ParkODU

Group Gold Fall 2017

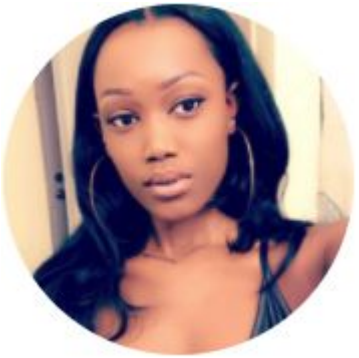
CS 410

November 2nd 2017

The Awesome 8

“We are so awesome”

Cody
Project Manager



Imani
Marketing
Technologist

Sangeet
Business Analyst

Isaac
User Experience Designer

Michael
Web Analytics Developer

Ahsif
Content Manager

Gerard
Sr. Software Engineer, Software Lead

Matthew
Software Engineer, Deployment Lead

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Background

- “Parking at ODU sucks, there are not enough spaces for everyone and if you are a commuter you better get to class an hour early if you want a spot. It is like The Hunger Games for parking spaces. May the odds be ever in your favor.” (1)

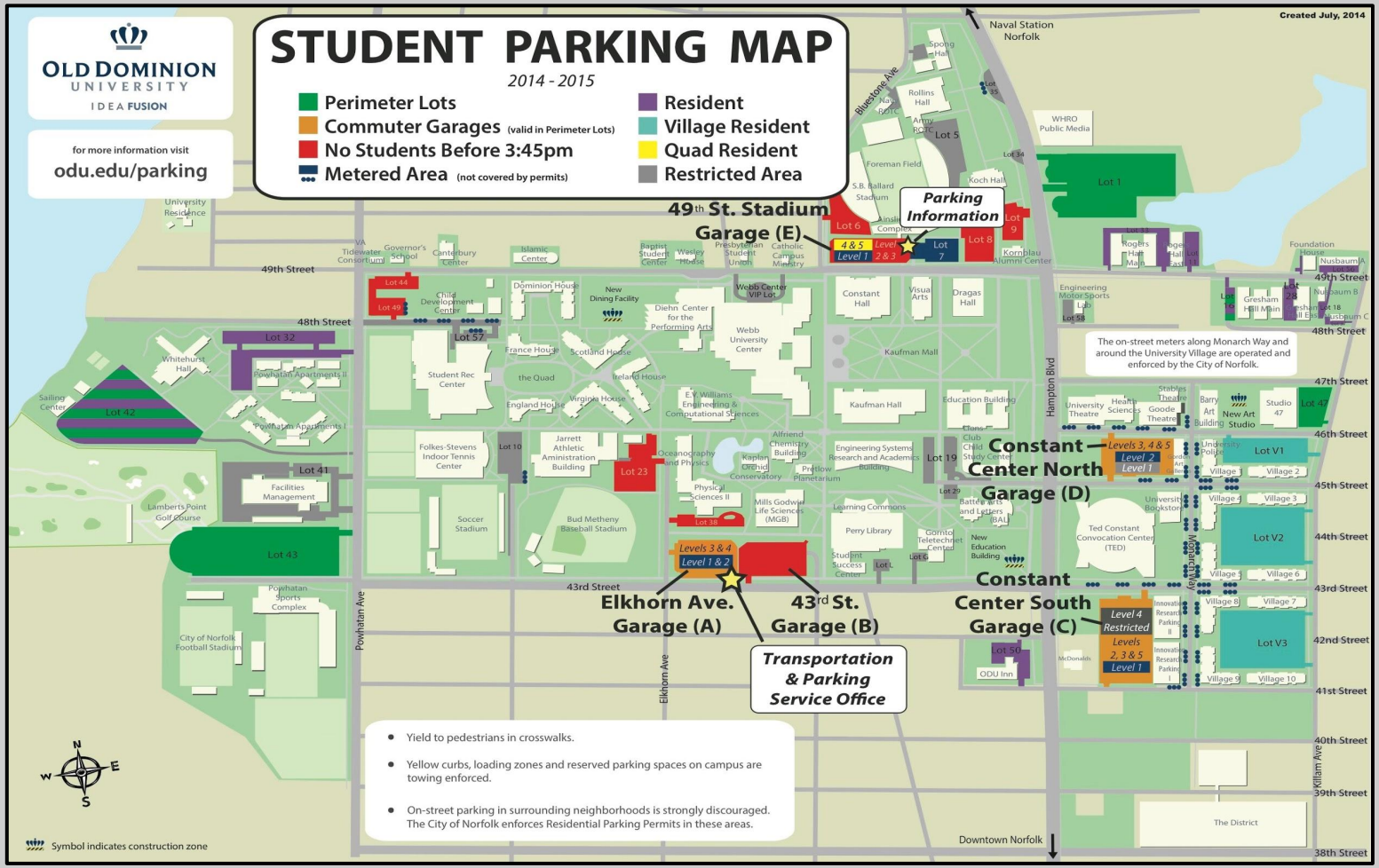
- “According to Old Dominions school site, last year’s enrollment at Old Dominion was 24,828 students. Around 76% of students live off campus, this also includes students who take classes online, but out of this 76%, the majority of the group do commute.” (2)

- Roughly 9,400 student commuter driver need to park at ODU daily
- 1511 Faculty Members (835 Full Time, 676 Part Time) (3)

- 5 Parking Garages (~3013 spaces) (4)
  ~37% Faculty (1115 spaces)
  ~26% Metered (783 spaces)
  ~33% Commuter (994 spaces)
  ~9% Other (121 spaces)

Why Not Build More Garages?

