Software Requirements Specification (SRS)

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For

Town of Fort Myers Beach Parking

Version 1.0 approved

Prepared by Devin Arena

4/20/2021

Revision History

Name	Date	Reason For Changes	Version
Devin Arena	4/20/2021	Initial Draft	1.0

1. Introduction

1.1 Purpose

The Town of Fort Myers Beach is looking to ease traffic around the beach and provide more information about available parking to the public. For this reason, a small application is desired to display information about public parking accesses. By developing this software, the goal is to reduce traffic congestion by making the public more aware of parking availability, leading to less vehicles on the road. This is especially important during seasons where the beach is more crowded, such as during the summer. The software will provide information such as parking availability, distance to both the user and nearby beaches, beach hours, etc. The software may also benefit the local government by integrating with existing equipment and tasks. For example, the software may integrate with parking enforcement tasks to make enforcing and settling parking violations easier.

1.2 Scope

Product Name

Town of Fort Myers Beach Parking Application (likely shortened to TFMB Parking for the application name)

Overview

The software product will integrate with existing parking equipment to display parking information for public parking accesses in the Town of Fort Myers Beach in real-time. Parking information may include parking spaces available, distance to the beach, distance to the user, and beach hours. The mobile application will display this information as cards on the screen that provide more information when tapped on.

Goals

The main goal of the software is to give the general public more public parking access information. If users are better educated on parking, they may find it easier to find parking for the beach they want to visit. Ideally, this will generate more user satisfaction which may lead to more people visiting the beach. Increased beach activity may generate more revenue for the local government and nearby businesses. By providing users with more information, it may help to ease traffic near the beaches and parking accesses. One essential goal is to ensure the application is usable by as much of the general public as possible. This must be done through accessibility features for those with disabilities as well as supporting a wide array of devices.

Out of Scope

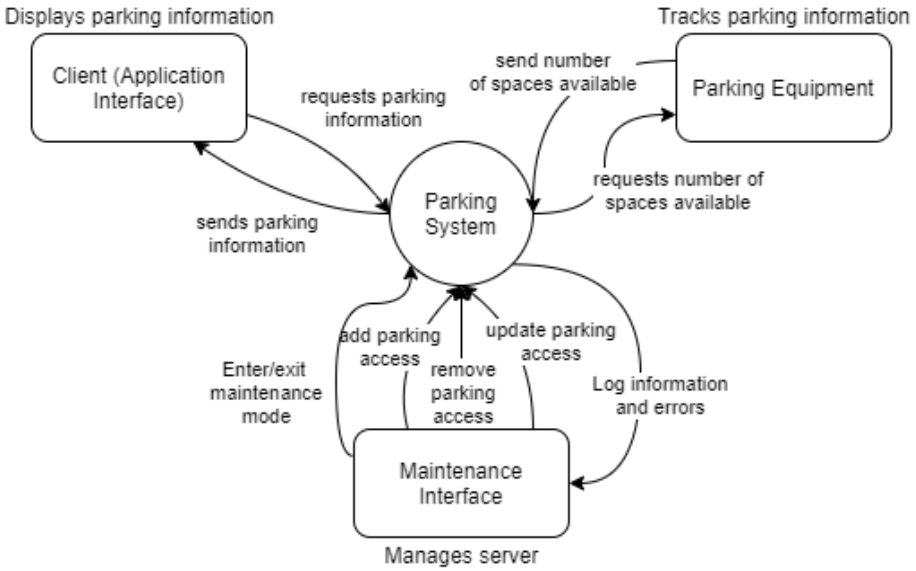
Proposed features of the application that are deferred to later development or are completely out of scope:

- the ability to write/settle parking violations using the application,
- the tracking of how long specific vehicles have been parked for
- statistics on the average density of parking access users for a time period
- paying for parking via the application
- parking information for private beach accesses

