

# **Software Requirements Specification**

for

## ***Sunland Adventure Park***

**Version 2.4**

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Group 5

Maitland Andrus  
Devin Eccles  
Dallen Sandstrom  
Kaytee Tiede

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# **Customer Statement of Requirements**

This SRS outlines the requirements for an application to be used by Sunland Adventure Park guests and employees to streamline guest transactions and to give higher or unique access to guest services. The app will be made available to guests to download for free off the app store on their phones. The expected result being an increased revenue through increasing cost efficiency, park attendance, and average guest spending.

Guests are the primary user of the app. Its goal is to enhance their experience by giving them useful information tools they can use while enjoying Sunland Adventure Park. First and foremost guests will have the ability to make an account using the app. The account information will be securely encrypted, stored both on the guests phone and in servers operated by Sunland Adventure Park. Servers will be backed up routinely to minimize the risk of data loss. Security is a priority to protect the personal information of the aps users. Data about where guests spend their time and money will be collected on the park server as well to be used to inform park management.

Once a guest has made an account they'll be able to access the app's main features. They'd be able to use it to purchase admittance to the park and to park activities. Park staff, specifically Adventure Guides, Water Park Attendants and Campground Hosts will be able to scan a QR code generated after the purchase off a guests phone screen to allow admittance to their applicable areas. Campground hosts

will also be able to see reservations made for the campground. This will also benefit the efficiency in which the work of admitting guests, streamlining the process for employees.

Guests will also have the capability of using the payments system on the app to use at the shops around the park including restaurants and food stalls. This will make those purchases easier and quicker on both the guests and the employees. Guests will also be able to use the app to make reservations at park restaurants. Dining staff will be able to see reservations, the amount of guests the reservation is for, the time guests will arrive, and if necessary cancel reservations. Useful information all tracked for them. On top of reservations they can also use the app to track orders.

The app will have an interactive map available when the device is connected to the park's local area network. On another screen, the rides screen, there will be a display of all the rides at the park and their wait times, selecting the rides will navigate you to where they're shown on the interactive map. This is also a feature when searching for stalls at restaurants on the dining options screen, and this is similarly available for shows from the shows screen. The shows screen itself will be where the shows event coordinators plan will be displayed for guests, with information like description, time and place.

Under a guest's account they'd be able to manage a group. Using wristbands given to all group members while entering the park they'll be able to be connected to the app, making a tracked group. Groups can track other members in their group on the interactive map to minimize the risk of people getting lost. Under the groups screen that is navigated to from the account screen individual group members can be selected to change their listed names and to show where they are on the interactive map as well. Guest groups will also have access to a chat function while in the park. Guests can be

added or removed by users old enough to be responsible for managing their group, mostly parents.

Guests and employees will be able to use the app to request services. Namely the help of medical staff, security staff, and guest services staff. For example they can report to security if someone spots a person jumping a fence into an unauthorized area, request medical staff for a wheelchair, or make a recommendation about the park to guest services.

Both security and medical staff can see alerts meant for each other. Medical staff can see both medical alerts and security alerts. Security staff can see both security alerts and medical alerts. This is in case there is crossover where a medical request also needs security staff and vice versa. The alerts are made from the request services screen in the app. They're labeled with the time, a description if applicable, a location, who they're intended for, and who's responding to them. Employees will have a button they press to acknowledge that they're responding to the request. Requests can be listed with numerical codes to show quickly what specific incident is happening. Specifically if the request was made by staff.

Guest services staff will get similar alerts, they will have the opportunity to message responses to the alerts. Another functionality the app will give is specifically a list of lost and found items tracked by guest services so they can better address guests that come to them with missing items. When a missing item is added to the lost and found list the date and time it was found will be automatically added.

Finally, event coordinators will be able to add, edit, or cancel event listings as needed. Administrators will have the freedom to make ongoing updates to the app.

Managers and owners will also be able to access the functionality of all employees. All employees will have their own accounts made for the app just like guests and all employees will see when they're on duty displayed on most screens.

#### *List of Requirements*

1. The app will be available for free to download.
2. Guests and employees can make, edit, and delete an account.
3. Account information will be securely stored on the app and in a company database.
4. Guests can purchase tickets and admissions from the app.
5. Guests can make purchases from stores, stalls, and restaurants from the app.
6. Guests can make reservations at restaurants from the app.
7. Guests and employees can use an interactive map on the app to navigate the park.
8. Guests will be able to use the app to see ride wait times.
9. Guests will be able to use the app to see events listings.
10. Guests can use the app to make groups that can be messaged and tracked on the park.
11. Guests and employees can request medical, security, and guest services from the app.
12. Employees will be able to access employee specific functionality from the application on both desktop and mobile devices.
13. Administrators will be able to make ongoing updates to the app.
14. Adventure guides and waterpark attendants will be able to use scanners to scan admission and fast pass barcodes. Campground staff can only scan for admission.
15. Campground and dining staff will be able to see reservations lists, canceling reservations if needed.
16. Medical and Security staff can get medical and security requests, displaying to each other who's responding to a request.
17. Guest Services staff can receive, respond to, and forward requests made to them.
18. Guest Services staff can manage a list of lost and found items.
19. Activities/Event coordinators can list, edit, or cancel activities on the app.
20. Owners and managers can access all other employee functionalities.

# Glossary of Terms

**Cost Benefit Analysis** – Approach to viewing the pros and cons of the system, specifically the aspect of money.

**Encryption** – the process of converting information or data into a code, especially to prevent unauthorized access.

**Network-** A network is a set of computers sharing resources located on or provided by what is called a network

**Server** - A computer or computer program which manages access to a centralized resource or service in a network.

**Stakeholder** - A person or group that has an interest in the system and who is affected by the system.

**Use Case** - A description of how users will perform tasks in the system.

**Application** -The application is a reference to what is also known as an app. The application is where the primary software will function and allow for the users to interact with the software created.

# Functional Requirements Specification

## Stakeholders

Sunland Adventure Park, guests, park staff, park owners, and managers.

## Actors and Goals

**Adventure Guide:** Needs a general understanding of the application's basic features. Scanning will be the primary use for them.

**Administration:** Needs a general understanding of all features and functions in the software and its hardware.

**Dining Staff:** Will need a strong understanding of the reservation system specific to food and restaurant services.

**Medical Staff:** Needs a strong understanding of the guests' requests for medical services.

**Guest Service:** Will need a general understanding of the application's basic features. However, will need a strong understanding of how to manage the help desk, lost and found, and the fast pass system.

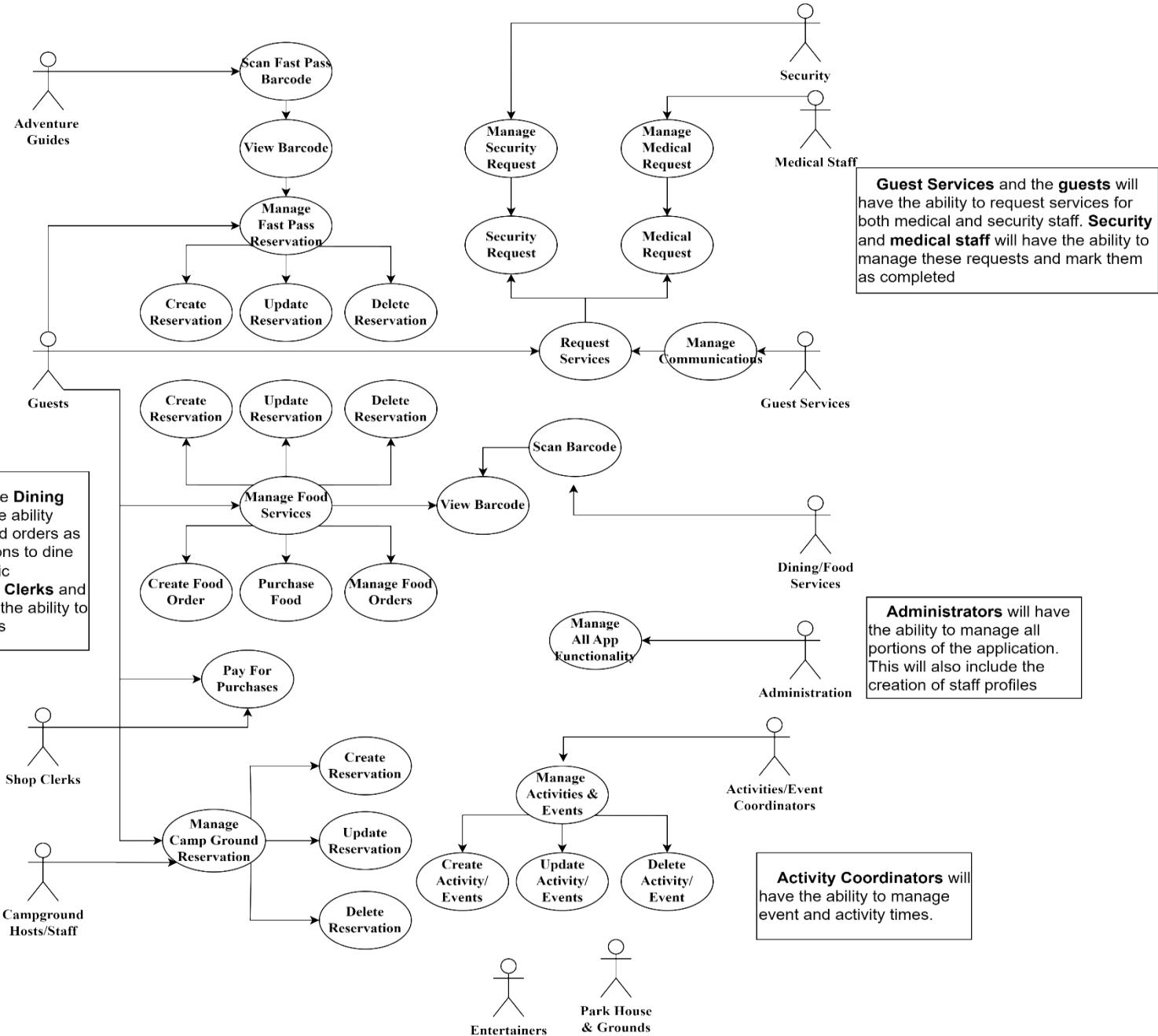
**Security Personal:** Will need a general understanding of requests for security services.

