

DIGITIZING THE RESTAURANT INDUSTRY

Created by Modern Restaurant Solutions

ISM4113: Management Information Systems Analysis and Design

BP - 4 | Team 2



MODERN RESTAURANT SOLUTIONS

TEAM MEMBERS:

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- John Schoonfield
- Matthew Robinson
- Quinn Shaeffer
- Nik Sutor
- Andrew Lann

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SECTION 1.0: TEAM BACKGROUND

ABOUT US

Modern Restaurant Solutions is a leading technology consulting firm that provides extensive expertise, objective insights, and a tailored approach both to the public sector as well as our clients. We provide clients with advisory services in finance, technology, internal audit, data analytics through our network of over 100 offices across 30 countries. Helping them solve complex business challenges with technology to achieve sustainable results. As a firm we are proud of the success we have achieved working alongside our clients to analyze, design, and maintain system operations while implementing features that increase work efficiency.

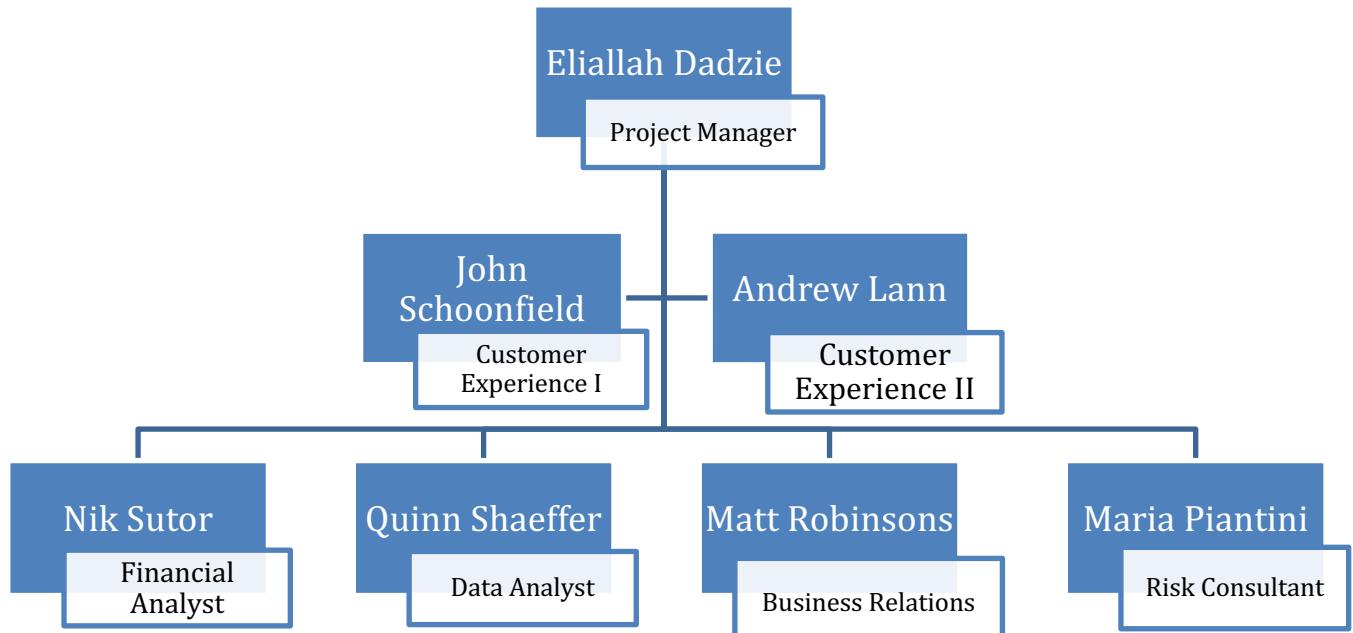


Figure 1.0: Team Background breakdown

MDR SUBJECT MATTER SPECIALISTS



Eliallah Dadzie

Project Manager

Eliallah is a Management Information Systems major with a minor in Information Technology at Florida State University. She played the role of editing, branding, and formatting the document. With 2 years of Project Management expertise, she utilized her leadership and communication skills to organize team meetings and monitor team member's progress through a clear and concise action list.

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John Schoonfield

Customer Experience Analyst

John Schoonfield is a third year Management information systems major at Florida State University. He will use his extensive history in customer experience design to ensure high quality experiences for all users.

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Andrew Lann

Customer Experience Analyst II

Andrew is double majoring in Accounting and Management Information Systems at Florida State University. His role is customer experience and is a specialist in providing potential and existing customers with exceptional services. Prior experience in the restaurant industry has helped Andrew provide value to the team and help maintain a good customer relationship base.

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Nikolas Sutor

Financial Analyst

Nik Sutor is a junior at Florida State University majoring in Management Information Systems. He also plans to minor in Computer Science. He will use his background in Finance and Data Analytics to ensure all the finances are in check.

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Quinn Shaeffer

Data Analyst

Quinn is a Professional Sales and Management Information Systems major at Florida State University. He played the role of designing client and end user data requirements in systems development. With two years of experience in system design, he utilized his critical thinking and analytical skills to create and structure requirements and successfully transform them into meaningful abstractions.