1.3 Product overview

1.3.1 Product perspective

Context Diagram



Key	Summary	Description	T
BCH-58	The system must be developed and released before peak beach season.	Due to the nature of people going to the beach, the system should be designed and released before peak usage is expected to ensure it works properly and prevent major fallout.	
BCH-57	The software must not undergo maintenance during peak business times.	To prevent user frustration and increase usability, maintenance should not happen during peak business times for the beach (during the day).	
BCH-56	Data stored on the central server must be stored using a central repository structure.	Any data stored on the central server will be in a repository style using a language such as SQL/SQLite.	
BCH-47	The software must work with existing parking equipment.	Parking equipment already exists that allows for the general tracking of the number of spaces. This equipment should be used again and simply displayed on a mobile application interface.	
BCH-46	The system must display all parking information with good readability on a single screen.	For more detailed screens, the parking information should be displayed on a single screen with good readability. Accessibility features may be warranted for some users. This includes items such as high-contrast, text-to-speech, large text size, etc.	
BCH-45	The system must not interfere with the work of parking enforcement, maintenance personnel or private businesses.	The system must not make the lives of parking enforcement or maintenance personnel more difficult. Possible functionality to assist in these departments for future versions.	

BCH-44	Cards containing access summary must be able to be organized by distance, current capacity, maximum capacity, etc. with the press of a button.	To make it easier for users to find parking accesses near them or more relevant to them, the system should allow users to sort cards by different categories. This will ensure users are not searching for the right parking access.	
BCH-43	Data must be stored on a central server and devices will query the server for information.	The central server storing the data will help prevent an overloaded system from devices connecting to parking equipment. All data stored on the central server should be done using a central repository data store.	
BCH-42	The software must work on older Android and iOS devices.	To accommodate the largest proportion of the public possible, the system must work on older versions of devices. This may involve using older versions of the Android SDK or iOS development kit.	
BCH-41	The software must be developed using a cross-platform development API/SDK.	Development for the system will be done by a small team in a limited time frame. To accomplish all necessary goals, native code should be avoided to lessen development time. Development tools to consider: React, Node.js, Flutter	

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1.3.2 Product functions

Major functions of the application include:

- Integrating and communicating with parking equipment to receive information on parking space availability
- Displaying a list of public parking accesses in a logical order (distance to the user, spaces available, etc.)
- Displaying parking space availability in real-time
- Displaying general parking information for all public beach accesses
- Displaying location information, such as distance to user and beach from a parking access
- Displaying general beach information for beaches near parking accesses
- Accounting for spaces occupied by parking pass holders and pay-to-park users
- Accommodating a wide array of devices
- Accommodating users with disabilities

1.3.3 User characteristics

- The general public
    - The biggest group of users of the system
    - Will use the system to find appropriate parking spaces with less of a hassle
    - The information must be presented in a friendly and easy to understand the manner
    - Generally divided into major groups:
        - Older population
            - Will not be very tech-savvy, the system must account for their technological literacy
            - The system must also account for possible accessibility issues
        - Middle-aged population
            - Possibly not tech-savvy, the system must account for technological literacy
        - Younger population

        - More technologically literate
        - The system may need to account for new drivers
    - The system must also account for possible accessibility issues
        - Eyesight
        - Hearing
- Fort Myers Beach property owners
    - May indirectly be affected by benefits of the application such as less traffic congestion
    - Most characteristics align with the general public
- Public parking enforcement
    - May use the application to enforce parking regulations
    - The system must not impede their ability to enforce parking regulations
    - Will likely be more technologically literate
    - May be granted special permissions for the system

1.3.4 Limitations

Key	Summary	Description	T
BCH-28	The software must require as few permissions as possible.	The application will likely only require access to location, internet, and storage. Excess permissions and/or tracking must not be necessary.	
BCH-27	The software must display information in a simple and accessible way.	In order for the maximum proportion of the public to have the ability to use the system, it should be as accessible as possible. This may include larger text sizes, good contrast, easy-to-understand interfaces, etc.	
BCH-26	The software must display parking information in real-time.	Current parking equipment tracks parking information in near real-time, and therefore the system should as well.	
BCH-25	The software should be reliable, not having downtime, especially during times of high traffic in beach areas.	Downtime must be avoided during times of high traffic for beaches. In order to accomplish this, the system should design should focus on reliability.	
BCH-24	The software must communicate with existing parking equipment to receive parking information.	Current parking equipment tracks and displays how many parking spaces are located in an access, the application must simply connect to these and display the information on a remote interface.	
BCH-23	The system must not interfere with existing processes.	The system cannot be designed to interfere with private parking accesses, parking enforcement processes, or parking payments.	
BCH-22	The software cannot track or display users personal data.	There is a thin line to be walked in terms of how much user information can be stored and displayed. Personal information should not be collected and only very minute information, such as how many vehicles are in a parking access, should be displayed.	