**Activities Coordinators:** Will need a general understanding of how the reservation system works specific to activities and events.

## Use Cases

### Use Case Diagrams

The **adventure guide** will be able to open the barcode portion of the application and then scan the fast pass. Both the **adventure guide** and **guest** have the ability to manage the fast pass reservation



# Use Case Descriptions

## Fast Pass Reservation Use Case Description

Use case name: Fast Pass Reservation	ID: 1	Importance Level: High
Primary actor: Guests	Use case type:	
Stakeholders and interests: Sunland Adventure Park – Want guests to have an enhanced park experience. Adventure Guides – Want to do their job efficiently. Guests– Want to have the most efficient experience.		
Brief description: This use case describes how Guests will use the app to manage their fast pass reservations.		
Type: External		
Trigger: The Guest enter into the tickets page.		
Relationships: Association: Guests Include: Create reservation, manage reservation, delete reservation Extend: View Barcode Generalization: View Barcode		
Normal flow of events: <ol style="list-style-type: none"><li>1. Click into the tickets page</li><li>2. Select either create reservation, manage reservation or delete reservation, or view barcode<ol style="list-style-type: none"><li>a. S-1: Create Reservation is chosen.</li><li>b. S-2: Manage Reservation is chosen.</li><li>c. S-3: Delete Reservation is chosen.</li><li>d. S-4: View Barcode is chosen.</li></ol></li><li>3. Click the back button to return to Home Screen.</li></ol>		
Subflows: S-1: Create Reservation is chosen. <ol style="list-style-type: none"><li>1. Chose date for reservation.</li><li>2. Chose Ride for reservation.</li><li>3. Finalize details for reservation.</li></ol> S-2: Manage Reservation is chosen. <ol style="list-style-type: none"><li>1. Select to manage reservation.</li><li>2. Edit Date for reservation.</li><li>3. Edit Ride for reservation.</li><li>4. Finalize details for reservation.</li></ol> S-3: Delete Reservation is chosen. <ol style="list-style-type: none"><li>1. Select which reservation to delete.</li><li>2. Finalize details to delete reservation.</li></ol> S-4: View barcode is chosen. <ol style="list-style-type: none"><li>1. Select reservation to view barcode.</li><li>2. Show barcode to employee.</li></ol>		
Alternate/exceptional flows: N/A		

Figure 1.1: Use Case Description of the Fast Pass reservation use case

## Manage Food Services Use Case Description

Use case name: Manage Food Services	ID: 1	Importance Level: High
Primary actor: Guests	Use case type:	
<p><b>Stakeholders and interests:</b></p> <p>Sunland Adventure Park – Want guests to have an enhanced park experience.  Dining/ Food Services – Want to do their job efficiently.  Guests – Want to have the most efficient experience.</p>		
<p><b>Brief description:</b></p> <p>This use case describes how Guests will use the app to manage their food services reservations and order food.</p> <p>Type: External</p>		
<p><b>Trigger:</b> The Guest enters the food page.</p>		
<p><b>Relationships:</b></p> <p>Association: Guests  Include: Create, manage, delete a reservation, create food order, purchase food, manage food orders  Extend: View Barcode  Generalization: View Barcode</p>		
<p><b>Normal flow of events:</b></p> <ol style="list-style-type: none"> <li>1. Click into the tickets page</li> <li>2. Select either create reservation, manage reservation or delete reservation, create food order, purchase food order, manage food order, or view barcode <ol style="list-style-type: none"> <li>a. S-1: Create Reservation is chosen.</li> <li>b. S-2: Manage Reservation is chosen.</li> <li>c. S-3: Delete Reservation is chosen.</li> <li>d. S-4: Create Food Order is chosen.</li> <li>e. S-5: Purchase food order is chosen.</li> <li>f. S-6: Manage food order is chosen.</li> <li>g. S 7: View Barcode is chosen.</li> </ol> </li> <li>3. Click the back button to return to Home Screen.</li> </ol>		
<p><b>Subflows:</b></p> <p>S-1: Create Reservation is chosen.</p> <ol style="list-style-type: none"> <li>1. Select date for reservation.</li> <li>2. Select a restaurant for reservation.</li> <li>3. Finalize details for reservation.</li> </ol> <p>S-2: Manage Reservation is chosen.</p> <ol style="list-style-type: none"> <li>1. Select to manage reservation.</li> <li>2. Edit Date for reservation.</li> <li>3. Edit Restaurant for reservation.</li> <li>4. Finalize details for reservation.</li> </ol> <p>S-3: Delete Reservation is chosen.</p> <ol style="list-style-type: none"> <li>1. Select which reservation to delete.</li> <li>2. Finalize details to delete reservation.</li> </ol> <p>S-4: Create Food order is chosen.</p> <ol style="list-style-type: none"> <li>1. Select the items for the order.</li> <li>2. Choose the quantity of items in the order.</li> <li>3. Finalize details for the order.</li> </ol> <p>S-5: Purchase Food Order is chosen.</p> <ol style="list-style-type: none"> <li>1. Verify Card information.</li> <li>2. Confirm payment for order.</li> </ol> <p>S-6: Manage Food Order is chosen.</p> <ol style="list-style-type: none"> <li>1. Select which order.</li> <li>2. Edit Items and quantity in order.</li> <li>3. Finalize details to update order.</li> </ol> <p>S-7: View barcode is chosen.</p> <ol style="list-style-type: none"> <li>1. Select reservation to view barcode.</li> <li>2. Show barcode to employee.</li> </ol>		
<p><b>Alternate/exceptional flows:</b></p> <p>N/A</p>		