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Matthew Robinsons

Business Relations Manager

Matt is a senior at Florida State University, double majoring in Finance and Management Information Systems. Matt has played the role of looking at the problem and application from a client's perspective and focusing on how to best serve them. He has used the tools and knowledge he's acquired from his education to help build an efficient database system.

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SECTION 2.0: APPROACH AND METHODOLOGY

We have chosen to use the Systems Development Life Cycle (SDLC) as our main project management tool to plan, design, and evaluate our digitizing the restaurant industry information system. The SDLC is a very commonly used systematic approach when developing information systems. We used this high-quality conceptual model to allow our team to successfully create an efficient system that meets customer needs, is created within time constraints, as well as contains a well-structured database infrastructure that allows consumers and local restaurants to connect online. The SDLC breaks down the project into five phases: planning, analysis, design, implementation, and maintenance. Below, we have demonstrated how we applied the SDLC throughout the creation of our information system by providing a description of how we followed each step.

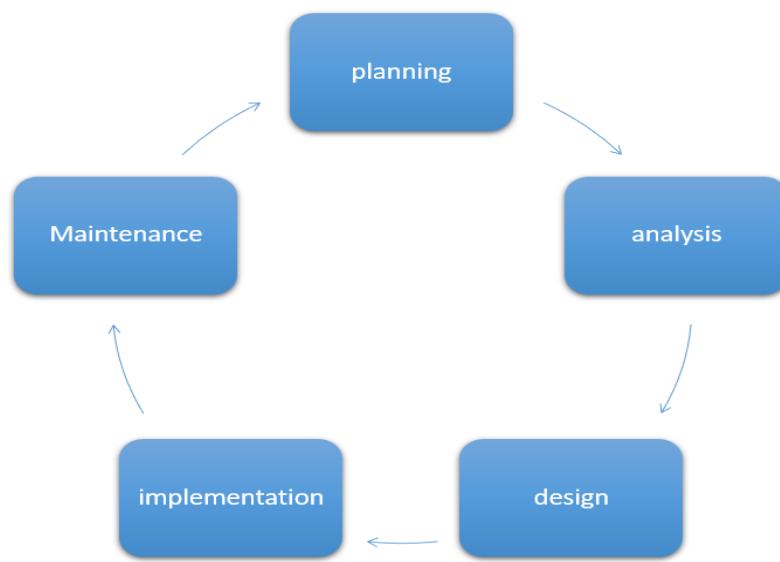


Figure 1.1: Approach & Methodology

⇒ **Planning:** During this stage, the team came together to define the business problem and scope of the project while creating expectations. We developed an outline for the project relating to how the business problem will be tackled. Lastly, we set the project schedule as well as the work breakdown structure which was an essential aspect of the process.

- ⇒ **Analysis:** This stage included gathering data. As a team we gathered process and data requirements necessary for this project. This included all the specifications of hardware, software, and network requirements for the app.
- ⇒ **Design:** The design stage included details for the application. We built a User Interface Design demonstrating the overall blueprint of our application. A database design was also created utilizing the requirements analysis to improve data consistency. In our case we incorporated Use Case diagrams and Entity Relation Diagrams.
- ⇒ **Implementation:** After the system is developed, it's implemented into the organization. During this phase, proper documentation as well as a user manual is important, usually training is required for the system users. This explains how to utilize the new system properly.
- ⇒ **Maintenance:** This is the final stage once the Implementation stage is complete. During this phase, it's crucial for the system to have a structured process. Any errors are fixed while the requests for new features are not only evaluated but implemented. This is when system updates and backups are made.

DIGITIZING THE RESTAURANT INDUSTRY (NARRATIVE)

MISSION STATEMENT

Transform small businesses into digital platforms that allow them to keep serving their customers.

BUSINESS PROBLEM

Over the last few decades in America, business and technology have become increasingly intertwined. The COVID-19 pandemic in 2020 has only worked to accelerate this fusion. According to QSR magazine, 57% of people view restaurant menus online. 45% use the internet to find locations, directions, and hours of operation of restaurants, and 44% use the internet to place orders for