BCH-21	The software must be written in a language that supports cross-compatibility (Flutter, React, etc.)	Due to the smaller size of the development team and the need to accommodate so many devices, writing native code would not be worth the extra time. Cross-platform frameworks will allow rapid development at the minor cost of slightly increased application size and small performance hits.	
BCH-20	The system must run on both Android and iOS devices and must accommodate older devices.	The application must be compatible with as many devices as possible so as much of the public can use it as possible. Both older Android and iOS users must not be restricted in their usage of the system.	
BCH-19	The system cannot go down for maintenance from sunrise to sunset.	The system should avoid maintenance during the day, as this is the most frequent time for users to visit parking accesses. This is especially important for the busy season when the application expects the most usage.	

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2. References

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2. Chelsea O'Riley (chelsea@fmb.gov, 239-322-6421)
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4. Software Requirements 3rd Edition
5. Swebok v3
6. MITRE
7. https://sites.google.com/site/profvanselow/course/cen-3073

3. Specific requirements

Key	Summary	Description	T	Linked Issues	P	Labels
BCH-55	The system shall integrate with other applications (e.g. Google Maps) to allow users to navigate to specific accesses easily.	The system should have the ability to integrate with applications such as google maps. This will allow users to navigate to their desired parking access with the press of a button.				Functional, Product, Usability

BCH-54	The system shall store data in a secure manner and backup data to external servers.	In order to prevent a catastrophic loss of data, any data stored on the central repository should also be backed up to external servers frequently. Data stored on the central repository should be secure and data breaches should be prevented.		BCH-12	↑	Database, Functional, Process
BCH-53	The system shall attempt to minimize excess internet usage, especially when devices are not connected to wifi.	In order to prevent user frustration due to high data usage, the application should use data efficiently and may detect when a device is not connected to wifi and warn a user as such.			↑	Nonfunctional, Process
BCH-52	The system shall provide users with a way to customize certain aspects of the application.	Users should have the ability to customize the application in some ways, such as applying filters to how accesses are sorted, what language to display, what theme to use, what information is most important to them, etc.		BCH-59	↑	Functional, Product, Usability
BCH-51	The system shall provide users with easy to navigate menus and descriptive input information.	Due to attempting to allow as many users as possible to utilize the software, large emphasis should be placed on making the system easy to understand and navigate. This will prevent any user frustration.		BCH-16 , BCH-17	↑	Nonfunctional, Product, Usability
BCH-50	The system shall provide adequate feedback upon user input.	To aid with accessibility as well as make the system more user-friendly, user input should be met with visual or audio feedback to let users know their input occurred. It may be the system's default or custom.		BCH-16 , BCH-17	↑	Interface, Nonfunctional, Product
BCH-49	The system shall accommodate light and dark themes of devices.	Many devices have the option to display using a "dark theme" or a "light theme". The application should use the default from the OS or allow users to select their own UI style.			↓	Functional, Interface, Product

BCH-48	The system shall display beach parking accesses in a list and upon interacting with each item a more detailed view.	Parking accesses should be listed on the home screen of the application. Important information should be summarized in the list view. When a user taps an item, a more detailed view will appear, displaying much more detailed information about the parking access.		BCH-7 , BCH-10 , BCH-11 , BCH-16 , BCH-17		Functional, Interface, Product
BCH-40	The system shall require few device permissions and low computational power to display information.	The application may require certain permissions, such as internet and location, but such permissions should be restricted. The application will also need to consume a low amount of system resources both to accommodate old devices and keep device performance high. Related stories: • https://devinarena.atlassian.net/browse/BCH-17 • https://devinarena.atlassian.net/browse/BCH-7		BCH-7 , BCH-17		Nonfunctional, Process, Usability
BCH-39	The system shall be developed to work on a wide array of devices to allow as much of the public to use it as possible.	Some users may have older devices and the system should still run on their devices. In order to maximize potential usage and benefit, the system must be written to work with older versions of Android and iOS. Related stories: • https://devinarena.atlassian.net/browse/BCH-17		BCH-17		Nonfunctional, Product, Usability
BCH-38	The system shall be able to easily accommodate new parking accesses and update existing ones.	New parking accesses may be constructed and require being added to the system, or a parking access may gain/lose available parking spaces. This information must be updated in the system and the system should make it easy to do so. Related stories: • https://devinarena.atlassian.net/browse/BCH-9		BCH-9		Functional, Interface, Product

