**PLeaze**

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**BCS430W: Senior Project (Writing Intensive)**

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# Description of the Project

Our project's main intention was to tackle common issues and stress that can come with the task of parking. Our team utilized our own experiences to come up with an application that consisted of features that would be useful for those who struggle with parking daily. However, we made sure our application was usable by those who needed a spot every now and then. The inspiration came from the common issues most people endure when parking, especially in a busy or highly populated area. Because of this, we thought of a solution that would be usable by many and easy to keep track of. Our solution was to create a service that allowed users to know what an area looked like before even leaving their location. The price of being able to view a certain location would come in the form of a fee that is charged when someone completes the use of our service. For example, a user can view available or unavailable spots and not park and they will not pay a fee. If a user needs a spot for a particular time in a particular area, they can reserve a spot to ensure a space will be available for them when they arrive. If more and more people use it, we can keep track of all parking spots in a particular area. This will give our team an idea on where to put those who need a parking spot. However, for the time being, the idea behind our success is to start small and allow people to become comfortable with the use of reserved/systematic parking. Once people are fond of the service, we can branch out to other locations and apply the service to a larger scale, like we mentioned earlier. Now, since the main component of the service is the application, getting users used to utilizing it will make or break the success of our product. The good news is that we have made our application extremely accessible and simple so people cannot get lost. Once users realize the beauty of planned parking, they will have no choice but to use it. From there, we can utilize the information to expand our service and maximize our profit. At the same time, we'll be making parking much easier for the rest of the world.

# GitHub Link to Download Application

https://github.com/leuenroo/PLEAZE

# Final Backlog

## **Committed Stories**

1. As a user of this application, I want to be able to figure out what my account balance is, so I can add more funds if need be
2. As a user of this application, I want to be able to see how long my car has been parked, so I can see how much I will be charged
3. As a user of this application, I want to be able to sign out of my parking space, to avoid being charged additionally
4. As a user of this application, I want to be able to sign out of my account, so my friend can login with his account
5. As a user of this application, I want to be able to login into my account, so I can get to reserving a parking space.
6. As a user of this application, I want to be able to create an account, so I can login whenever I need to.
7. As a user of this application, I want to be alerted of an error if I input something incorrectly in a particular field.
8. As a user of this application, I want to be able to add funds to my account with ease.
9. As a user of this application, I want to be able to edit a credential if I need to change something.
10. As a user of this application, I want to be able to reserve a spot ahead of time, so I can ensure there will be a spot waiting for me.
11. As a user of this application, I want to be able to check availability to see if spots are open.
12. As a user, I want to pay for the exact amount of time I use, to lessen the amount of overpaying on time I don’t need.
13. As a user of this application, if I have a reservation, I want to be able to park the minute I arrive at the lot.
14. As a user of this application, I want to check the availability, so I can make sure I make it to work on time.
15. As a user of this application, If I have available funds to pay for the service, I want to have the ability to park for an extended period.

## **Stretch Stories**

1. As a user of this application, I want to be able to access different parking lots that allow me to use this service.
2. As an electric vehicle driver, I want to receive discounts on certain spots, that charge my car as I pay for the time.

## **Fantasy Stories**

1. As a user of this application, I want to be able to view the complete history of my previous parking.

# Retrospectives

### **Retrospective (1)**

Table

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### **Retrospective (2)**

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### **Retrospective (3)**

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### **Retrospective (4)**

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### **Retrospective (5)**

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# Interface Prototype Sketches and Description

### **Sketch**

* + Create an account
  + [Username] [Password] [Email] [Phone #]
  + Login page (Don’t have an account yet? Sign up now!)
  + [Username] [Password]
  + [Create Account] [Sign In]
  + Home page (Logo, PLeaze park your car with ease!)
  + Subsections: Peak Hours: +$0.50, HOT Deals!: -$0.20 (lower rates or something
  + with pricing change), Reservation,
  + Reservation page (Don’t take the chance! Book your spot in advance!)-Calendar Button: Opens calendar view (allow users to pick date, time, and
  + location) Users click confirm.

### **Description**

For user interface, we created a Log In home screen where you enter the credentials you used

when creating the account for our application. We incorporated a color scheme of bright blue and purple as well as a font size/style, so our application is legible. Our application will indicate the parking availability within the user’s current location. This location gives the user an estimated address that displays parking spots whether they have been reserved or requested.