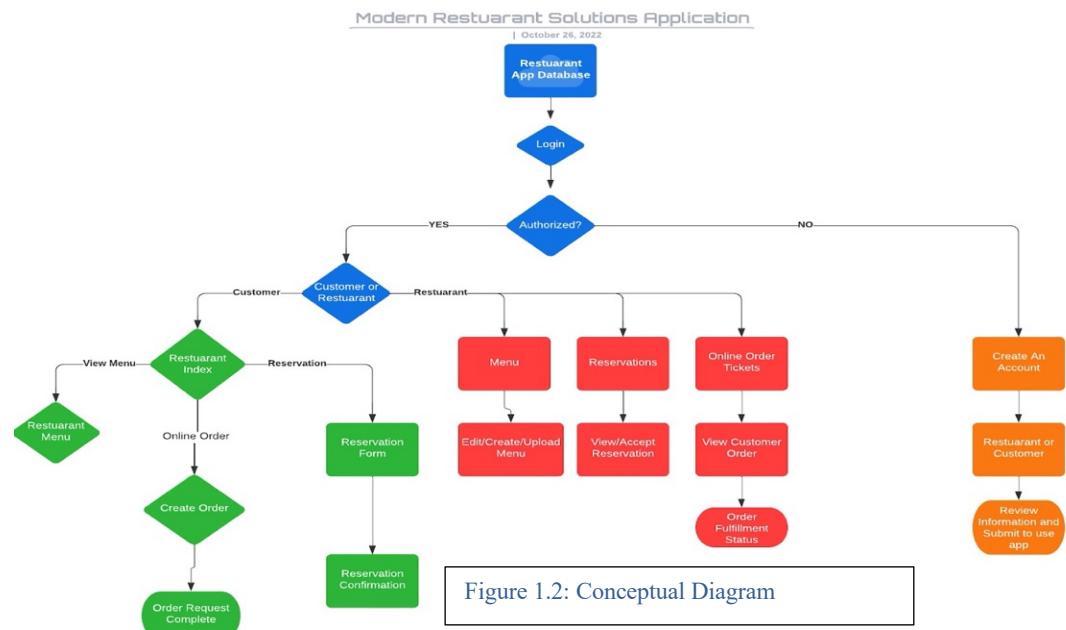


Figure 1.2: Conceptual Diagram

takeout/delivery. This isn't a problem for massive franchises like McDonald's or Starbucks. They can make their own app/website and take advantage of this digital market with relative ease. Smaller local restaurants however are almost entirely cut off from this growing market of remote customers. This is not only a problem for restaurants. People don't want to eat at commercially successful chain restaurants exclusively, but they are being forced to choose between appetite and convenience.

SOLUTION

Small businesses need a way to develop an online presence without being forced to invest millions of dollars into their own tech solution. The idea is to create a centralized app where local restaurants can join and easily upload menus, take reservations, take orders, and so on without having to break the bank. This app would be free to use and easy to navigate. Customers would be able to find all their favorite restaurants and discover new flavors.

VALUE

The initial value of this proposal is that smaller businesses can tap into the online markets, but there is more to it than that. All businesses that go through our app can access their customers' sales data. This means small businesses could see which items are performing and underperforming. This could help businesses optimize their menu and tailor promotions and specials. Additionally, this platform could incorporate built-in surveys that ask customers how they feel about the item pricing, menu selection, and so on. This means that restaurants would be able to reach a new customer base and use the data that they get from these users to further improve their business.

SECTION 3.0: PROJECT SCHEDULE WITH WORK BREAKDOWN STRUCTURE

TEAM ORGANIZATIONAL CHART

| Member Name | Role | Task |
|-------------------------|--------------------------------|--|
| Eliallah Dadzie | Project Manager | <ul style="list-style-type: none"> ○ Host Meetings ○ Approach and Methodology ○ “About Us” ○ Project Schedule with Work Breakdown Structure ○ Sample Draft Requirements ○ Mock Prototype PowerPoint ○ Entity Relationship diagram |
| John Schoonfield | Customer Experience Analyst | <ul style="list-style-type: none"> ○ Narrative (Problem, Solution & Value) ○ User Interface Design ○ Sample Draft Requirements |
| Matthew Robinson | Business Relations Manager | <ul style="list-style-type: none"> ○ Conceptual Diagram ○ Sample Draft Requirements |
| Nik Sutor | Financial Analyst | <ul style="list-style-type: none"> ○ Use Case Diagram |
| Andrew Lann | Customer Experience Analyst II | <ul style="list-style-type: none"> ○ Conceptual Diagram ○ Team Background SmartArt ○ Mock Prototype PowerPoint ○ Executive Readout ○ User Interface Design |
| Quinn Shaeffer | Data Analyst | <ul style="list-style-type: none"> ○ Use Case Diagram ○ Executive Readout ○ Entity Relationship Diagram |

ACTION ITEMS CHART

| Date | Description |
|----------------|---|
| Week 7 | <ul style="list-style-type: none"> ○ Assigned roles to each team member and discussed what the roles consist of. ○ Worked on team building 4 activity and created a template for the 4 different sections in PA1. ○ Discussed which approach and methodology we planned to use |
| Week 8 | <ul style="list-style-type: none"> ○ Coordinated with team on what needs to be done and worked on section 3. ○ Briefly worked on section 4 by identifying the basics of what we want our draft to look like. ○ Finalized week 8 team building activity by editing and adding new relevant information. |
| Week 9 | <ul style="list-style-type: none"> ○ Worked on the narrative for the business problem, identifying not only the problem but the solution and its value. ○ Created a conceptual diagram to further explain the narrative. ○ Created a use case diagram. ○ Worked on the draft version of the proposal response template. ○ Finalized PA1: Scope Business Problem. |
| Week 10 | <ul style="list-style-type: none"> ○ Start working on PA2 requirements document. ○ Create and provide answers to a list of structured questions to consider extracting process requirements. ○ Update narrative, use case diagram and high-level conceptual diagram as necessary. |
| Week 11 | <ul style="list-style-type: none"> ○ Create a list of 20 process requirements. ○ Create a list of parent entities with child entity notations. ○ Finalize PA2: Requirements document and turn it in. |
| Week 12 | <ul style="list-style-type: none"> ○ Start working on PA3 Design document. ○ Update narrative, use case diagram and high-level conceptual diagram as necessary. |