BCH-37	The system shall utilize a central server to keep information accurate and consistent across a large number of devices.	A central server will be used to store parking information, as this will keep the information accurate and consistent across a large number of devices. Each device querying parking equipment could cause strain on the system and may cause inaccurate information to be displayed. Related stories: • https://devinarena.atlassian.net/browse/BCH-11		BCH-11		Database, Functional, Process
BCH-36	The system shall avoid tracking private parking accesses or cause strife for those attempting to use them.	The system must not interfere with private operations including private parking accesses or other businesses in the area. Private parking accesses cannot be tracked. Related stories: • https://devinarena.atlassian.net/browse/BCH-15		BCH-15		Nonfunctional, Process
BCH-35	The system shall accommodate both parking passes and purchased parking access.	The system should be able to track both pay-to-park users and users with parking passes. Especially important because an expected majority of users will have parking passes. Both groups should be tracked to keep the information accurate. Related stories: • https://devinarena.atlassian.net/browse/BCH-16		BCH-16		Functional, Product, Usability
BCH-34	The system shall monitor parking times for certain parking accesses.	The system should be able to monitor parking times for specific parking accesses that only allow limited-time parking. The system may notify the user that their time is almost up to prevent them from receiving a parking infraction. Related stories: • https://devinarena.atlassian.net/browse/BCH-16		BCH-16		Functional, Product

BCH-33	The system shall accommodate both older users and users with disabilities.	The system must have features to accommodate both older users and users with disabilities. Features may include larger text sizes, text-to-speech, high contrast, etc. Related stories: • https://devinarena.atlassian.net/browse/BCH-17 • https://devinarena.atlassian.net/browse/BCH-16		BCH-16 , BCH-17		Nonfunctional, Product, Usability
BCH-32	The system shall have power surge and lightning protection to minimize time necessary for maintenance and repairs.	Especially important in Florida, where lightning strikes are prevalent. Downtime should be minimized for the system in general, and this will involve lightning and storm protection for parking equipment and servers. • https://devinarena.atlassian.net/browse/BCH-8 • https://devinarena.atlassian.net/browse/BCH-18		BCH-8 , BCH-18		Nonfunctional, Product, Usability
BCH-31	The system shall update parking information in real-time.	The system must integrate with existing parking equipment to display parking information for each parking access in real-time. Real-time updates are important to keep users updated especially in cases where not many spaces are available. Users should not drive to a parking access only to find the space they wanted is now taken. Related stories: • https://devinarena.atlassian.net/browse/BCH-11 • https://devinarena.atlassian.net/browse/BCH-7		BCH-7 , BCH-11		Nonfunctional, Performance

BCH-30	The system shall display the parking information on a mobile application interface.	The system will need to display parking information on a mobile application interface. Card icons should display the information in a summarized manner, and users can tap these icons to see more information about specific spaces. The cards should be able to be sorted in ways such as distance, capacity, etc. Related stories: • https://devinarena.atlassian.net/browse/BCH-7 • https://devinarena.atlassian.net/browse/BCH-10		BCH-7, BCH-10		Functional, Interface
BCH-29	The system shall integrate with existing parking equipment to receive parking information.	Existing parking equipment is currently used to track the number of vehicles in a specified parking access and display it outside the access. The system must be able to connect to these and receive the parking information to be displayed.				Functional, Interface, Product

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Key	Summary	Description	T
BCH-59	As a user, I want the system to be customizable to make it easier to use.	The system should have aspects of customizability to make it easier to use.	
BCH-18	As a user, I want the system to have infrequent downtimes during busy times of the year like the summer so I don't have to look for parking when I need it.	Downtime should be minimized during the busiest times of the year/day to make sure users have access to the information when they need it. If the system needs to undergo maintenance, it should not happen during times when the beach is the busiest (during the day).	
BCH-17	As an older user, I want the system to be accessible and understandable even if I'm not great with technology so I can gain full access to its benefits.	The system should be simple to use and have a friendly user interface with helpful tips and information being displayed wherever necessary. The system should make usage for those not technologically literate as simple as possible.	
BCH-16	As a disabled user, I want the system to be accessible so I can use it effectively.	The system should accommodate users with disabilities, such as having large text options, text-to-speech, etc. The system should not be difficult for any party to use.	