Figure 1.2: Use Case Description of the Food services use case

# Activity Diagrams

## Fast Pass Activity Diagram

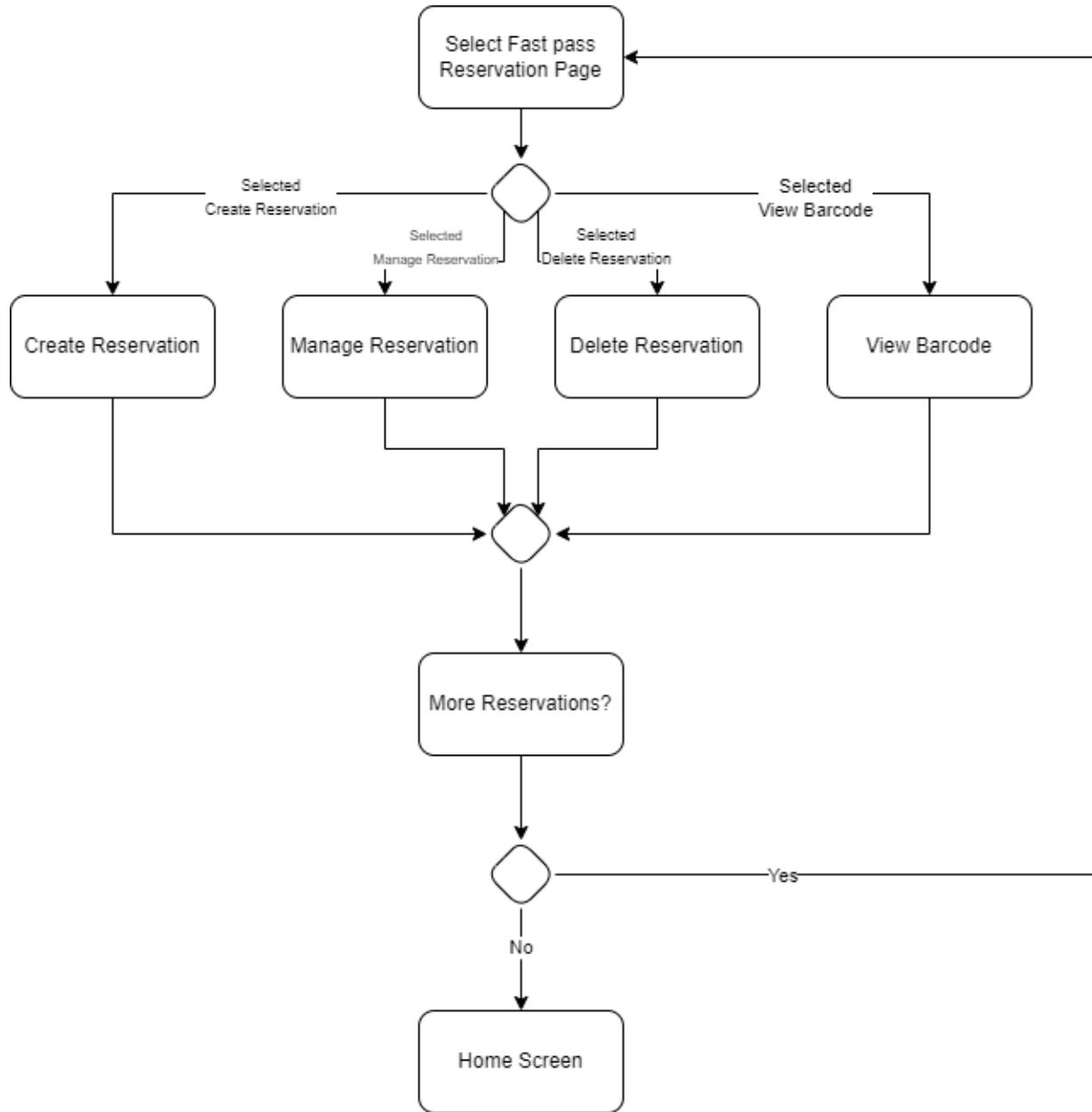


Figure 1.3: Activity Diagram of the Fast Pass reservation use case

## Manage Food Services Activity Diagram

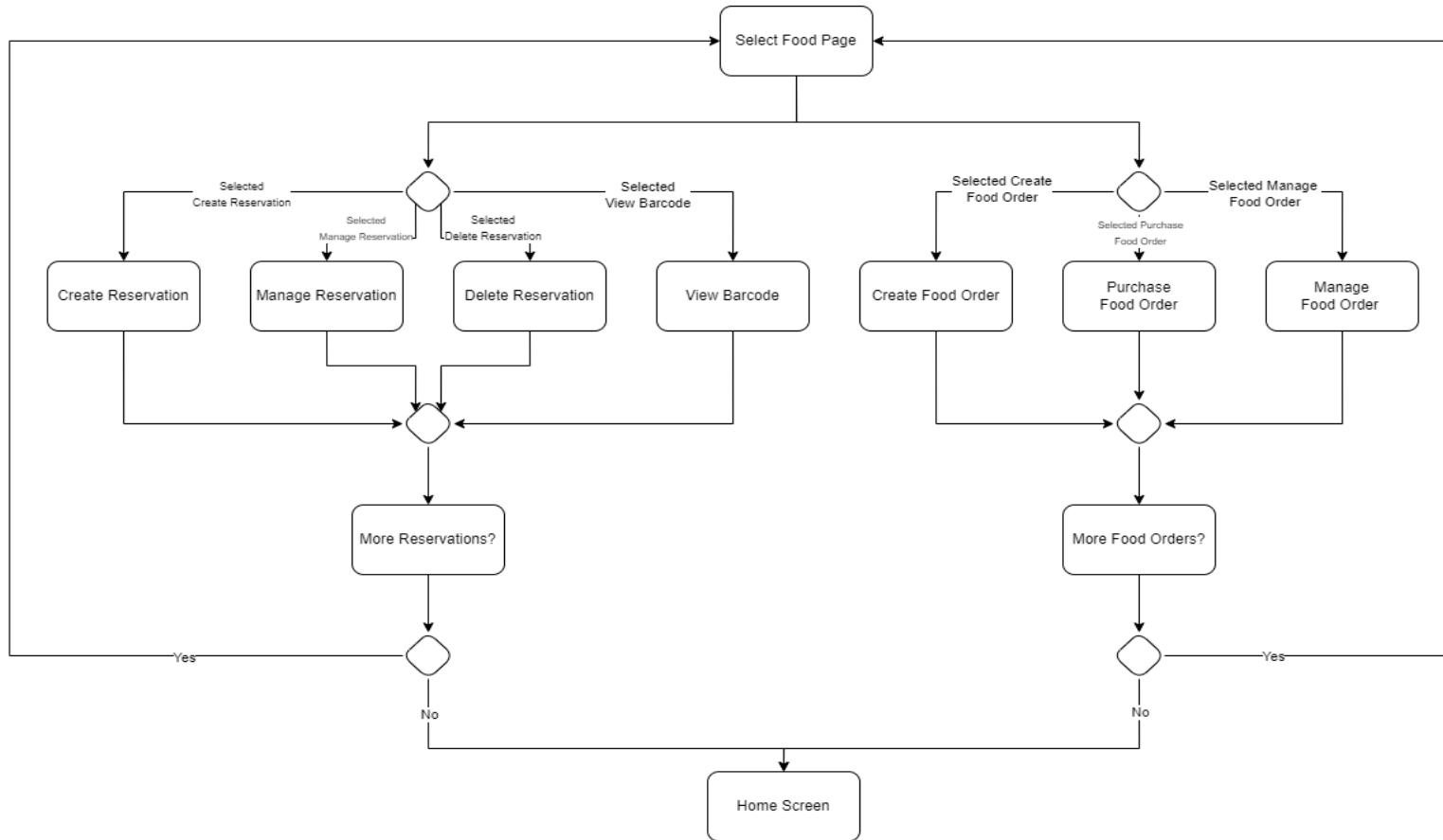


Figure 1.4: Activity Diagram of the Food Services use case

## Interaction Diagrams

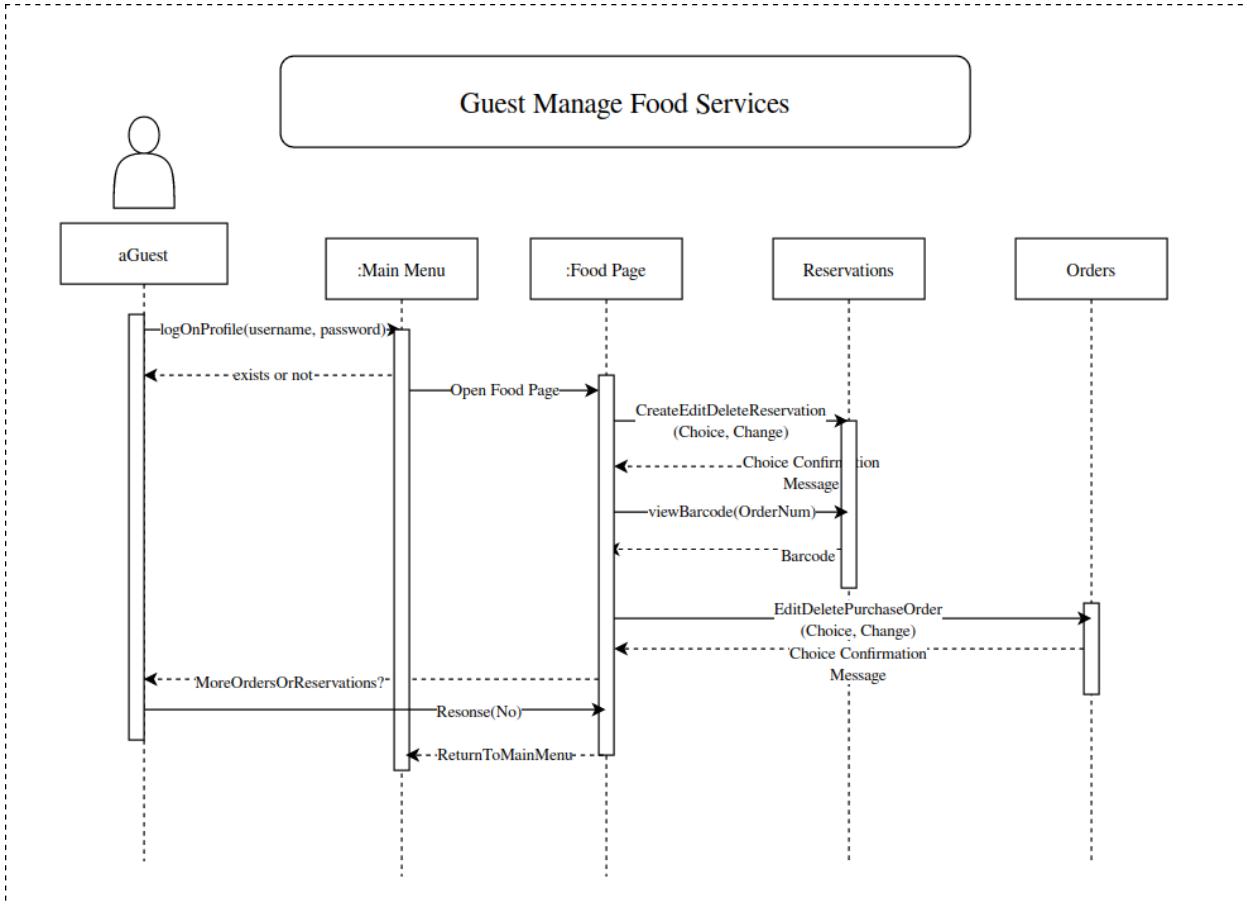
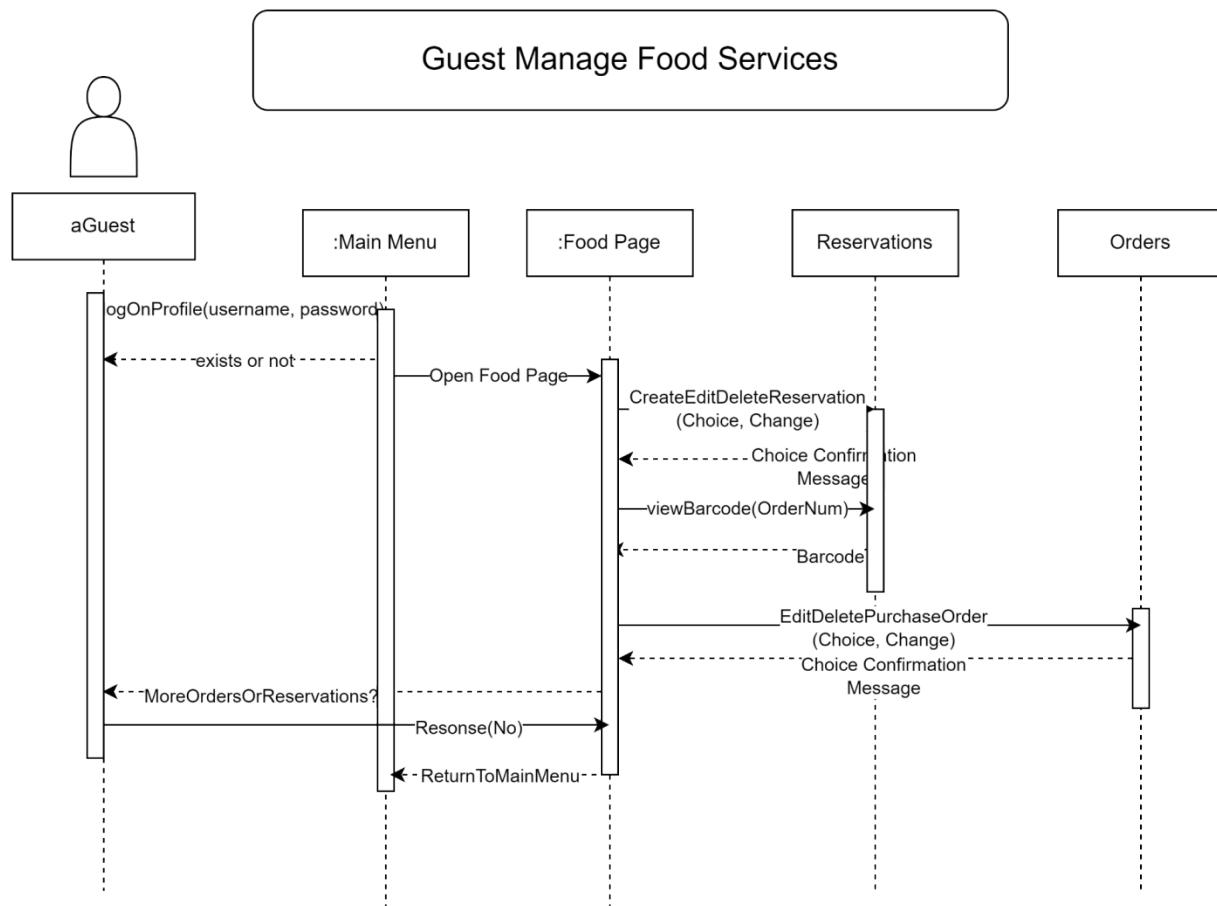