| | |
|----------------|--|
| | <ul style="list-style-type: none"> ○ Update list of structured questions, process requirements and parent entities with child entity notations. ○ Create process representation utilizing use case model. ○ Create a first cut ERM supporting process |
| Week 13 | <ul style="list-style-type: none"> ○ Start working on PA4: Executive Readout ○ Create mock prototype. ○ Create PowerPoint presentation |
| Week 14 | <ul style="list-style-type: none"> ○ Create PowerPoint voiceover. ○ Finalize Executive Readout |
| Week 15 | <ul style="list-style-type: none"> ○ Work on Peer Evaluation Submission |

SECTION 4.0: SAMPLE DRAFT REQUIREMENTS

PROCESS REQUIREMENTS:

- ⇒ The system will allow the user to register and create an account.
- ⇒ The system will allow the user to join the referral program.
- ⇒ The system will allow users to order food.
- ⇒ The system will allow users to make reservations.
- ⇒ The system will update availability in real-time to prevent overbooking.
- ⇒ The system will allow users to input personal preferences.
- ⇒ The system will allow the user to pay and save a payment method on file.
- ⇒ The system will process payments.
- ⇒ The system will allow different permissions for authorized users.
- ⇒ The system will allow authorized restaurant users to change menus and or prices.
- ⇒ The system will allow customer users to view and download restaurant menus.

DATA REQUIREMENTS:

- ⇒ The system will collect orders and store them for sales data.
- ⇒ The system will collect and save payment information, allowing for an easier checkout for their next order.
- ⇒ The system will allow customers to filter for restaurants within their area (5-mile radius, 10 miles, etc.)
- ⇒ The system will store data collected from user reviews.

- ⇒ The system will keep track of which items are under/overperforming.
- ⇒ The system will allow customers to filter for restaurants by price (\$\$, \$\$\$, \$\$\$\$)
- ⇒ The system will allow customers to filter for restaurants with certain ratings (3 stars and above, 4 stars and above, etc.)
- ⇒ The system will allow users to leave reviews of establishments.
- ⇒ The system will allow users to save favorites and reorder options.

QUESTIONS FOR STRUCTURED REQUIREMENTS:

- ⇒ How can we stand out from other competitors to draw in their customers and bring in new customers?
- ⇒ How can we give the customers the most optimal experience in the app from start to finish while ordering food?
- ⇒ How can we help restaurant owners attract customers with the influence of customer data?
- ⇒ Which features are more important than others when ordering from an online platform for restaurants?
- ⇒ Is the process for ordering simple enough to enhance a customer's experience?
- ⇒ Will I as an owner be able to customize my restaurant profile on the app?

ANSWERS:

- ⇒ With the use of loyalty programs, discount coupons, referral bonuses, and email marketing we can help owners attract more customers.
- ⇒ Ensuring that our software is bug free and glitch free to make sure that the process from start to finish goes smooth for customers.
- ⇒ The easier and quicker the set-up process is, the more beneficial this will be to business owners and customers.

- ⇒ Enabling all types of payment methods that are up to date as possible is critical to ensuring sales and online shoppers expect a certain pedigree when checking out.
- ⇒ This includes credit and debit cards, apple pay, cryptocurrency exchanges, Cashapp, and any other form of payment methods.
- ⇒ Customization is a key component of our application and a driving force for our mission. We want owners to each have their own brand identity.
- ⇒ A key point is allowing flexible customization with no pre-developed templates.

