation in Food Delivery

Research indicates that automating workflows improves efficiency and reduces human error. Tools like **Salesforce Process Builder** and **Flow** have demonstrated their effectiveness in:

1. **Order Status Updates:**
    - Automating notifications for order confirmation, preparation, and delivery.
2. **Data Synchronization:**
    - Seamlessly integrating data from multiple sources (e.g., restaurants, delivery agents).

Challenges in Real-Time Tracking

Real-time delivery tracking is critical to customer satisfaction. Studies reveal that:

1. Integration with third-party delivery systems like Google Maps APIs improves tracking accuracy.
2. Platforms lacking robust integration face delays and inaccuracies in tracking data.

Importance of Insights and Analytics

Effective use of reports and dashboards empowers businesses to:

1. Monitor order performance and customer preferences.
2. Identify peak sales periods and optimize resource allocation.

   However, traditional platforms often lack advanced, customizable analytics tools. Salesforce's reporting features address these gaps effectively.

Salesforce as a Solution

Salesforce's cloud-based CRM system provides robust features to overcome the aforementioned challenges:

1. **Custom Objects and Automation:**
   - Streamlined order management through custom workflows.
2. **Integration Capabilities:**
   - Seamless integration with payment gateways and delivery systems.
3. **Security Features:**
   - Role-based access controls and encryption ensure data integrity.
4. **Scalability and Customization:**
   - Adaptable to handle increasing user demands while supporting business-specific requirements.

Chapter 3: Software Requirement Specification

This chapter outlines the software requirements for the online food delivery platform, including functional and non-functional requirements. It also specifies the hardware and software prerequisites for the development and deployment of the system.

3.1 Assumptions and Dependencies

- Assumptions:
    1. The Salesforce platform will serve as the core for development and deployment.
    2. All users, including customers and restaurant partners, will have reliable internet access.
    3. Third-party integrations (e.g., payment gateways, delivery services) will function as expected.
- Dependencies:
    1. Availability of Salesforce tools like Process Builder, Flow, and Apex.
    2. APIs for payment and delivery tracking are accessible and functional.
    3. Browser compatibility with Salesforce Lightning Experience.

3.2 Functional Requirements

1. **User Registration and Authentication:**
    - Allow users to sign up, log in, and reset passwords securely.
2. **Menu Browsing and Order Placement:**
    - Enable customers to browse restaurant menus and place orders.
3. **Order Processing and Notifications:**
    - Automate status updates and notifications for orders.
4. **Payment Integration:**
    - Support secure transactions through third-party gateways.
5. **Delivery Tracking:**
    - Provide real-time updates on delivery status.
6. **Reports and Dashboards:**
    - Generate insights for order performance and customer trends.

3.3 System Requirements

3.3.1 Database Requirement

- **Custom Objects:**
    - Customer, Restaurant, MenuItem, Order, Delivery, and related junction objects.
- **Relationships:**
    - One-to-Many: Customer → Order; Restaurant → MenuItem.
    - Many-to-Many: Order → MenuItem using a junction object like OrderItem.
- **Storage:**
    - Adequate data storage to handle customer details, order history, and menu data.

3.3.2 Software Requirement

- Salesforce Lightning Experience.
- Apex for trigger implementation and custom logic.
- Process Builder and Flow for automation.
- REST/SOAP APIs for external integrations.
- Testing tools such as Salesforce Developer Console and UAT platforms.

3.3.3 Hardware Requirement

- **Client Side:**
    - Device with internet connectivity (PC, tablet, or smartphone).
    - Modern web browsers (e.g., Chrome, Firefox).
- **Server Side:**
    - Salesforce cloud infrastructure to host the platform.
    - Third-party integration servers for payment and delivery tracking.

Chapter 4: System Design

4.1 System Architecture

The system architecture defines the overall structure and interaction of the online food delivery platform, emphasizing modularity, scalability, and efficiency. The platform is built using Salesforce's multi-tier architecture, with distinct layers for:

1. **Presentation Layer:**
    - Salesforce Lightning Experience and Community Portals for user interactions.
    - Separate interfaces for customers, restaurant partners, and administrators.
2. **Application Layer:**
    - Apex classes, triggers, Process Builder, and Flows to handle business logic and workflows.
    - Automation for order status updates, notifications, and delivery tracking.
3. **Data Layer:**

Custom objects and relationships in Salesforce to store and manage data (e.g., Customer, Order, MenuItem).