- 2017 proposed budget aims for $5.572 million revenue surplus [5]
- National average to build a parking garage is $8.56 million(~$35-65 per sq. ft.) [6]
- Geographic constraint
- Priority of building additional academic facilities over parking structures



F.1.

Problem Statement

The current state of ODU parking demands a more efficient method to utilize existing parking without building additional parking garages. Without improvement, drivers experience difficulty finding parking spaces, during the hours of 10:00AM - 2:00PM, due to:

- the lack of signage and notifications for available spaces,
- preferences for specific parking locations,
- and limited choices during peak hours.

F.2.

Customer

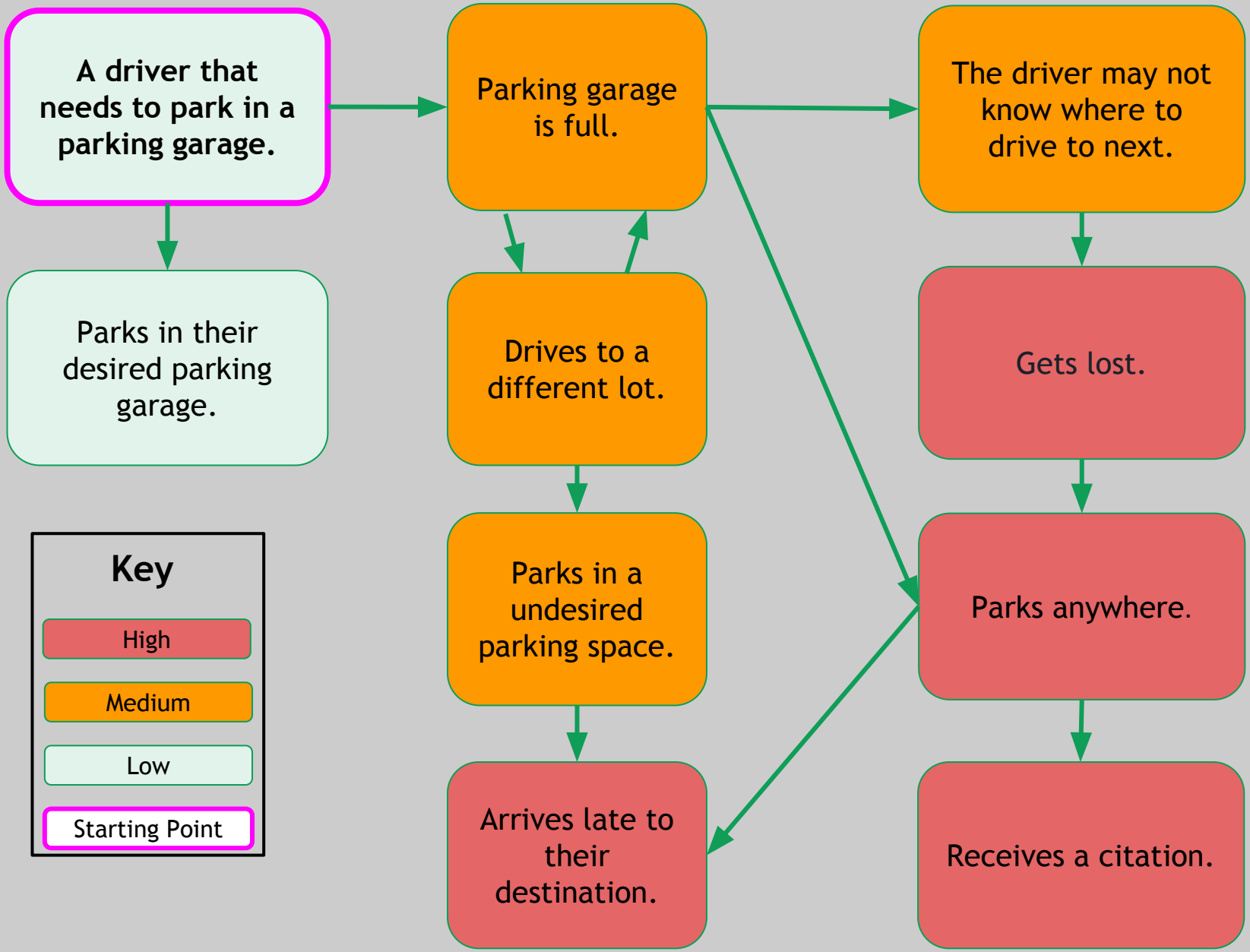
The customer is Scott Silsdorf along with his team. He is the the Director of Transportation & Parking Services for ODU. He is the primary decision-maker for purchasing any solutions for ODU garages and lots.