SECTION 5.0: SAMPLE DATABASE DESIGN

USE CASE DIAGRAM

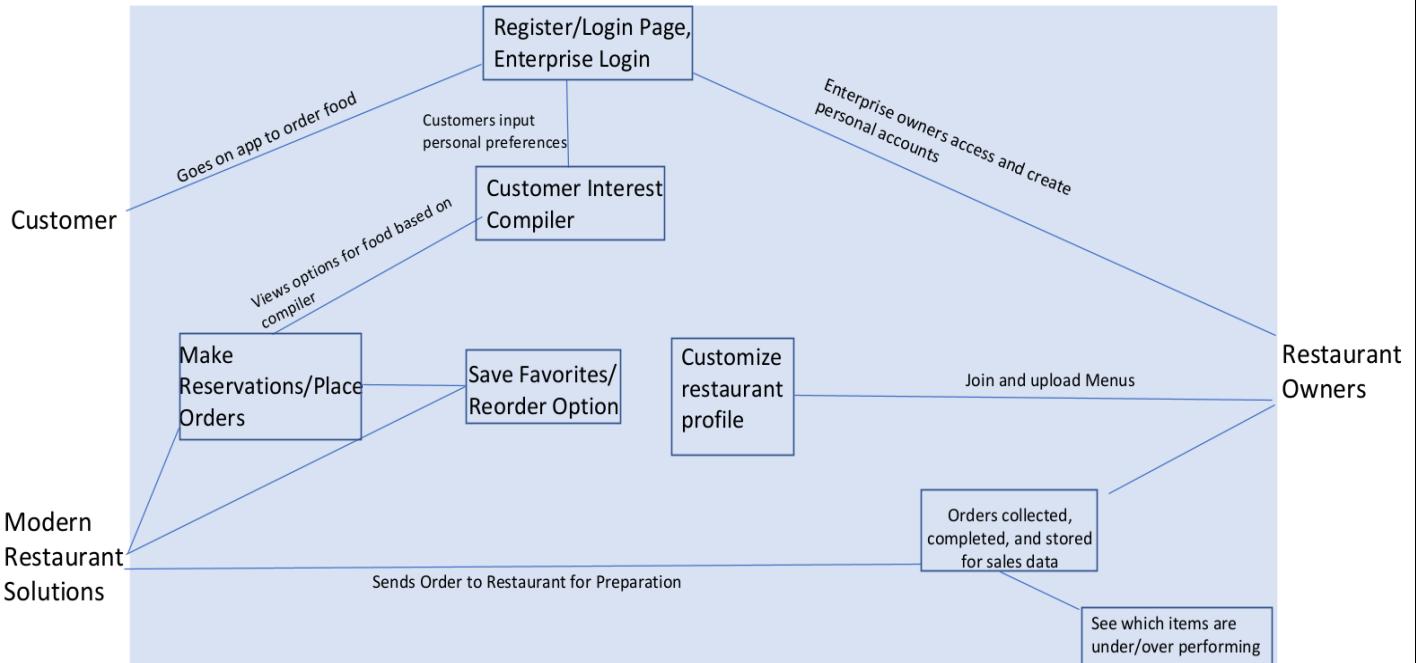
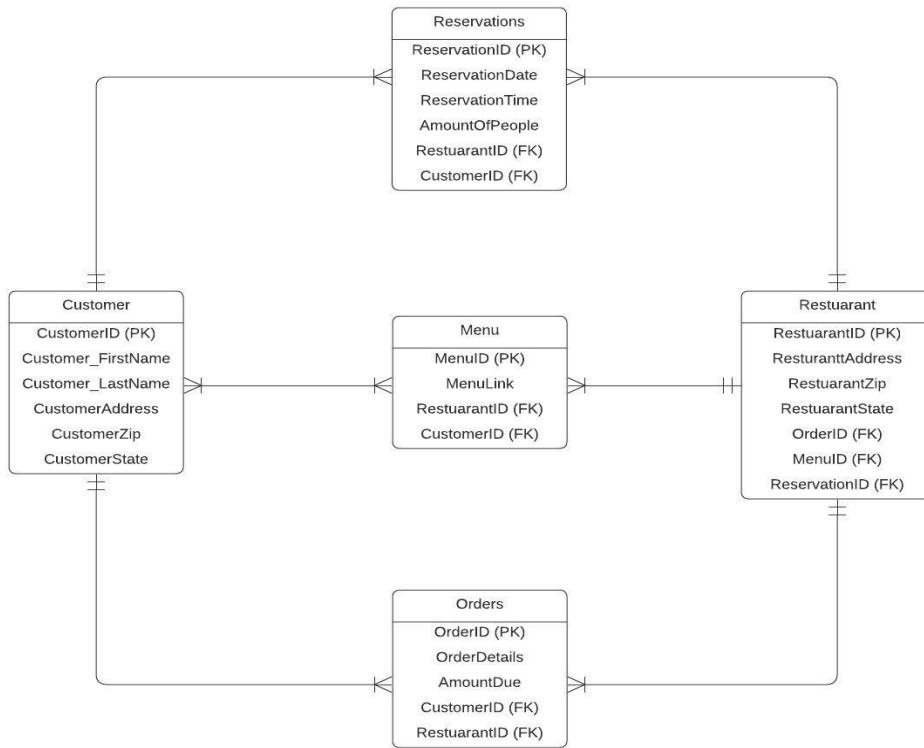


Figure 1.3: Use Case Diagram

The use case diagram above gives a visual representation of the process that occurs between a customer, Modern Restaurant Solutions, and restaurant owners. Customers and owners create their individual pages based off personal preference. From there we have a customer interest compiler that will gain data from customers based off surveys to accommodate them to what suits them. Customers will then have a wide variety of options to choose from and depending on their needs MRS will be able to send their order confirmations or reservations to owners. Owners will have the availability to customize their menus and profiles uniquely to them. Orders will collect data to help the success of future sales.