4.2 Data Flow Diagram (DFD)

In the **Data Flow Diagram (DFD)**, we illustrate the flow of data within the online food delivery system. The DFD visually represents how inputs, processes, and outputs interact with external entities.

- **Delivery Updates:** Real-time tracking information for customers.
- **Reports and Dashboards:** Performance data for administrators

DFD 0: Context Diagram

At this level, the **base DFD** provides an abstract view of the system, showing external entities as inputs and outputs, and the system as a central process.

- **Representation:**
    - **Rectangles:** Represent external entities such as **Customers**, **Restaurants**, **Payment Gateways**, and **Delivery Services**.
    - **Circle:** Represents the **Online Food Delivery Platform**, which acts as the central system.
    - **Inputs:** User registration details, menu information, order requests, and payment details.
    - **Outputs:** Notifications, order statuses, delivery updates, and reports

DFD 1: System Overview

This level shows the actual inputs and outputs of the system, detailing the interactions between external entities and the system.

- **Inputs to the System:**
    - **Text or Data Input:**
        - User registration details (e.g., name, email, phone number).
        - Menu data (e.g., restaurant names, menu items, and prices).
        - Order requests (e.g., selected menu items, delivery address).
        - Payment information (e.g., credit card details, transaction ID).
- **Outputs from the System:**
    - **Notifications:** Order confirmations and updates sent to customers and restaurants.

DFD 2: Detailed Processes (User and Admin Operations)

At this level, the focus shifts to the specific processes performed by both users and administrators.

- **User Operations:**
    - **Registration and Login:** Users register or log in to access the platform.
    - **Menu Browsing and Order Placement:** Customers browse restaurant menus and place orders.
    - **Payment Processing:** Customers complete transactions via integrated payment gateways.
    - **Delivery Tracking:** Customers track their orders in real-time through the platform.
- **Admin Operations:**
    - **Menu Management:** Restaurants upload, update, or remove menu items.
    - **Order Processing:** Restaurants confirm and prepare orders.
    - **Analytics and Reporting:** Administrators generate and view reports on order performance, customer trends, and system activity.
    - **System Monitoring:** Admins ensure smooth system operation, addressing any issues that arise.

Chapter 5: Project Plan

This chapter details the project timeline, including phases such as planning, development, testing, and deployment. It also specifies the roles and responsibilities of team members, milestones, and deliverables.

5.1 Project Estimate

5.1.1 Reconciled Estimate

The reconciled estimate consolidates time, cost, and resource requirements for each phase of the project.

- **Planning Phase:**
  - Duration: 2 weeks
  - Activities: Requirement gathering, feasibility study, and scope definition.
  - Estimated Effort: 30 person-hours
- **Development Phase:**
  - Duration: 6 weeks
  - Activities: Salesforce environment setup, custom object creation, workflow automation, and integration development.
  - Estimated Effort: 120 person-hours
- **Testing Phase:**
  - Duration: 2 weeks
  - Activities: Unit testing, UAT, and performance testing.
  - Estimated Effort: 40 person-hours
- **Deployment and Support Phase:**
  - Duration: 1 week
  - Activities: Deployment to production, user training, and post-deployment support.
  - Estimated Effort: 20 person-hours

Total Estimated Effort: 210 person-hours

5.1.2 Project Resources

The project relies on a multidisciplinary team and various tools to achieve its objectives.

Human Resources:

- **Project Manager:** Oversees the project plan, milestones, and deliverables.
- **Salesforce Developer:** Responsible for custom object development, automation, and integration.
- **UI/UX Designer:** Designs user interfaces for customer and restaurant portals.
- **Quality Assurance (QA) Analyst:** Ensures the system meets functional and performance standards.

Technical Resources:

- **Salesforce Platform:** Core environment for development and deployment.
- **Third-Party APIs:** For payment gateways and delivery tracking.
- **Testing Tools:** Developer Console and Sandbox environments for UAT and debugging.

Infrastructure Resources:

- High-speed internet connectivity.
- Modern workstations with browser compatibility for Salesforce Lightning Experience.