Figure 1.5 Interaction diagram Managing Food Services Guest Side

Figure 1.5: UML of interaction diagram depicting the process and relationships that occur when a guest uses the food services available on the food page.



*Figure 1.6 Interaction diagram Guest performs a food order*

Figure 1.6: UML of interaction diagram depicting the process and relationships that occur when a Guest purchases food

## **Objects that Change State**

- Tickets
- Medical Request
- Security Request
- Guest Service Request
- Guest Profile
  - Username
  - Password
- Staff Profile
  - Username
  - Profile
  - Job Position
- Dining
  - Dining Reservation
  - Food Order
- Ride
  - Ride Times
- Lost and Found Items
- Group Icons on map

## Behavioral State Machine

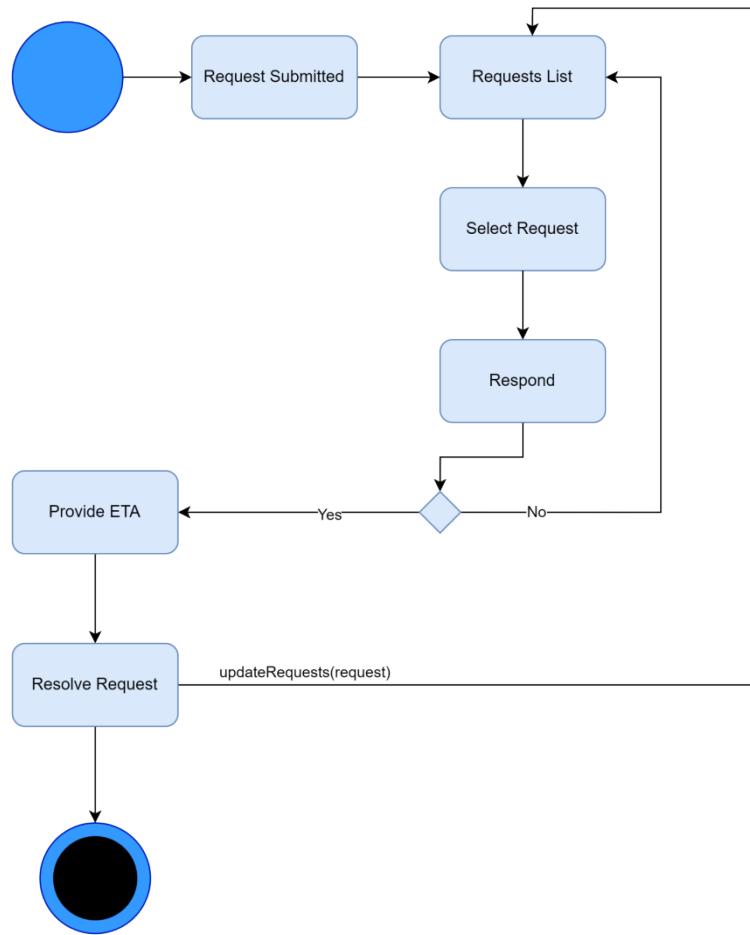
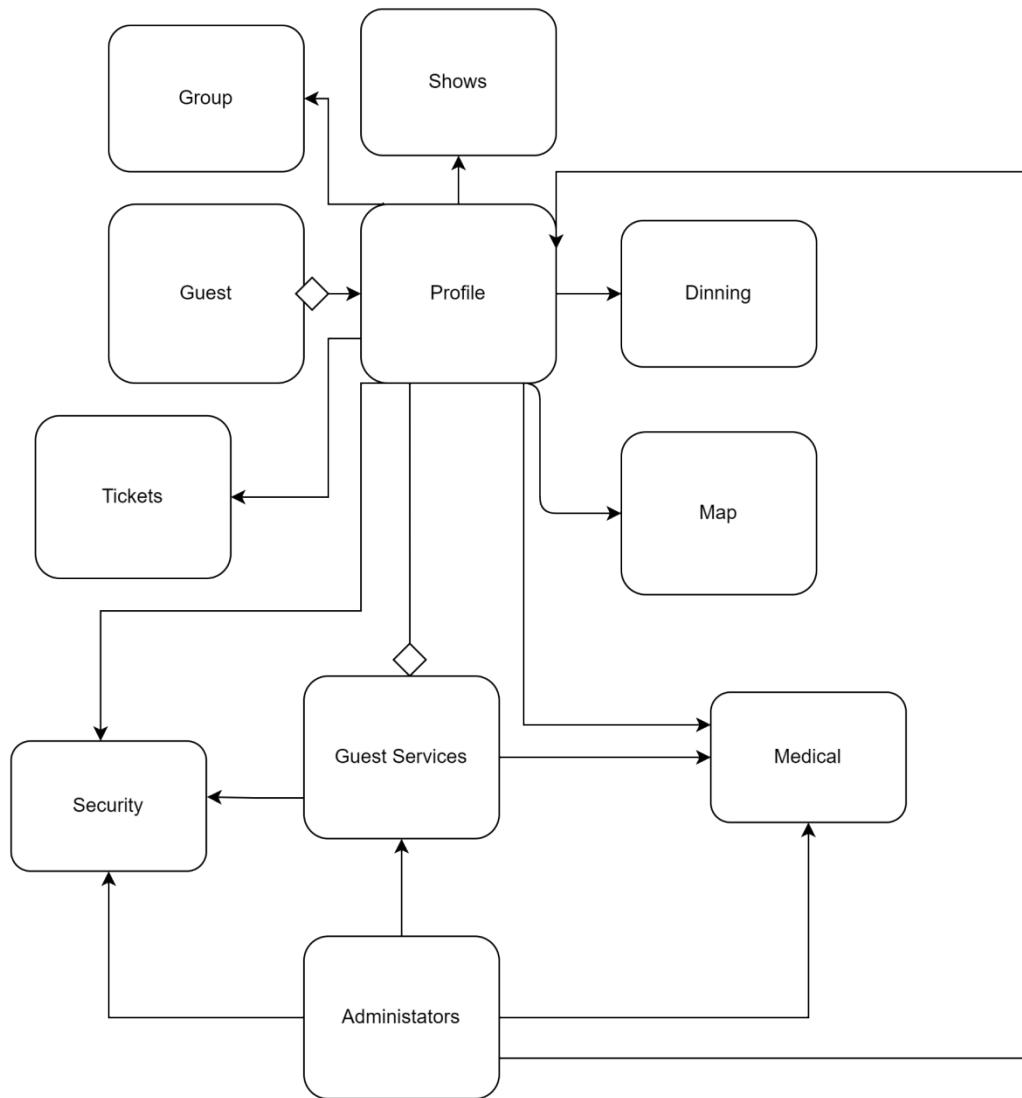


Figure 1.8 Behavioural State Machine

Figure 1.8: Behavioral diagram depicting the process of a medical or security staff member updating their availability, assigning themselves to an issue, and resolving it.