# Original User Interface

Graphical user interface, application

Description automatically generated

Our original user interfaces really set the scene for what we wanted to do. Our application looks much simpler than this, however, it performs the same why we wanted this mockup to. The first screen shows how we intended our user to login or sign up. The second screen shows our intention for the availability screen as well as the reservation screen. Our current model has those two features on differing screens, but they do go hand in hand. Truthfully, we think our group has come a long way and we could not be more excited and prouder of the work we accomplished.

# 

# Context and Data Flow Diagrams

### **Context Diagram**

Diagram

Description automatically generated

Users can input their personal and payment information to create an account and receive an account ID. They can request parking to receive a spot number to park in. Availability can be checked and is based on people parking and leaving. Users can reserve parking in advance. We receive peak hours based on parking times with high volume. Our Parking lot will have designated premium parking spots that can charge a higher rate.

### **Create an Account DFD**

Diagram

Description automatically generated

When creating an account, users input their personal and payment information. They are then given an account and unique account ID. Their account is added to our database

### **Parking DFD**

Diagram

Description automatically generated

Customers can request a spot to park in and they are given an available spot. That spot is then taken up in our database. When they are done parking, the spot frees up for other users.

### **Availability DFD**

Diagram

Description automatically generated

Users can request availability before they go to park. We get that information based on people parking and leaving.

### **Reservation DFD**

Diagram

Description automatically generatedTo reserve spots, users request a spot in advance, and they are given a spot that has not been given out to other people who reserve or regular users. When the user arrives, their spot will be available for that user and that user only.

### **Premium Parking DFD**

Diagram

Description automatically generated

Some spots will have a premium option that are very close to their destination. Users can pay a slightly higher rate to access these spots.

### **Payment DFD**

Diagram

Description automatically generated

For our payment DFD, the user parks. Their timer begins. When they unpark, the time spent in the lot is multiplied by the current rate. That amount is than deducted from the users funds.

# Entity Relationship Diagram

Diagram

Description automatically generated

In our ERD our entities are customer, session, parking lot, and spot. IDs will all be int values. Names, phone number, address, and email address are all strings. Premium and available in the spot entity are boolean values, representing whether that specific spot is a premium parking spot and whether it is available to be given out or not.

# Completed Test Plans

## **Given, When, Then**

Graphical user interface, text, application

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**Initial In-class testing**

For our initial In-class testing, our application failed three out of the fifteen stories or plans we created. The numbers failed were number 8, number 12, and number 15. If you notice, all the three that were incomplete related to reservation. This is because during this time, we had not completed all the functions.

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### **Final Testing Results**

However, if you look at our results compared to our test plans, you will see we have completed each of the tasks we set out to complete. If you look at our presentation, you will see our results in live time.

A picture containing text, building

Description automatically generated

# Completed System Images

### **Register Screen**

This allows our users to create an account. This is the window into them getting a feel for our application. Once an account is created, they will be free to login and out as they please.

Graphical user interface, application

Description automatically generated

### **Login Screen**

This screen allows the users who have an account to login into it. It also allows for users without an account to create one. These two screens go hand in hand.

Graphical user interface, application, Teams

Description automatically generated

### **Home Screen**

This is the main component of our application. It is where users can access our other functions such as reservations, availability, etc. Not only that, but it also allows our users to park (regular or premium).

Graphical user interface, application, Teams

Description automatically generated

### **Reservation Screen**

This screen allows users to book or reserve reservations ahead of time. This can only be accessed through our home screen. Once you create a reservation, you can go back to the home page by clicking “home”.

Graphical user interface, application

Description automatically generated

**Availability Screen**

Allows our users to check our current availability status in the parking lot. They can then make decision to book a reservation or parking at the lot using our regular service.

Graphical user interface

Description automatically generated

# Final Team Retrospective

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### **What We Have Learned**

Our group has learned how to work together well with new people. Each of our members had differing skills that we had to work around. This allowed for our group to learn off one another and get an overall perspective of each component of our application. We realized that working in the work force isn’t all about completing one set assignment for the entire project. Instead, different people work together on the same goal which results in a well-rounded product, application, or service. This project was certainly the closest thing most of us have had when it comes to being left alone to complete a project. We had little guidance and were free to do what we wanted. This style of teaching was more impactful than anything we could have learned in a classroom. It teaches us how to work around certain problems that we wouldn’t initially expect. When doing such a project, you really must consider each aspect of what the user may want and what you are trying to accomplish. Sometimes things don’t work according to plan but being able to shift ideas from one possibility to the next is a recipe for success. We all feel that this project left us with a unique view into what we should expect coming out of college.

# Citations for Pre-Written Code

### Works Cited

<https://www.geeksforgeeks.org/find-the-duration-of-difference-between-two-dates-in-java/>