5.2 Risk Management

Effective risk management is crucial to ensuring the project's success. This section outlines the identification, analysis, and mitigation of risks associated with the development and deployment of the online food delivery platform.

5.2.1 Risk Identification

Potential Risks:

1. **Technical Risks:**
    - Challenges in integrating third-party APIs (e.g., payment gateways, delivery services).
    - Potential performance issues under high user load.
2. **Operational Risks:**
    - Delays in gathering requirements from stakeholders.
    - Misalignment between development deliverables and user expectations.
3. **Security Risks:**
    - Unauthorized access to sensitive customer or payment data.
    - Potential vulnerabilities in third-party integrations.
4. **Resource Risks:**
    - Unavailability of key personnel or delays due to lack of skilled resources.

5.2.2 Risk Analysis

Likelihood and Impact Assessment:

Risk Category	Likelihood	Impact Level	Mitigation Priority
Integration Issues	Medium	High	High
Performance Risks	Low	High	Medium
Data Breach	High	High	High
Resource Shortage	Medium	Medium	Medium

Critical Risks:

- Integration issues and data breaches are identified as critical risks due to their high likelihood and significant impact on the platform's performance and security.

5.2.3 Overview of Risk Mitigation, Monitoring, and Management

Mitigation Strategies:

1. **Technical Risks:**
    - Use robust error-handling and monitoring mechanisms for API integrations.
    - Conduct performance testing and load testing before deployment.
2. **Operational Risks:**
    - Maintain a detailed project schedule and ensure regular stakeholder communication.
    - Use Agile methodologies to adapt to evolving requirements.
3. **Security Risks:**
    - Implement encryption for sensitive data and enforce field-level security.
    - Conduct regular security audits to identify and patch vulnerabilities.
4. **Resource Risks:**
    - Cross-train team members to ensure resource flexibility.
    - Maintain a backup plan for critical roles.

Monitoring:

- Weekly risk reviews during sprint planning.
- Use Salesforce dashboards to monitor project performance and identify anomalies.

5.3 Project Schedule

The project schedule defines the timeline and milestones for each phase of development, ensuring timely delivery of objectives.

Phase	Start Date	End Date	Duration	Key Deliverables
Planning	Day 1	Day 14	2 Weeks	Scope document, detailed requirements
Development	Day 15	Day 56	6 Weeks	Custom objects, workflows, APIs
Testing	Day 57	Day 70	2 Weeks	Test cases, bug fixes, UAT report
Deployment and Support	Day 71	Day 77	1 Week	Production system, user training

Milestones:

1. Completion of data model design by Day 10.
2. Development of order processing workflows by Day 30.
3. Integration with payment gateway by Day 45.
4. Successful completion of UAT by Day 70.

Chapter 6: Project Implementation

This chapter describes the implementation process, including the setup of the Salesforce environment, development of custom objects, workflows, and integrations with external systems. It also highlights challenges faced and solutions applied during implementation.

6.1 Implementation Steps

This chapter outlines the steps taken to implement the online food delivery platform using Salesforce. The implementation was divided into structured phases to ensure efficiency and quality in the final product.

Step 1: Setting Up the Salesforce Environment

- **Sandbox Configuration:** Created a development sandbox for testing and configuration without impacting the production environment.
- **Custom Object Creation:** Designed key objects such as Customer, Order, Restaurant, and MenuItem, establishing relationships to support data management and workflows.

Step 2: Data Model Design

- **Object Relationships:** Defined relationships, including one-to-many (Restaurant → MenuItem) and many-to-many (Order → MenuItem using a junction object, OrderItem).
- **Field Configuration:** Added necessary fields for each object, such as contact details for Customer, menu descriptions for MenuItem, and timestamps for Order.

Step 3: Workflow Automation

- **Process Builder and Flow:** Automated order status updates, email notifications, and delivery tracking.

Triggers: Developed Apex triggers for specific scenarios, such as sending welcome emails to new users and notifying customers of phone number changes

Step 4: Integration

- **Payment Gateway Integration:** Implemented APIs for secure payment processing via platforms like PayPal and Stripe.
- **Delivery Tracking:** Integrated third-party delivery services for real-time tracking updates visible to customers and restaurants.