ENTITY RELATIONSHIP DIAGRAM

Modern Restaurant Solutions



Our Entity Relationship Diagram illustrates how our application is going to connect online consumers to local restaurants, allowing small businesses to compete in a time where online ordering is so prevalent. Our model consists of the three main components of our app (Online Orders, Menus, and Reservations) and shows the relationship data will flow through to connect our clients; online consumers and local restaurants. Customers that create an account through the Taste Market app will be required to record basic information about themselves such as name and address, and then be given a unique CustomerID. Restaurants will also need to create their own account where we will also record their name and address, give them an option to upload their menus, and provide them with a distinct RestuarantID. Taste Market's database will be able to connect customers and restaurants through their unique primary keys; CustomerID and RestuarantID. We have created tables within our database that will house reservations, menus, and orders, along with a unique ID attached to each acting as a primary key. CustomerID and RestuarantID will also be included as a foreign key within these tables, satisfying the joins to connect restaurants and customers to reservations, menus, and orders.

PARENT ENTITIES WITH CHILD NOTATIONS:

Customer Entity (Parent)

⇒ CustomerID (Primary Key), Customer_FirstName, Customer_LastName, CustomerAddress, CustomerZip, CustomerState

Reservation Entity (Child)

⇒ ReservationID (Primary Key), ReservationDate, ReservationTime, AmountOfPeople, RestaurantID (Foreign Key), CustomerID (Foreign Key)

Menu Entity (Child)

⇒ MenuID (Primary Key), MenuURL, RestaurantID (ForeignKey), CustomerID (ForeignKey)

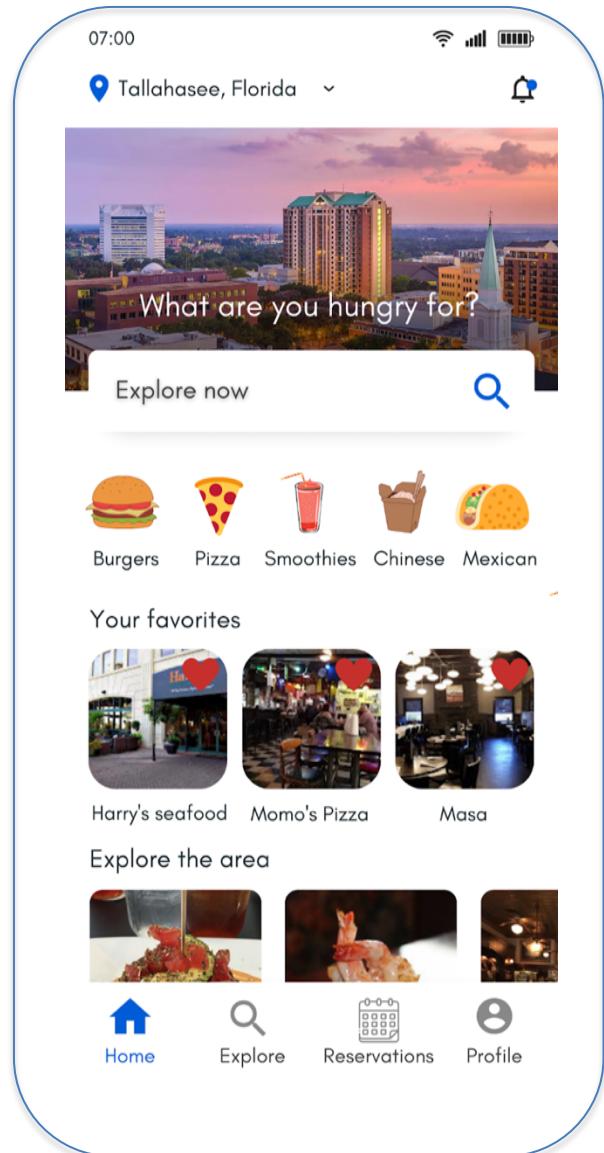
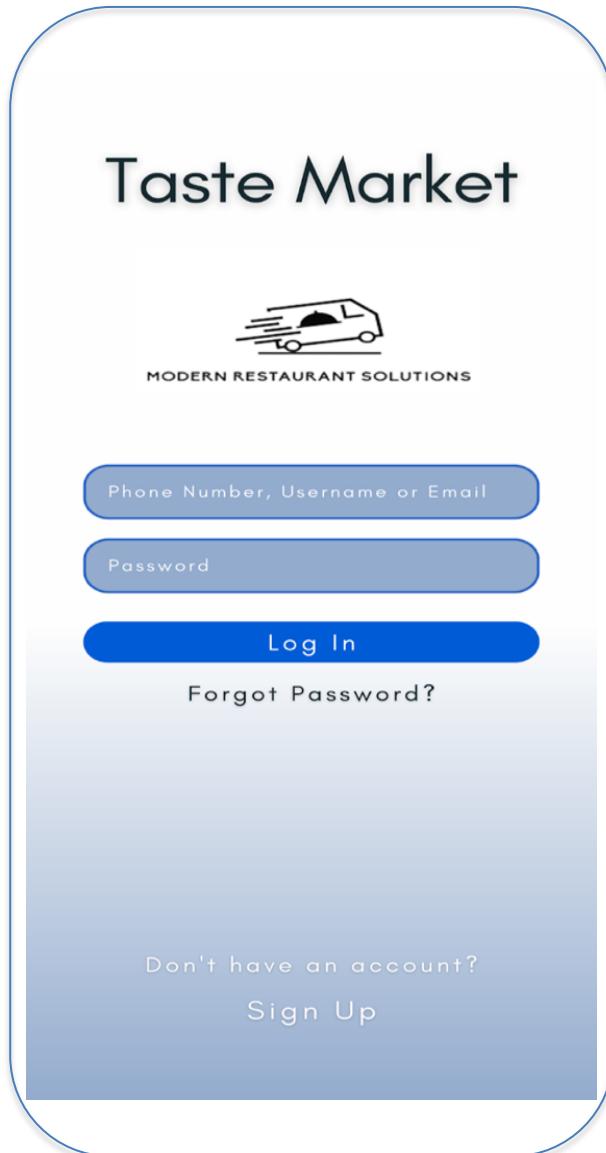
Orders Entity (Child)