## Overview Class Diagrams



*Figure 1.9 Overview of class diagram*

Figure 1.9: UML of class diagram depicting all classes together and demonstrating the relationship between these classes.

## Potential Class Diagrams

- Park sending out information to the Guests
- Guest creating a reservation and ordering food
- Park Guest create account

# **Non-Functional Requirements**

## **Operational**

- Collect data and information regarding guest purchases, attendance and application usage.
- Allow the administrators to provide updates to the application as needed
- A notification system for park guests and staff (reservations, events, or submitted issues).

## **Performance**

- Have application boot time be less than 2 seconds at almost all startups
- Have high capacity storage for data related to application

## **Security**

- Only allowing guests above the age of 18 to manage the group
- Encrypted storage for guests information
- Administrators have exclusive access to updating the application
- Employees exclusively have access to employee only screens

## **Cultural/Political**

- The ability to change the color or set the theme (Dark mode)
- The ability to use additional languages

## **References**

- System Request (see Appendix)
- Stakeholder Analysis (see Appendix).
- Cost Benefit Analysis (see Appendix).

## **User Interface**

Park Guests will be using their own mobile phone to allow for a scanner to scan their park ticket. Guests will also be able to interface with a separately sold wristband that will also serve as park entry proof.

## **Hardware Interfaces**

Park guests will have the opportunity to purchase a wristband that uses an RFID tag that allows guests to enter the park without having to have their phones scanned. Adventure guides and waterpark attendants will use a scanner to scan for FastPass and admission.