BCH-15	As a private parking access owner, I want the system to take into account private parking accesses to make sure it does not cause difficulties for our customers to park at a private access.	The system should not create strife for people attempting to park in private accesses or for the owners of private accesses. More than likely no information about these accesses will be displayed.	
BCH-14	As a parking enforcement personnel, I want the system to be able to incorporate the ticket writing/payment system to make administering and settling tickets easier.	A nice feature for the system would be to incorporate the existing parking enforcement system. This would make things easier for parking personnel to enforce regulations and for the public to settle violations.	
BCH-13	As an administrator, I want the system to be able to monitor how long a specific car has been parking in a space to ensure they are following guidelines.	In some areas, limits for how long people can park are used. The system may need to track how long users have been parked there to accurately display information. This is marked as a possible future feature.	
BCH-12	As an administrator, I want the system to accommodate parking permits so the information displayed is more accurate.	Parking information would include the number of spaces purchased compared to how many spaces are available, but people with permits do not need to pay for parking. The system should also account for these people in order to more accurately display parking information.	
BCH-11	As a user, I want real-time updates for parking space information to ensure I don't drive to a parking access where a space has recently been taken.	The system should use real-time information. The system should query the server/equipment often to make sure the information being displayed is the most current. Users should not drive to parking accesses just to learn all spaces have been taken since the system was last updated.	
BCH-10	As a user, I want supplemental information to be provided about parking accesses to give me an idea of where the best parking location would be.	This information could include distance to nearby beaches, how many spaces total there are, what the cost may be if you do not own a parking permit, how busy the parking access typically is, etc.	
BCH-9	As an administrator, I want the system to easily be able to accommodate new parking spaces in order to keep users up to date on current parking facilities.	The system should accommodate new parking spaces easily. Current parking equipment will be used to transfer information about parking, so it should not be difficult to ensure when a new parking space is added, the system accommodates it. This will keep users up to date and reduce the amount of work needed to maintain the system after deployment.	
BCH-8	As a maintenance operator, I want power surge and lightning protection for the system to minimize the amount of time necessary for repairs and maintenance.	In a place with such frequent storms, parking equipment must be kept protected from power surges and lightning strikes. Downtime should be minimized through maintenance.	

BCH-7	As a user, I want to be able to easily access parking information remotely from my device to stay updated on available spaces.	The application should work on a wide range of devices, including older Android and iOS devices. The system should be lightweight to accommodate low storage spaces for older devices.	

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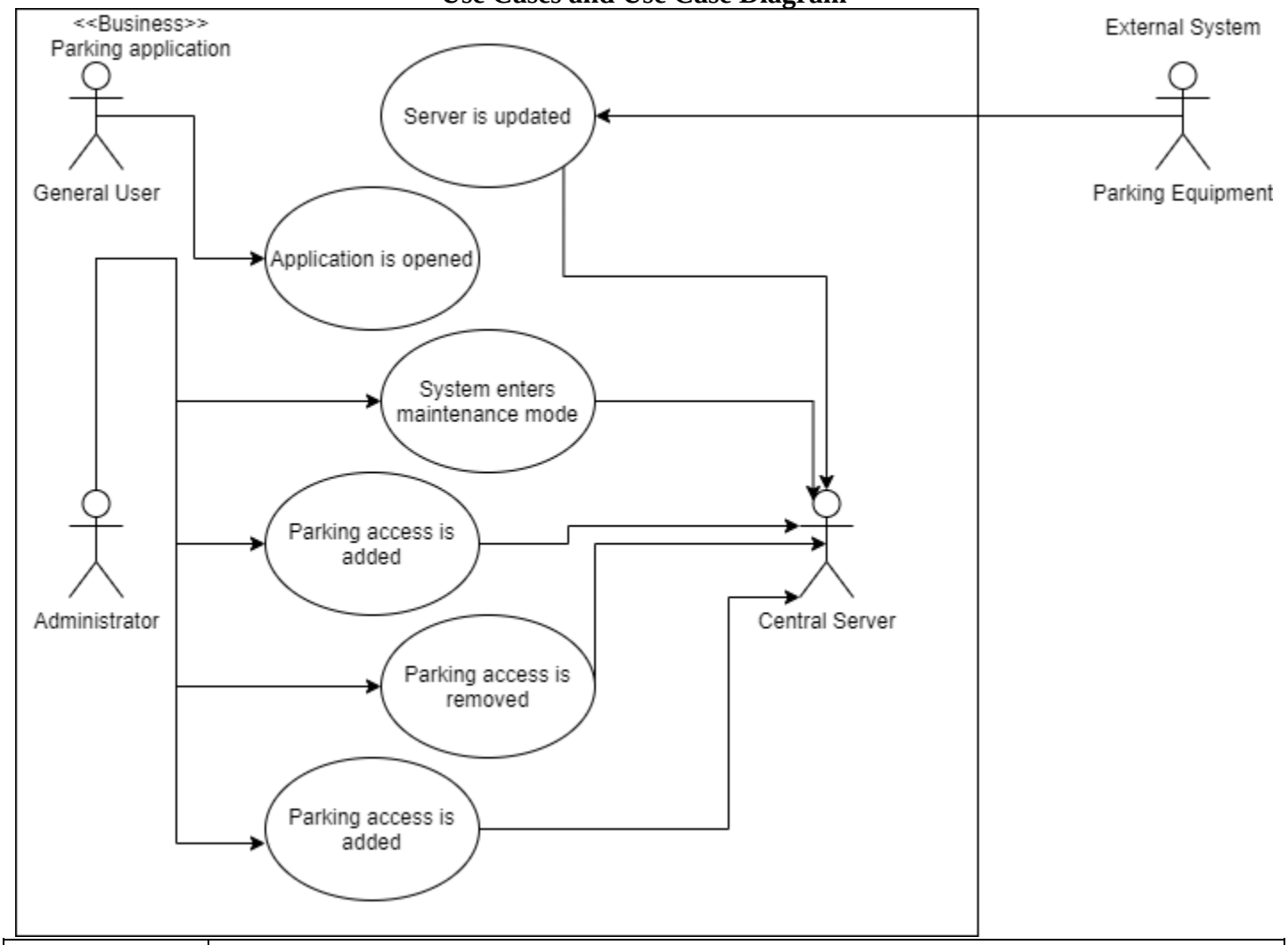
Use Cases and Use Case Diagram