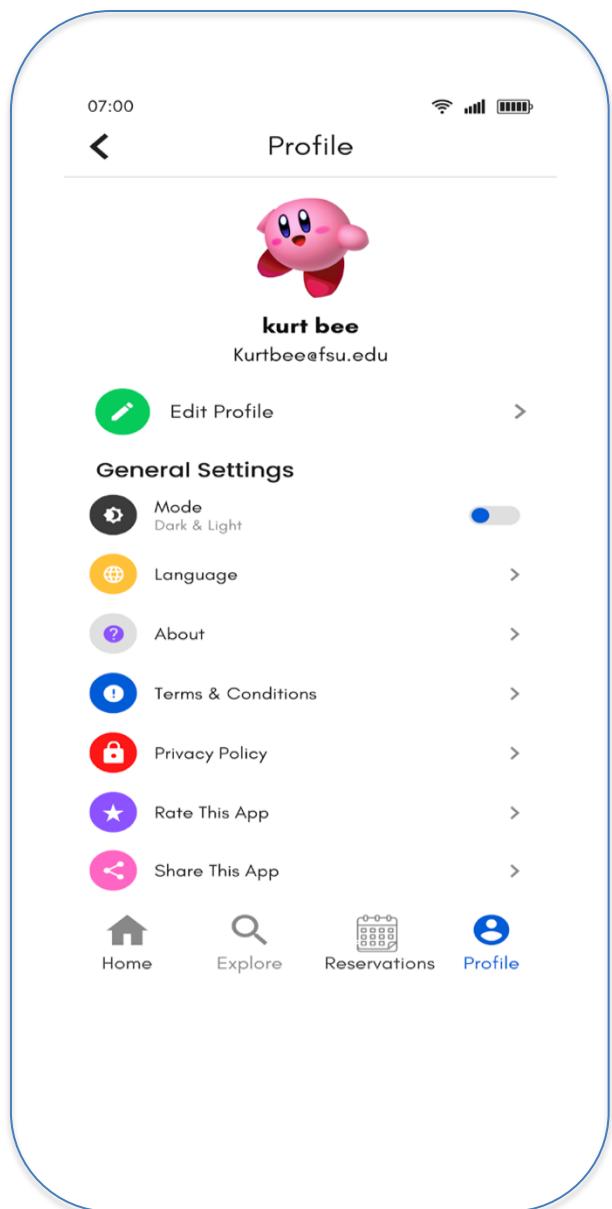
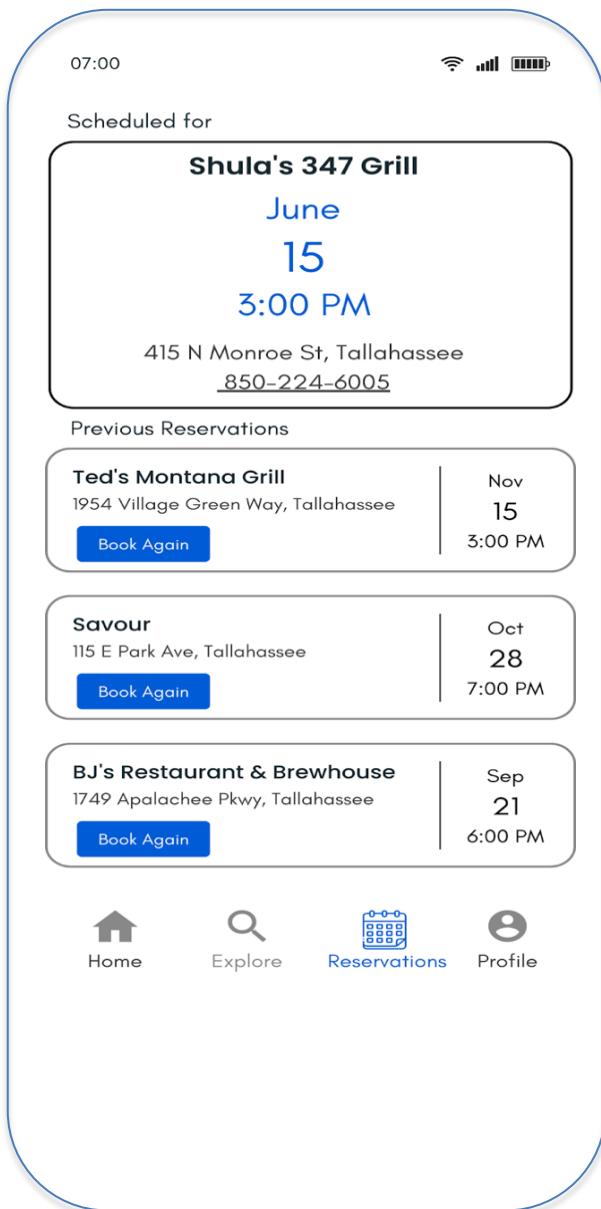
⇒ OrderID (Primary Key), OrderDetails, AmountDue, CustomerID (Foreign Key), RestaurantID (Foreign Key)