## Storyboards (Guests)

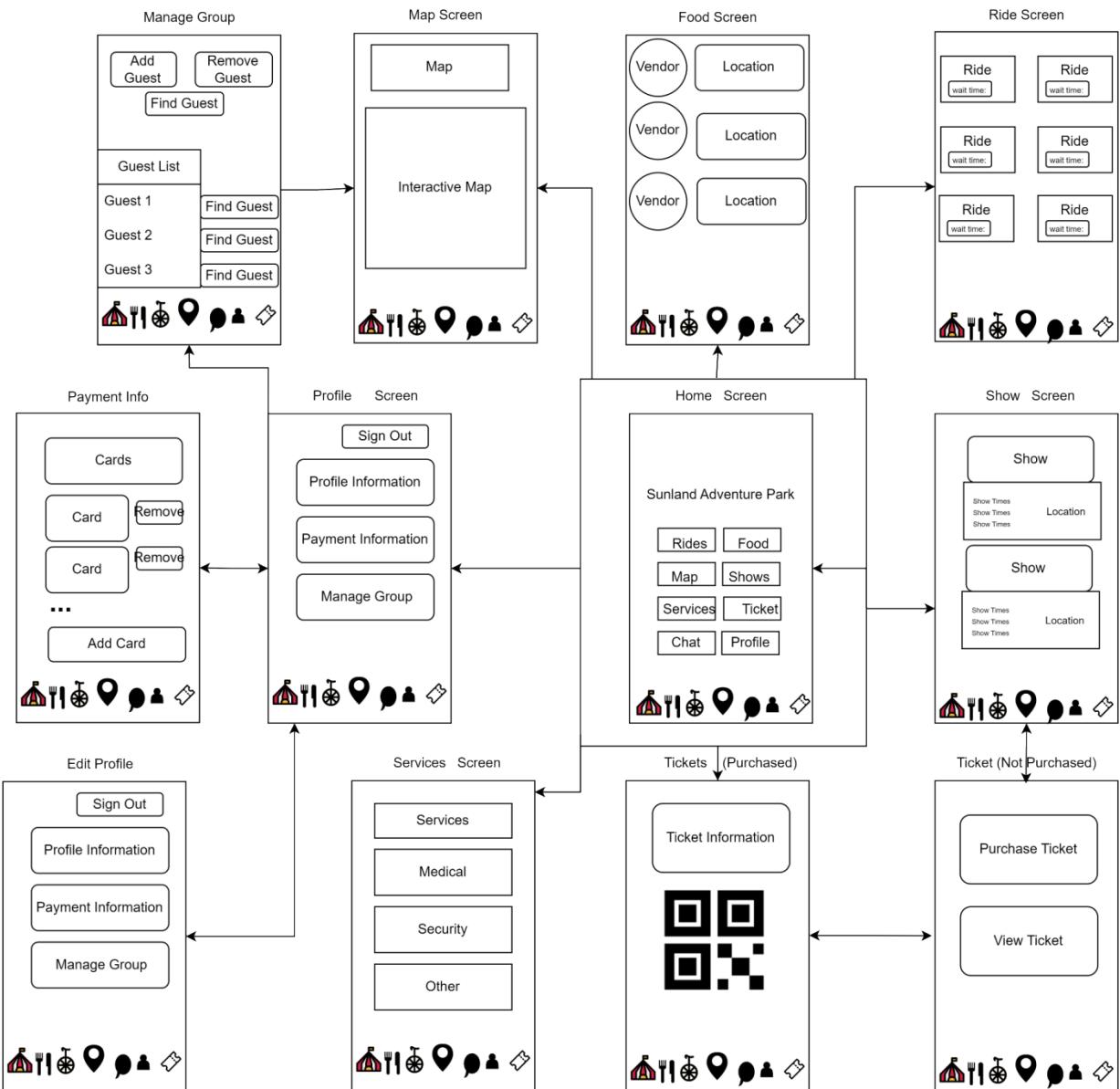


Figure 1.9: Storyboard for User prototype

## Storyboards (Staff)

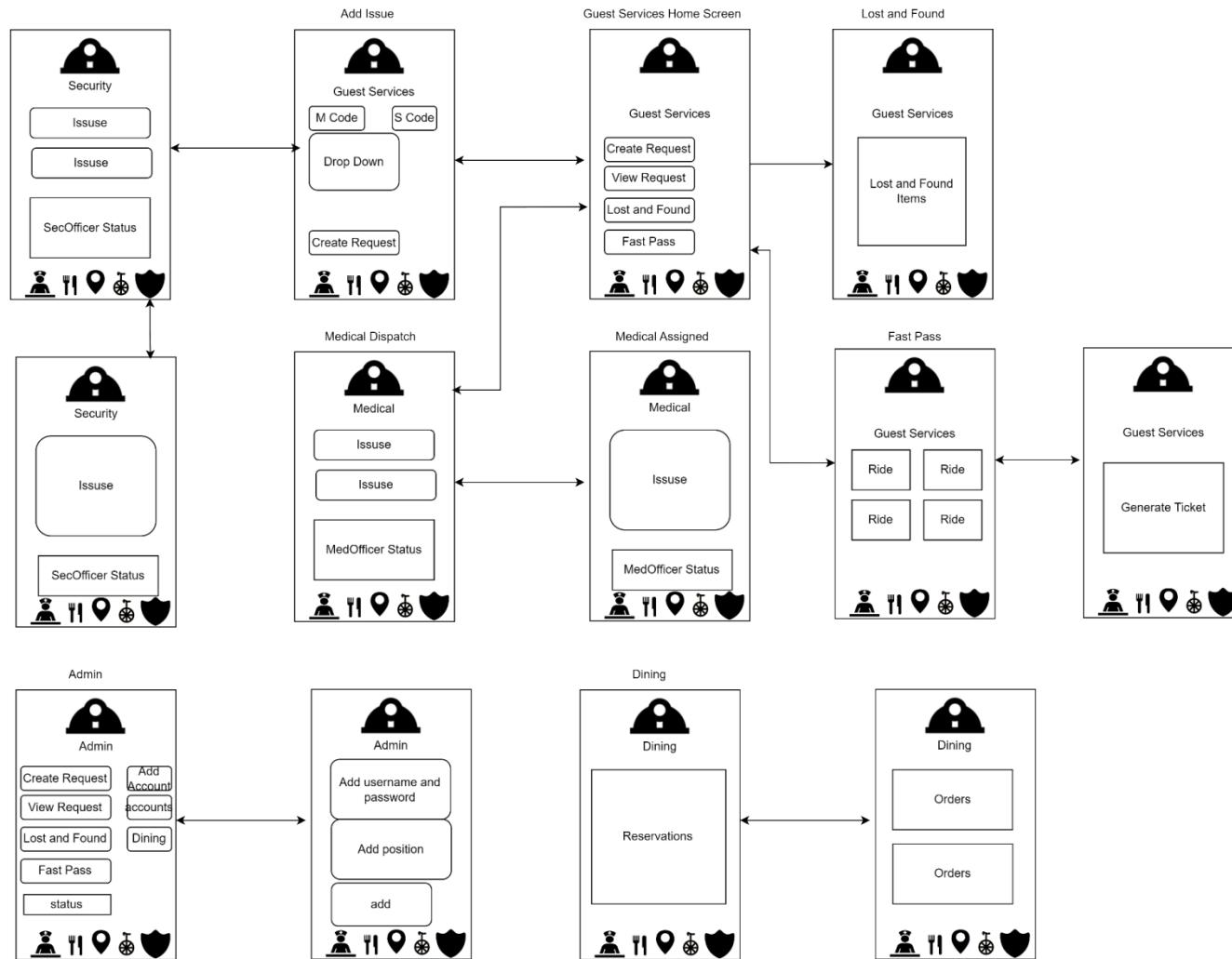
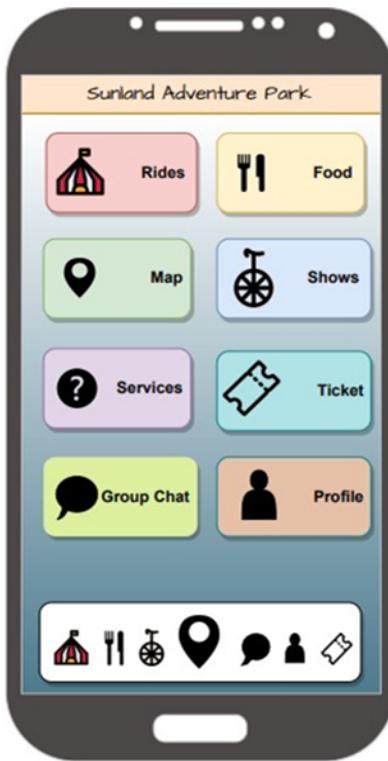
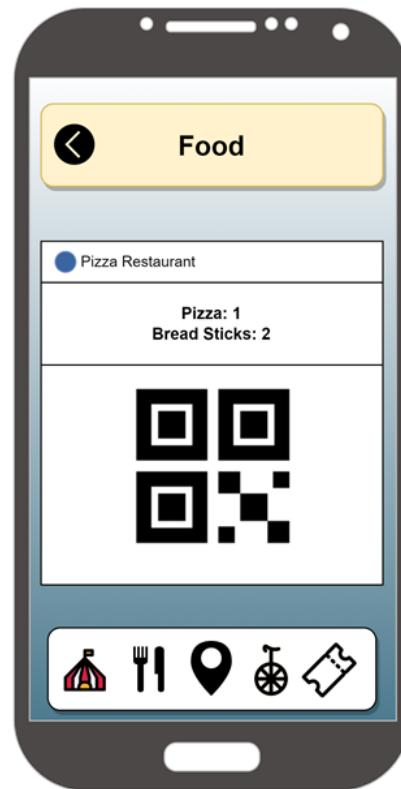
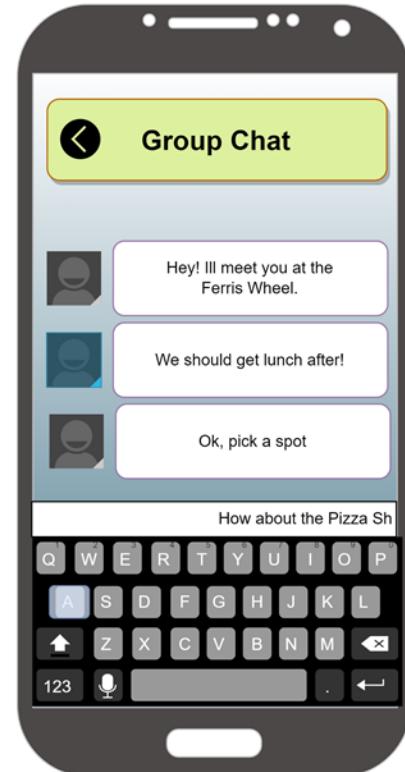
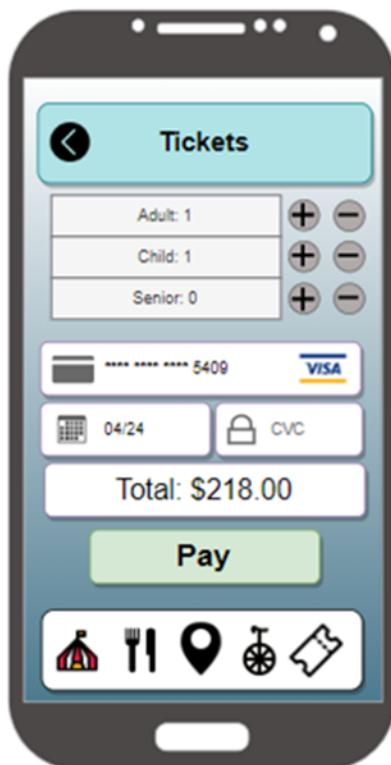
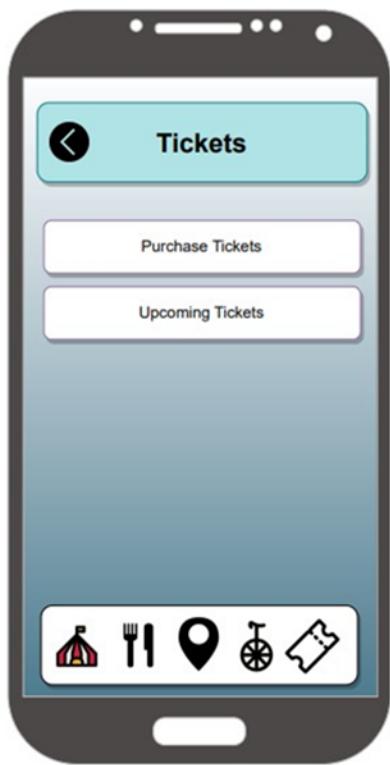


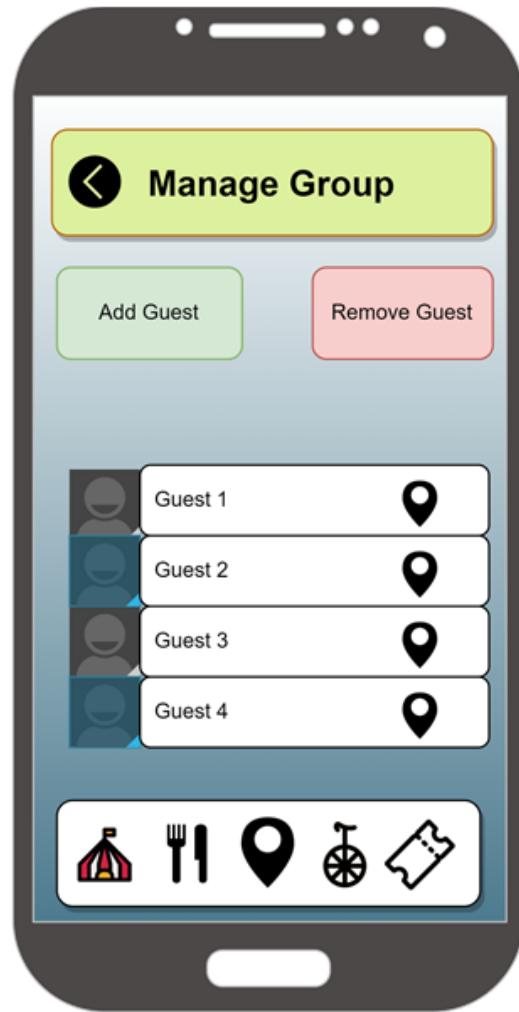
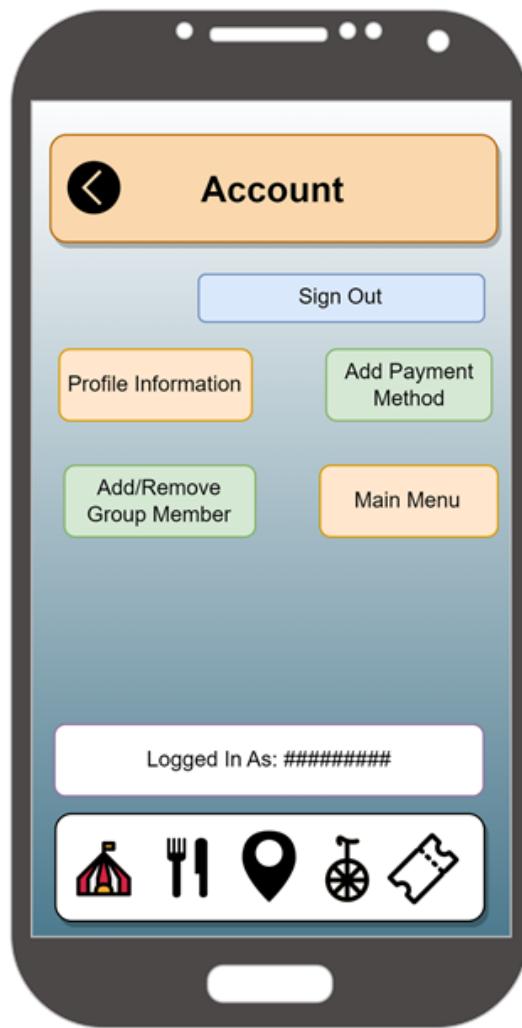
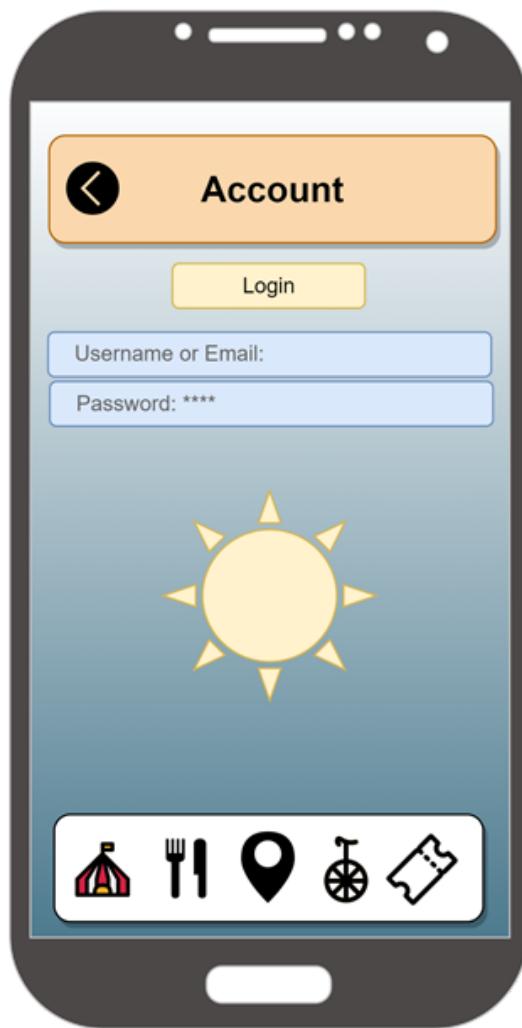
Figure 1.10: Storyboard for Staff prototype