UC ID and Name	BCHUC-1 Server is Updated
Description	The server will query parking equipment to keep parking information as up to date as possible. The frequency at which the server contacts parking equipment may vary, but should happen no less frequently than every 10 minutes to keep information as real-time as possible.
Actors	Central Server, Parking Equipment
Trigger	An interval of time passes, e.g. 5-10 minutes
Preconditions	PRE-1. Central server is available and online PRE-2. Parking equipment is available and online
Postconditions	POST-1. Server updates parking information

Normal Flow	**1.0 Parking information is updated** 1. The server connects to parking equipment of all relevant public parking accesses and receives information back, including the number of spaces available 2. The server stores this information and waits for clients to connect 3. When a client connects, it sends this updated information
Exceptions	**1.0.E1 Central server is down** 1. The server fails to connect and parking information is not updated 2. Use case is terminated **1.0.E2 Parking equipment is down** 1. The server fails to connect and parking information is not updated 2. Use case is terminated

UC ID and Name	**BCHUC-2 Application is Opened**
Description	A user accesses the system via an application on their mobile device. The application displays parking information for any relevant parking accesses in the Town of Fort Myers Beach area.
Actors	User, Central Server
Trigger	A user opens the application on their mobile device
Preconditions	PRE-1. User has internet and location access PRE-2. Central server is available and online
Postconditions	POST-1. Application displays parking information
Normal Flow	**2.0 Parking information is displayed** 1. Application is opened and a loading screen appears. 2. System connects to a centralized server containing parking information gathered from parking equipment 3. Server sends relevant information for parking accesses back to the system 4. System displays a summary parking information in a set order (by distance [if location permissions are granted, else see 2.1], capacity, etc.) in the form of cards 5. From here a user may press on a parking access card to view more information or simply see the summary and terminate the application

Alternate Flows	**2.1 Parking information is displayed with less permissions** 1. The user has not granted the application location permissions, so no information regarding location is displayed 2. Return to 2.0.4 **2.2 Last stored parking information is displayed** 1. The user was unable to retrieve the most up-to-date information, so the last information stored on the device is used 2. The user is warned this information is from <date> and is not current 3. Return to 2.0.4
Exceptions	**2.0.E1 User does not have internet access** 1. Application informs the user they do not have internet access so parking information cannot be updated, displays a try again button 2. If the user presses cancel, the use case terminates 3. Else if the user presses try again, the use case starts from 2.0.2 **2.0.E2 Central server is down** 1. Application informs the user the central server is down and they may need to try again later 2. Parking information is displayed from 2.2 3. Use case is terminated **2.0.E3 System is in maintenance mode** 1. If the system is down for maintenance, the application informs the user of this 2. Parking information is displayed from 2.2 3. Use case is terminated