Step 5: User Interface Development

- **Customer Portal:** Built a user-friendly interface for customers using Salesforce Lightning components, allowing seamless order placement and tracking.
- **Restaurant Portal:** Developed an interface for restaurants to manage orders, menus, and delivery statuses.

Step 6: Security Measures

- **Role-Based Access Control:** Configured profiles and permission sets to restrict access based on user roles (e.g., customer, restaurant owner, delivery staff).
- **Data Encryption:** Secured sensitive information, such as payment details, using Salesforce Shield Platform Encryption.

Step 7: Testing and Validation

- **Unit Testing:** Verified the functionality of custom objects, workflows, and triggers with test classes in Apex.
- **User Acceptance Testing (UAT):** Gathered feedback from stakeholders to refine the platform and address usability concerns.
- **Performance Testing:** Ensured that the platform could handle high traffic during peak hours.

Step 8: Deployment

- **Change Sets:** Migrated configurations and customizations from the sandbox environment to production.
- **Post-Deployment Testing:** Conducted final tests in the live environment to ensure smooth functionality.

Chapter 7: Software Testing

The testing phase includes unit testing, integration testing, user acceptance testing (UAT), and performance testing. This chapter describes the test scenarios, cases, and results to ensure the platform meets the specified requirements.

7.2 Types of Testing

7.2.1 Unit Testing

- Focused on verifying individual components, such as custom objects, Apex triggers, and workflows.
- Ensured that each component functions as expected in isolation.

7.2.2 Regression Testing

- Validated that changes made during development did not negatively impact existing features.
- Re-tested workflows, user interfaces, and integrations after updates to the system.

7.2.3 Smoke Testing

- Conducted to confirm the stability of the basic functionalities of the platform.
- Tested key features like user registration, order placement, and delivery tracking to identify critical issues early.

7.2.4 System Testing

- Performed end-to-end testing to ensure that the entire system operates cohesively.
- Covered workflows, data flows, and integrations between components such as payment gateways and third-party delivery systems.

7.3 Test Cases

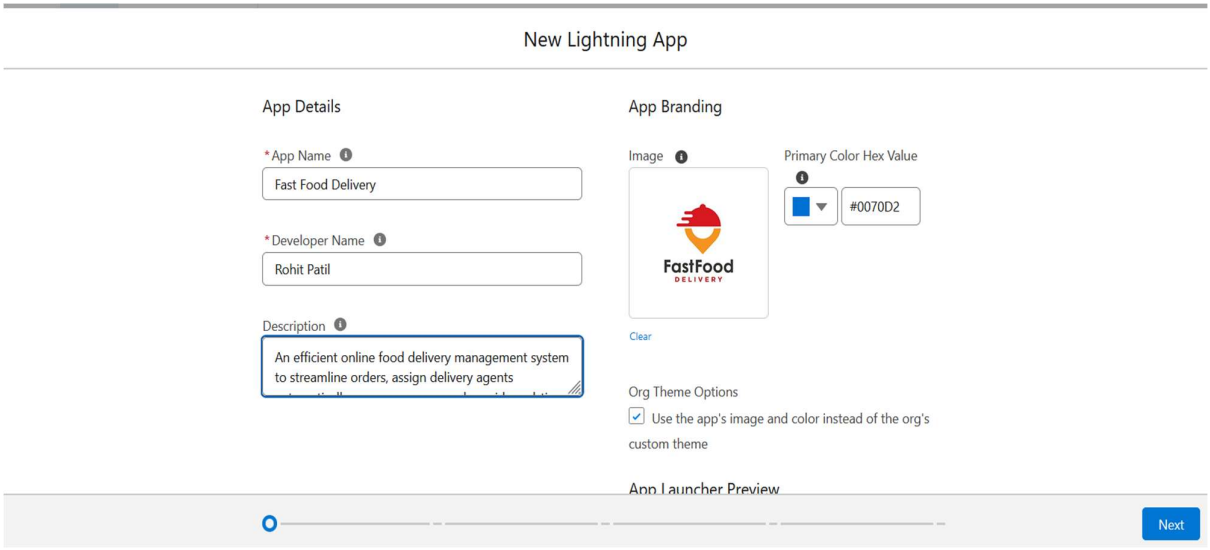
Comprehensive test cases were designed to validate both functional and non-functional aspects of the platform.