## Prototype (Guests)

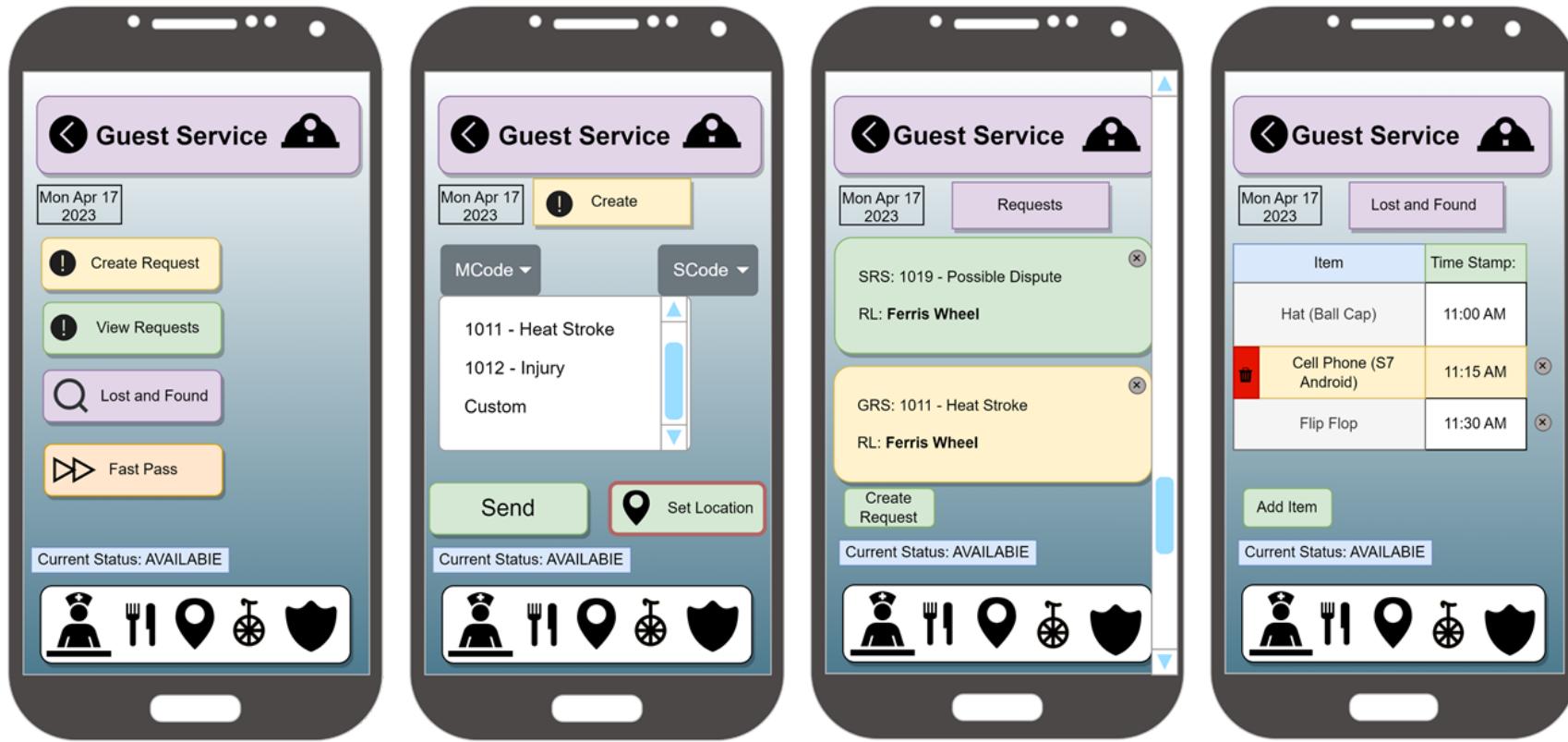


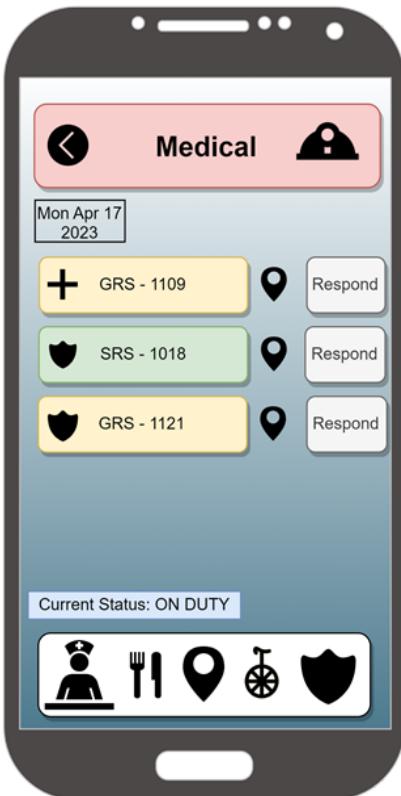


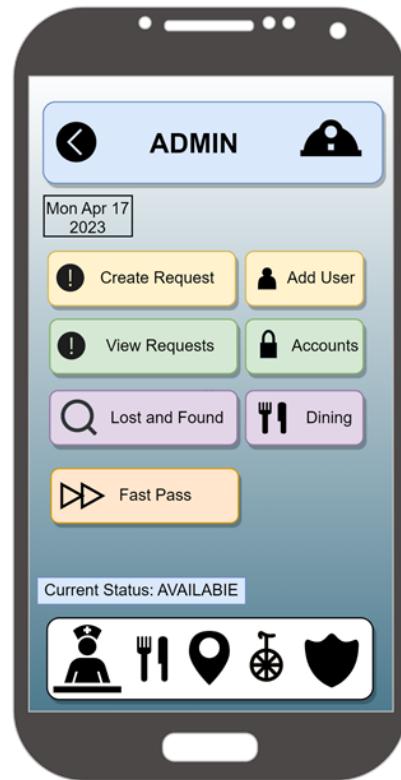
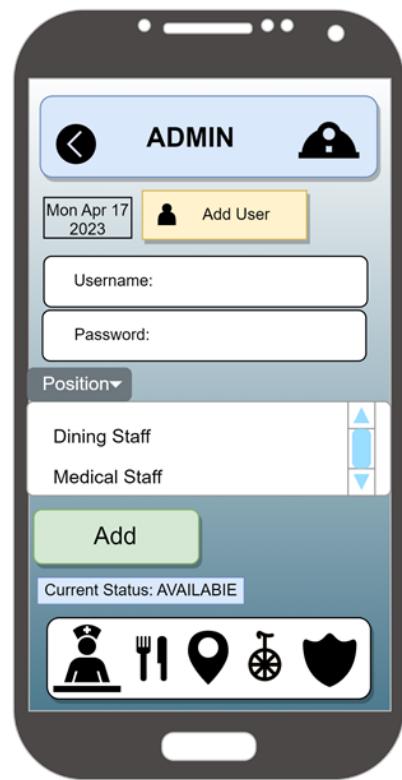
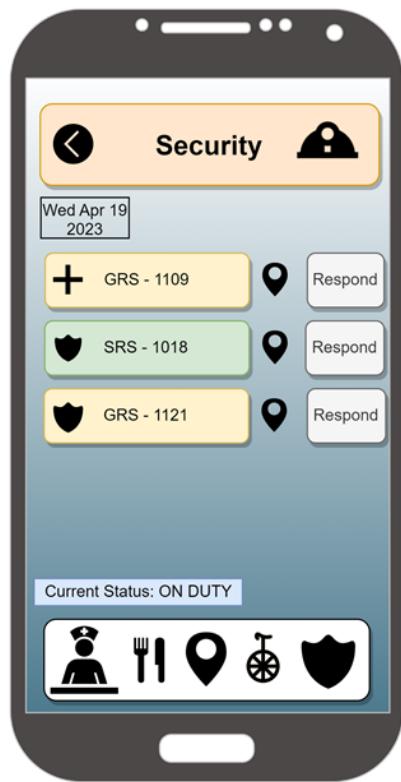