UC ID and Name	**BCHUC-3 System enters maintenance mode**
Description	A system administrator may activate or deactivate maintenance mode if the system requires maintenance or updates.
Actors	System Administrator, Central Server
Trigger	System Administrator uses control panel to enter maintenance mode
Preconditions	PRE-1. System is not currently in maintenance mode PRE-2. Central server is available and online
Postconditions	POST-1. System is in maintenance mode

Normal Flow	**3.0 System enters maintenance mode** 1. Administrator uses the control panel and activates maintenance mode 2. Administrator is prompted to enter a necessary password 3. System stops sending information to clients 4. The system can now undergo updates/maintenance
Exceptions	**3.0.E1 System is currently in maintenance mode** 1. Control panel informs the administrator that the system is already in maintenance mode and no changes have occurred 2. Use case terminates **3.0.E2 Central server is down** 1. Control panel informs the administrator the central server is down and requires attention 2. Use case is terminated **3.0.E3 Password is incorrect** 1. Administrator is informed the password is incorrect and they must try again or cancel 2. When try again is selected they return to 3.0.2 3. After canceling or a certain number of attempts the use case terminates

UC ID and Name	**BCHUC-4 Parking access is added**
Description	A system administrator may add a new parking access to the system for the server to keep track of. This may require the system to go down temporarily.
Actors	System Administrator, Central Server, Parking Equipment
Trigger	Administrator uses control panel to add parking
Preconditions	PRE-1. Central server is available and online PRE-2. New parking equipment is available and online PRE-3. System is currently in maintenance mode
Postconditions	POST-1. Server now tracks information of a new parking access

Normal Flow	**4.0 New parking access is added** 1. Administrator enters information about parking access 2. Administrator is prompted to enter a necessary password 3. Central server attempts to contact new parking equipment 4. If successful, the parking access information is added to a repository 5. The new parking access is queried for information at regular intervals and is displayed on the application, if applicable (see 4.1)
Alternate Flows	**4.1 New parking access is added with limitations** 1. The new parking information is added to the central repository and is queried for updates, but is not yet displayed on normal user devices
Exceptions	**4.0.E1 Central server is down** 1. Control panel informs the administrator the central server is down and requires attention 2. Use case is terminated **4.0.E2 Parking equipment is not online** 1. Control panel informs the administrator the new parking equipment could not be connected to and requires attention 2. Use case is terminated **4.0.E3 System is not in maintenance mode** 1. Administrator is informed the system is not currently in maintenance mode 2. Administrator is asked if they would like the system to enter maintenance mode 3. If so, see 3.0 and then return to 4.2 4. Else, use case is terminated **4.0.E4 Password is incorrect** 1. Administrator is informed the password is incorrect and they must try again or cancel 2. When try again is selected they return to 4.0.2 3. After canceling or a certain number of attempts the use case terminates

UC ID and Name	**BCHUC-5 Parking access is removed**
Description	A system administrator may remove a parking access from the system. This may require the system to go down temporarily.
Actors	System Administrator, Central Server
Trigger	Administrator uses control panel to remove parking

Preconditions	PRE-1. Central server is available and online PRE-2. System is currently in maintenance mode
Postconditions	POST-1. Server no longer tracks information of a parking access
Normal Flow	**5.0 Parking access is removed** 1. Administrator selects the parking access to remove 2. Administrator is prompted to enter a necessary password 3. If successful, the parking equipment is removed from the central repository and the server no longer tracks it
Exceptions	**5.0.E1 Central server is down** 1. Control panel informs the administrator the central server is down and requires attention 2. Use case is terminated **5.0.E2 Password is incorrect** 1. Administrator is informed the password is incorrect and they must try again or cancel 2. When try again is selected they return to 5.0.2 3. After canceling or a certain number of attempts the use case terminates **5.0.E3 System is not in maintenance mode** 1. Administrator is informed the system is not currently in maintenance mode 2. Administrator is asked if they would like the system to enter maintenance mode 3. If so, see 3.0 and then return to 5.1 4. Else, use case is terminated