Example Test Cases:

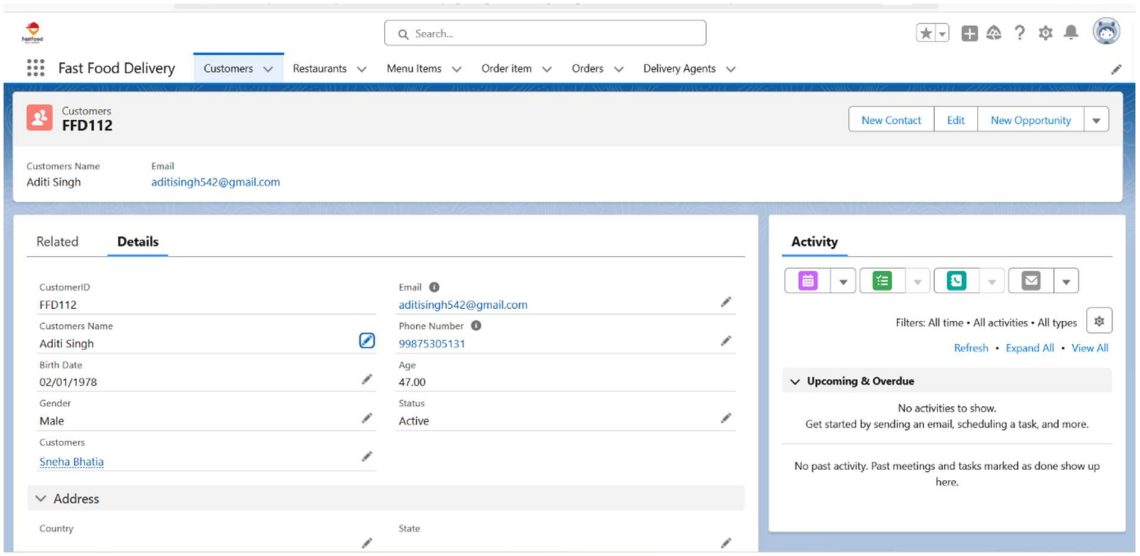
Test ID	Test Description	Input	Expected Outcome	Status
TC001	Verify user registration	Enter user details	User account is created successfully	Pass
TC002	Test order placement	Select menu items	Order is placed, and order ID is generated	Pass
TC003	Validate payment gateway integration	Process payment details	Payment is successfully processed	Pass
TC004	Check delivery tracking updates	Update delivery status	Customer receives real-time tracking updates	Pass
TC005	Role-based access control	Log in as different roles	Access permissions are applied correctly	Pass

Chapter 8: Result

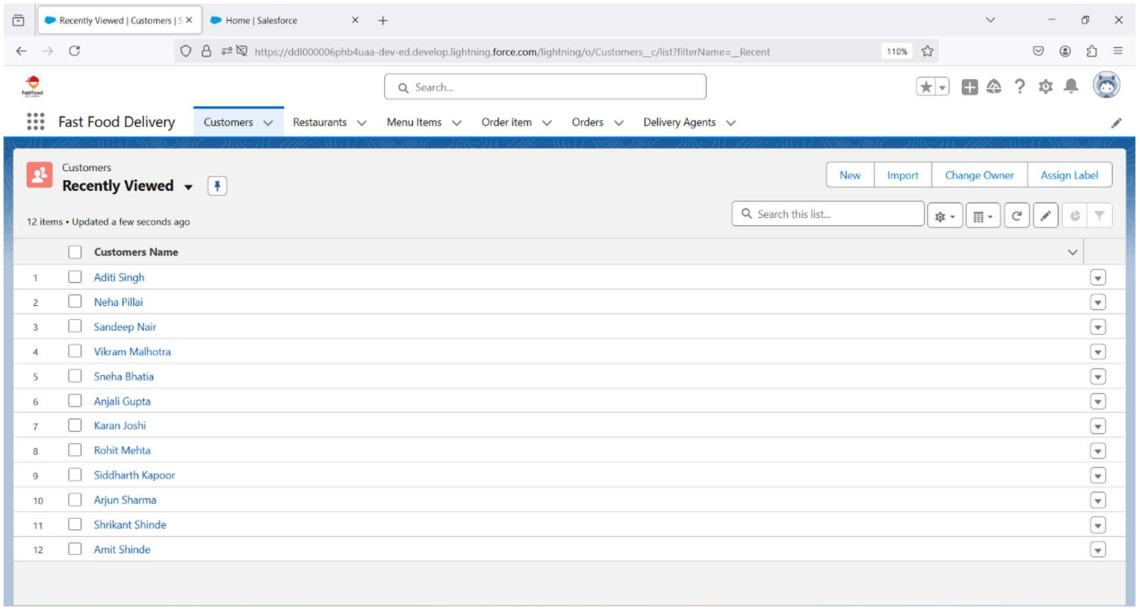
This chapter presents the outcomes of the project, including a functional food delivery platform. It evaluates the system's performance and usability, highlighting key achievements and areas of success.