Restaurant Entity (Parent)

⇒ RestaurantID (Primary Key), RestaurantName, RestaurantAddress, RestaurantZip, RestaurantState

SECTION 6.0: SAMPLE USER INTERFACE DESIGN





SECTION 7.0: MOCK PROTOTYPE DEMONSTRATION

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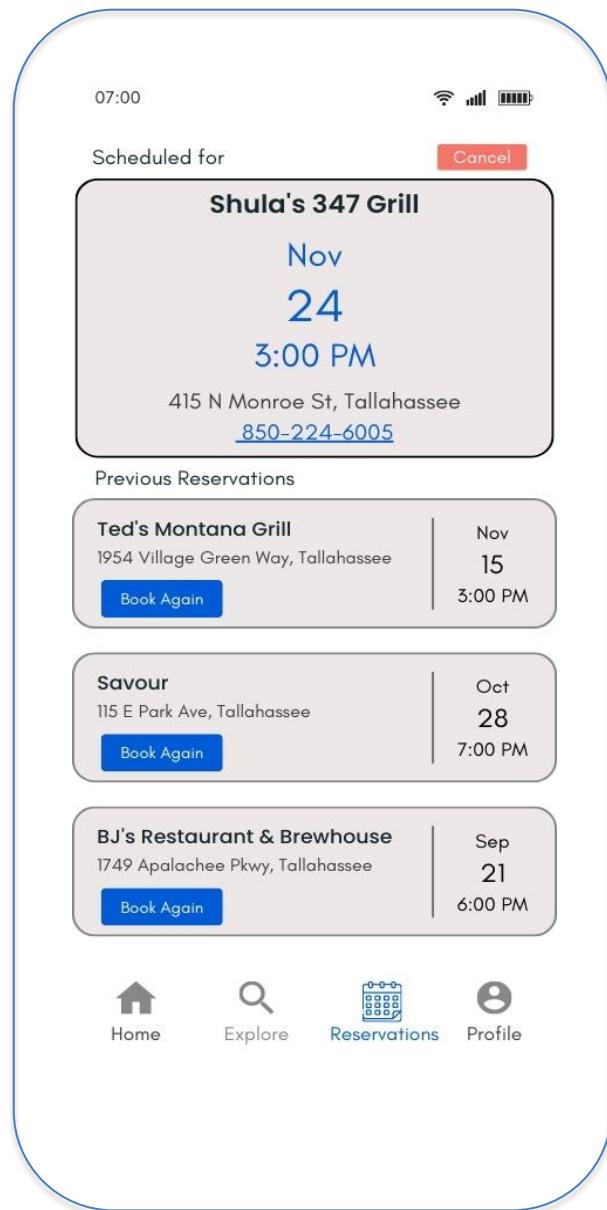
The image displays two screenshots of a mobile application interface.

Screenshot 1: Search Results

At the top, there is a search bar with the placeholder "Breakfast restaurants" and a magnifying glass icon. Below the search bar are dropdown menus for "Tallahassee, FL, 32316" and "Date". A button labeled "Results (226)" is followed by a "Filters" button with a dropdown arrow. The main content area shows two restaurant photos: "Maple Street Biscuit Company" and "Woodchuck's Cafe Inc.", each with its address and a "View Detail" button. At the bottom are navigation icons for "Home", "Explore", "Reservations", and "Profile".

Screenshot 2: Make A Reservation

At the top, it says "Make A Reservation". Below is a calendar for November 2022, showing days from Sunday to Saturday. The date "24" is highlighted with a blue border. Below the calendar are time slots: "2:00 PM", "2:30 PM", "3:00 PM" (which is selected and has a blue border), and "3:30". A reservation card for "Shula's 347 Grill" on Nov 24 at 3:00 PM is shown, including the address "415 N Monroe St Tallahassee" and phone number "850-224-6005". A "Book Now" button is at the bottom right of the card.



SECTION 8.0: EXECUTIVE READOUT

<https://www.dropbox.com/s/cn0ofhhtxqdbh9j/ExecutiveReadoutVideo.mp4?dl=0>