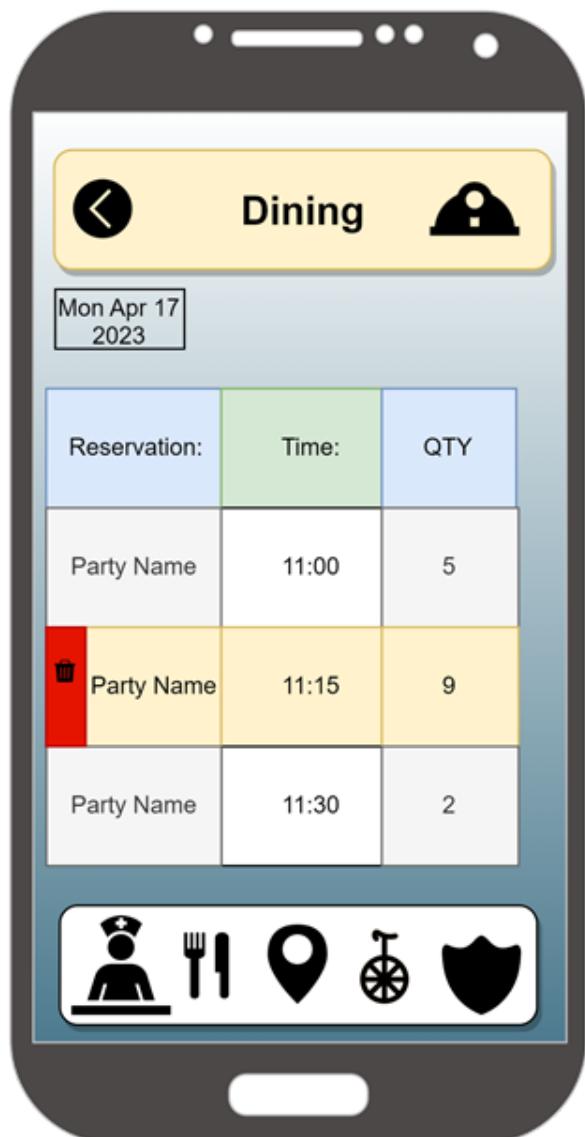
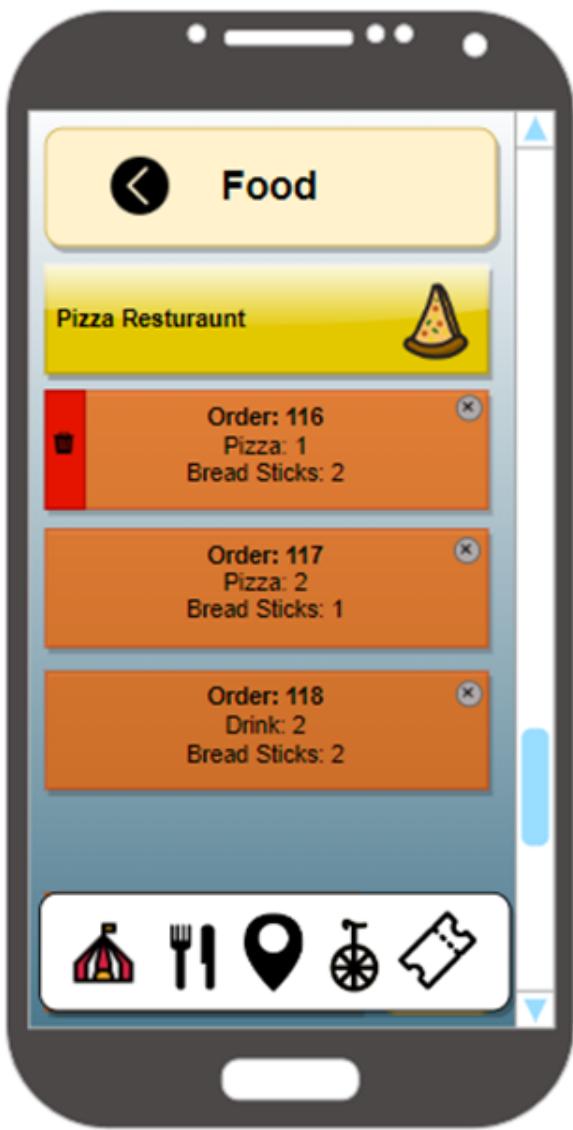


## Prototype (Staff)









# Appendix

## **System Request: Sunland Adventure Park**

### **Project Sponsor**

Sunland Adventure Park

### **Business Need**

Streamlined guest transactions, easier reservations for park services, guests having an easier time navigating the park, guests being able to track members of their group, guests having the ability to communicate with each other, and guests being able to request aid.

### **Business Requirements**

A free app where guests can make accounts that can be used to make reservations, request aid or to form groups that can communicate with and track each other. The app will also include an interactive map of the park when connected to the LAN.

### **Business Value**

Tangible: Revenue is expected to increase by 16% and attendance by 10% after one year.

Intangible: improved customer service.

### **Special Issues or Constraints**

The app makes use of electronic payments so payment info must be secure alongside other personal information.

## **Stakeholder Analysis**

### **Technical Feasibility**

#### **Familiarity with Functional area:**

Moderate risk as they've never worked with an app in their business, but isn't hard to integrate.

**Familiarity with technology:**

Apps and websites of this type are increasingly more common. Familiarity is high.

**Project Size:**

Small group

**Compatibility:**

High compatibility with easy-to-moderate integration

**Organizational Feasibility**

**Project champion:** Alison Sunderland

**Senior management:** N/A

**Users:** Visitors and workers

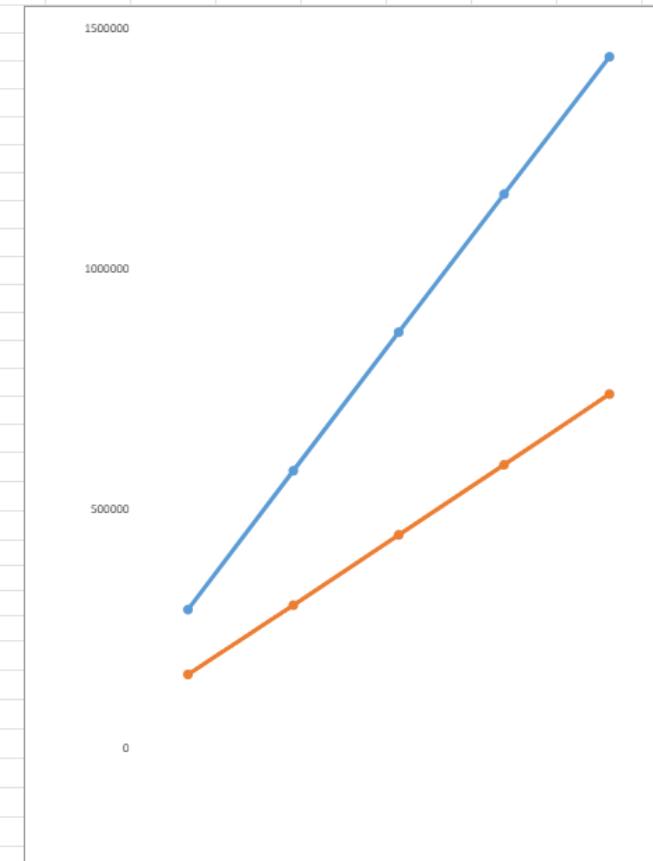
**Other stakeholders:** N/A

**Is the project strategically aligned with the business?** Yes

# Cost-Benefit Analysis

## Cost Benefit Sheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Interest		1	2	3	4	5											
2	0.035		1.0350000	1.0712250	1.1087179	1.1475230	1.1876863											
3																		
4	Tangible Benefits:																	
5	Revenue per guest		102	106	108	112	116											
6																		
7	Intangible Benefits																	
8	Returning Customers		300000	310000	320000	330000	340000											
9																		
10	TB		300,000	310,000	320,000	330,000	340,000											
11	PV TB		289,855	289,388	288,622	287,576	286,271											
12	PV ALL		289,855	579,243	867,865	1,155,441	1,441,712											
13																		
14	one time costs																	
15	Workstations		8500	0	0	0	0											
16	Server		3000	0	0	0	0											
17																		
18	ongoing costs																	
19	VS Code Enterprise		1000	1000	1000	1000	1000											
20	IT Support		2000	2000	2500	2700	2800											
21	Office Rent		2500	2500	2750	2750	3000											
22	Salaries		142,800	148,800	155,800	160,800	167,800											
23	Internet		320	320	340	340	380											
24																		
25	TC		160,120	154,620	162,390	167,590	174,980											
26	PV TC		154,705	144,339	146,466	146,045	147,328											
27	PV ALL		154,705	299,045	445,511	591,556	738,885											
28																		
29																		
30	FV		139,880	155,380	157,610	162,410	165,020											
31	ALL		135,150	145,049	142,155	141,531	138,942											
32	ALL-ALL		135,150	280,199	422,354	563,885	702,827											
33			0	-0.9317531	-1.9710757	-2.9841804	-4.0584063											
34																		
35	ROI			95.12%														



# Effort Breakdown Table

Task Name	Point Value	Team Member Name				Task Completion
		Maitland Andrus	Devin Eccles	Dallen Sandstrom	Kaytee Tiede	
System Request	60			50%	50%	100%
CBA	60	75%	25%			100%
Presentation	60	25%	25%	25%	25%	100%
Brochure	60	35%	40%	20%	5%	100%
Customer Statement of Requirements	30			100%		100%
Glossary of Terms	5	50%	25%	25%		100%
Functional Requirements	145	50%	45%	5%		100%
Non-functional Requirements	15	50%		50%		100%
References	5	25%	25%	25%	25%	100%
User Interface Design	50	35%	25%	25%	15%	100%
Member Totals		182.25	134.25	116.75	56.75	