# ParQ - The Parking Finder App

# Abstract

*Nowadays, finding a parking spot in big cities is a big problem for the car owners. Sometimes it will waste a lot of time to find a place to park vehicles when people have plans to visit somewhere like downtown. Therefore, people in need of a system that can help them to find available parking spots near their destinations. And this system will help users to find parking spots without any charges, no matter where they are.*

# 1.0 INTRODUCTION

*In order to finish the problem about finding parking spots for the car owners, our project will provide services to guide users finding appropriate places to park their vehicles for free. The system will show how much parking near them as well as the rates. Users can easily register an account, and all they need to do is download the app and they can start using it.*

## A. Executive Summary

*The ParQ mobile application will enable drivers to find available parking and rates with just their mobile device, rather than the traditional method of driving around in the hopes of being lucky. Drivers will be able to search and find available parking in their vicinity or by destination address with just a few clicks. The target audience for this software includes drivers looking for parking for work purposes, during errands or on vacation in another city. The ParQ mobile application allows drivers to find the best parking spot in the most convenient location.*

*Additionally, parking vendors (proprietors of parking spaces/lots) will be able to increase their public exposure and client base through the use of the ParQ mobile application. Vendors will be able to register their parking locations, extending their exposure from proximity and signage to include the entire ParQ user base.*

## B. Business Objectives

#### 1. Business Need/Opportunity/Objectives

*Any city must have enough parking spaces so their residents and visitors can park their cars; City Parking Authorities have collected billions in parking fines based on this simple premise. But even though living and driving in a big city might come with many perks, one of the main issues a driver will encounter is the difficulty of finding a good spot close to their destination, at a reasonable rate.*

*So how does a driver find their ideal parking spot? Apart from the time-consuming task of driving around looking or knowing beforehand, the methods are quite limited. Even more so for drivers already on the go.*

*ParQ will completely remove the need to drive around looking for parking, hoping for another driver to vacate a spot. Our vision is to be the go-to app for drivers that are looking to park their vehicles or to just research rates. ParQ will surely help drivers to move about their cities with much more delight than they ever have before, without the added stress of where to park their cars.*

*While ParQ will empower drivers by saving their time, it will also empower parking vendors as well. By providing a platform for parking vendors to increase their exposure, client base and traffic, ParQ will be an ecosystem that benefits drivers as it increases revenue for parking vendors.*

*Benefits:*

* *Less time & energy spent finding a parking spot.*
* *Optimized parking spaces*
* *Reduced traffic, pollution and stress*

#### 2. Product Description (Solution)

*The ParQ mobile application provides drivers a convenient means of finding and browsing available parking and rates, by either location or address. ParQ acts as an aggregator, compiling and returning available parking details from our base of registered parking vendors and from sources such as Google Maps and parking companies like GreenP. ParQ also includes Google Maps API integration to guide drivers to parking spots based on the user's location.*

*Parking vendors will be able to register to create accounts through a parking vendor registration process. Parking vendor accounts will allow them to post their parking locations on ParQ. The registration process for parking vendor account creation is managed by the application admin. The admin is in charge of approving parking vendor account registrations and activating posting priveleges.*

#### 3. Deliverables

Deliverables include:

* *UI Design*
* *Final Product*
* *Working Prototype*
* *System Architecture Documents*

Deliverables exclude:

* *Training to end-users*
* *End-User Documentation*

## C. Project Description

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#### 1. Scope

**Includes:**

* *Parking aggregation tool for compiling available parking locations, including rates*
* *A database for registered users, registered parking vendors and admin*
* *Parking vendor accounts have CRUD functionality for parking locations, while admin has CRUD functionality on accounts and privileges.*
* *Connection to multiple parking companies’ API to get parking data*
* *Geolocation for finding of, and guidance to nearest parking locations*

**Does Not Include:**

* *Web Application*
* *Payment Processing*

#### 2. Completion Criteria

*A working mobile application that can successfully do the following:*

* *Aggregated search for parking by address or location*
  + *Without errors, query and return nearby parking location data from parking vendor database*
  + *Without errors, query and return nearby parking location data from external sources*
  + *Without errors, aggregate and display results from parking vendor database and external sources*
* *Login system for users (drivers), parking vendors and admin*
  + *The database is working if the required CRUD functionality for parking vendors and admin is error free*
  + *CRUD functionalities enabled for admin to manage user accounts (driver & vendor)*
* *A database for parking locations, editable by parking vendors and admin*
  + *CRUD functionalities enabled for parking vendors to manage their parking locations*
  + *CRUD functionalities enabled for admin regarding parking vendor accounts*
* *Connection to multiple parking companies’ API to get parking data*
  + *Return search results for parking locations from respective external sources*
  + *Aggregate search results for parking locations from external sources and return them*
* *Use of Geolocation of the general user*
  + *Find the nearest parking options based on the user’s location*

#### 3. Measures of Project Success

*The success of ParQ will be determined by the administration of load testing to see how the application performs using open source testing tools.*

* *If the ParQ mobile application can handle over 100 concurrent users accessing the database. This can be tested using Apache JMeter.*
* *If the ParQ mobile application is able to return and display search results in under 10 seconds under heavy load. This can be tested using Apache JMeter.*

*In addition, other criteria to be applied include:*

* *Project Team satisfaction*
* *Project meets quality target*

## D. Project Approval Form

I, George Kougioumtzoglou, have reviewed the information contained in this document and approved the project proposal.

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Signature Date