UC ID and Name	**BCHUC-6 Parking access is updated**
Description	A system administrator may update a parking access in the system. This may require the system to go down temporarily.
Actors	System Administrator, Central Server
Trigger	Administrator uses control panel to update parking
Preconditions	PRE-1. Central server is available and online PRE-2. System is currently in maintenance mode
Postconditions	POST-1. Parking access information is updated on central repository

Normal Flow	**6.0 Parking access is updated** 1. Administrator selects the parking access to update 2. Administrator updates any relevant information 3. Administrator is prompted to enter a necessary password 4. If successful, the parking equipment is updated in the central repository
Exceptions	**6.0.E1 Central server is down** 1. Control panel informs the administrator the central server is down and requires attention 2. Use case is terminated **6.0.E2 Password is incorrect** 1. Administrator is informed the password is incorrect and they must try again or cancel 2. When try again is selected they return to 6.0.3 3. After canceling or a certain number of attempts the use case terminates **6.0.E3 System is not in maintenance mode** 1. Administrator is informed the system is not currently in maintenance mode 2. Administrator is asked if they would like the system to enter maintenance mode 3. If so, see 3.0 and then return to 6.1 4. Else, use case is terminated

Key	Summary	T
BCH-5	The system will likely require device access to the internet, other device permissions should be minimized.	
BCH-4	The system should not require access to any user data through the application, other than possible location.	
BCH-3	The proposed system must not be in violation of or impeding any of the necessary parking compliances or parking enforcement procedures.	
BCH-2	Documentation of vehicle monitoring may be required.	
BCH-1	Ensure monitoring vehicles and parking does not violate laws.	

5 issues

4. Verification

Key	Summary	verification approach
BCH-55	The system shall integrate with other applications (e.g. Google Maps) to allow users to navigate to specific accesses easily.	Demonstration
BCH-54	The system shall store data in a secure manner and backup data to external servers.	Analysis
BCH-53	The system shall attempt to minimize excess internet usage, especially when devices are not connected to wifi.	Test
BCH-52	The system shall provide users with a way to customize certain aspects of the application.	Demonstration
BCH-51	The system shall provide users with easy to navigate menus and descriptive input information.	Inspection
BCH-50	The system shall provide adequate feedback upon user input.	Inspection
BCH-49	The system shall accommodate light and dark themes of devices.	Demonstration
BCH-48	The system shall display beach parking accesses in a list and upon interacting with each item a more detailed view.	Inspection
BCH-40	The system shall require few device permissions and low computational power to display information.	Test
BCH-39	The system shall be developed to work on a wide array of devices to allow as much of the public to use it as possible.	Analysis
BCH-38	The system shall be able to easily accommodate new parking accesses and update existing ones.	Demonstration
BCH-37	The system shall utilize a central server to keep information accurate and consistent across a large number of devices.	Test
BCH-36	The system shall avoid tracking private parking accesses or cause strife for those attempting to use them.	Analysis
BCH-35	The system shall accommodate both parking passes and purchased parking access.	Demonstration
BCH-34	The system shall monitor parking times for certain parking accesses.	Test
BCH-33	The system shall accommodate both older users and users with disabilities.	Inspection
BCH-32	The system shall have power surge and lightning protection to minimize time necessary for maintenance and repairs.	Test
BCH-31	The system shall update parking information in real-time.	Analysis
BCH-30	The system shall display the parking information on a mobile application interface.	Demonstration
BCH-29	The system shall integrate with existing parking equipment to receive parking information.	Analysis

20 issues

5. Appendices

5.1 Assumptions and dependencies

Some assumptions being made related to the software include:

- The software will easily integrate with existing parking equipment
- The current equipment will have the ability to transmit parking information in real-time
- Vehicles will be able to be tracked by parking equipment
- The public will not oppose “tracking” of their vehicles
- Traffic congestion will be decreased as a result of increased parking knowledge
- Users will use the parking information before attempting to visit a parking access
- The application will not interfere with the jobs of maintenance or security personnel
- The current parking equipment will be accurate for how many parking spaces are available
- The current parking equipment will have the ability to take parking passes into account
- The ability to accommodate new parking equipment/spaces is not significantly difficult
- The system will be able to be maintained and have a high uptime when needed

5.2 Acronyms and abbreviations

RFP - Request for Proposals - a document requesting the acceptance of a proposed idea