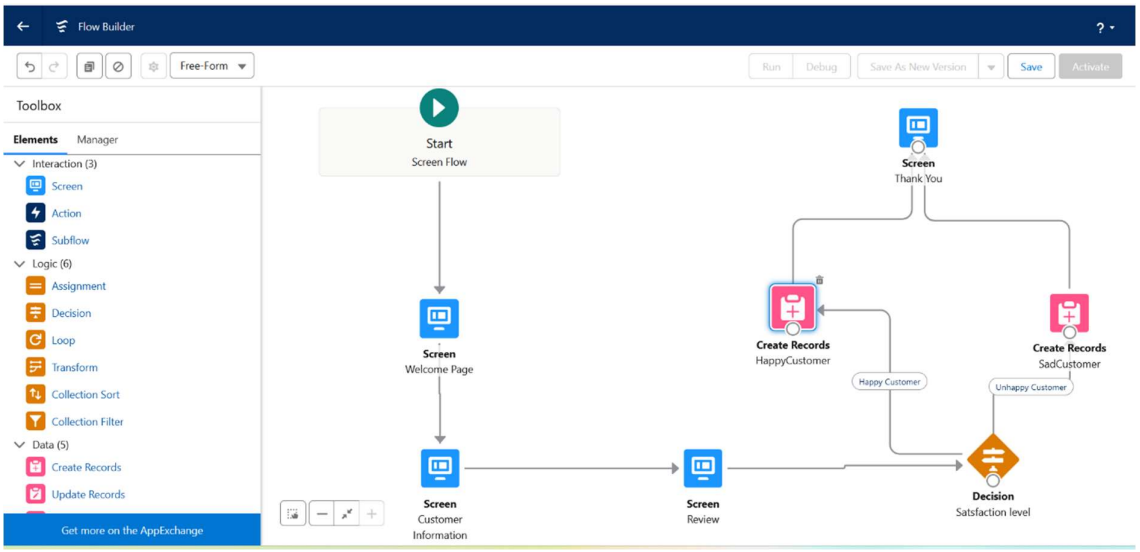
Designing the Application Name and Creating its Logo



Customer Details and Profile Page



Custom Objects Designed for the Application



Flowchart for a Feedback System

Chapter 9: Conclusion

This chapter summarizes the project's accomplishments and discusses its contributions to addressing the challenges of online food delivery. It also provides recommendations for future work and potential enhancements.

Chapter 10: References

A comprehensive list of references used in the project, including books, research papers, online articles, and Salesforce documentation.

1. **Salesforce Documentation**
    - Comprehensive resources for understanding Salesforce tools and features.
    - https://developer.salesforce.com/docs
2. **Trailhead by Salesforce**
    - Salesforce's official learning platform with modules on Apex, Lightning, and more.
    - https://trailhead.salesforce.com/
3. **Salesforce Stack Exchange**
    - A community-driven platform for Salesforce developers and admins to ask questions and share knowledge.
    - https://salesforce.stackexchange.com/
4. **Salesforce API Basics**
    - Guide to understanding and using Salesforce APIs for integrations.
    - https://developer.salesforce.com/docs/atlas.en-us.api.meta/api/
5. **Lightning Web Components (LWC) Developer Guide**
    - Official documentation for building Lightning Web Components.
    - https://developer.salesforce.com/docs/component-library/documentation/en/lwc
6. **Process Automation Tools**
    - Overview of Salesforce automation tools like Process Builder and Flow.
    - https://help.salesforce.com/s/articleView?id=sf.process_overview.htm&type=5

Appendix A: Internship Certificate

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