End Users

The end users who will benefit from our web application are any drivers that need to park at ODU:

- Students
- Faculty
- Other visitors

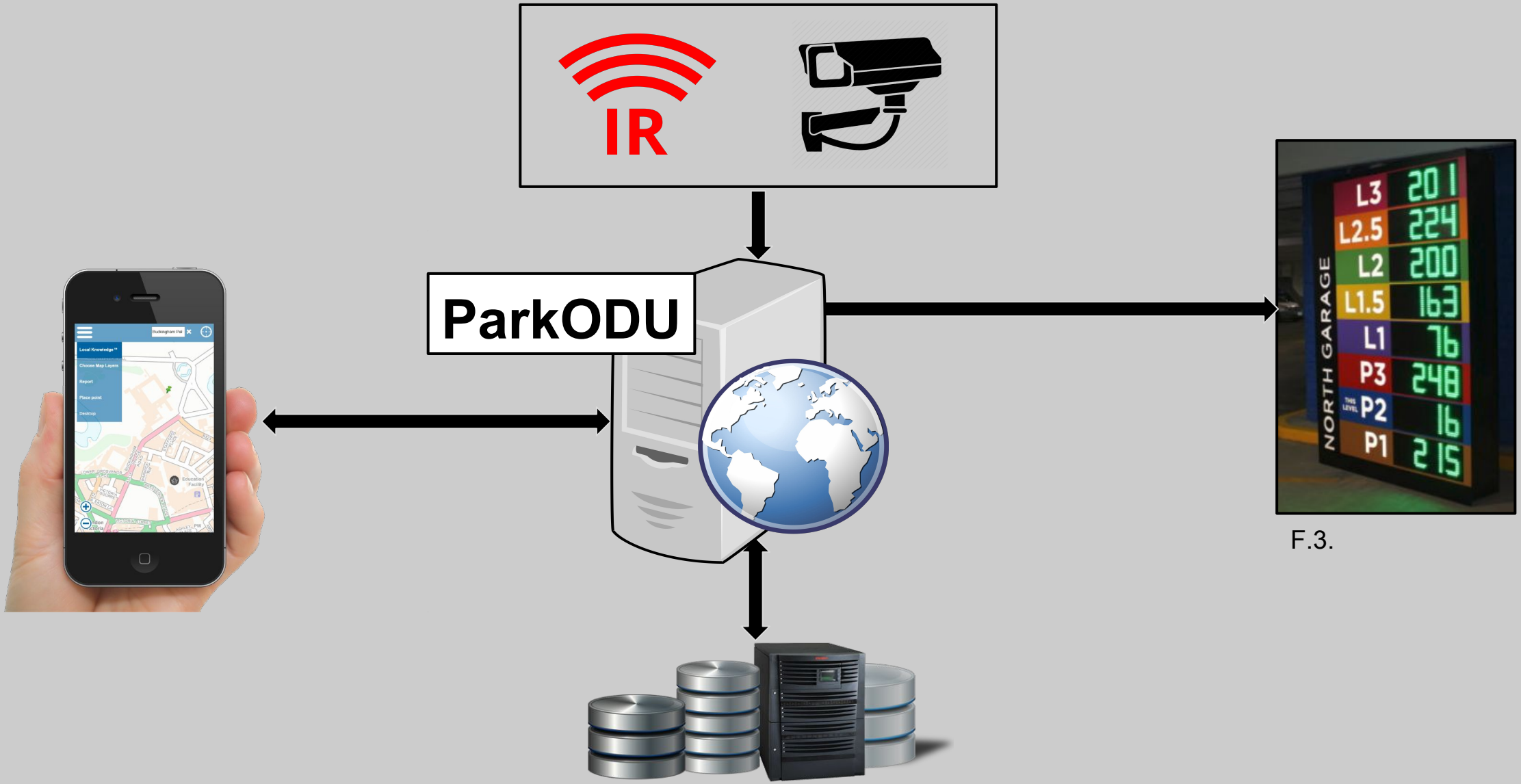
Current Process Flow



The SolutionL ParkODU

A software solution that analyzes parking availability in real-time and helps drivers find the vacant parking space closest to their destination

Major Functional Components



F.3.

Out of the Box Requirements

- Customer will need vehicle detection technology.
- Customer may need parking garage signs to display garage occupancy (Not Required)
- Application must be hosted on a server (Physical or Virtual).
- MongoDB will be the supported database.
- Application server and user application will be open-source and downloadable http://www.cs.odu.edu/~410gold/download.

Floor Plan / Demo

ParkODU

ParkODU Search... Dashboard Settings Profile Help

Garages

Garage A: Elkhorn Avenue

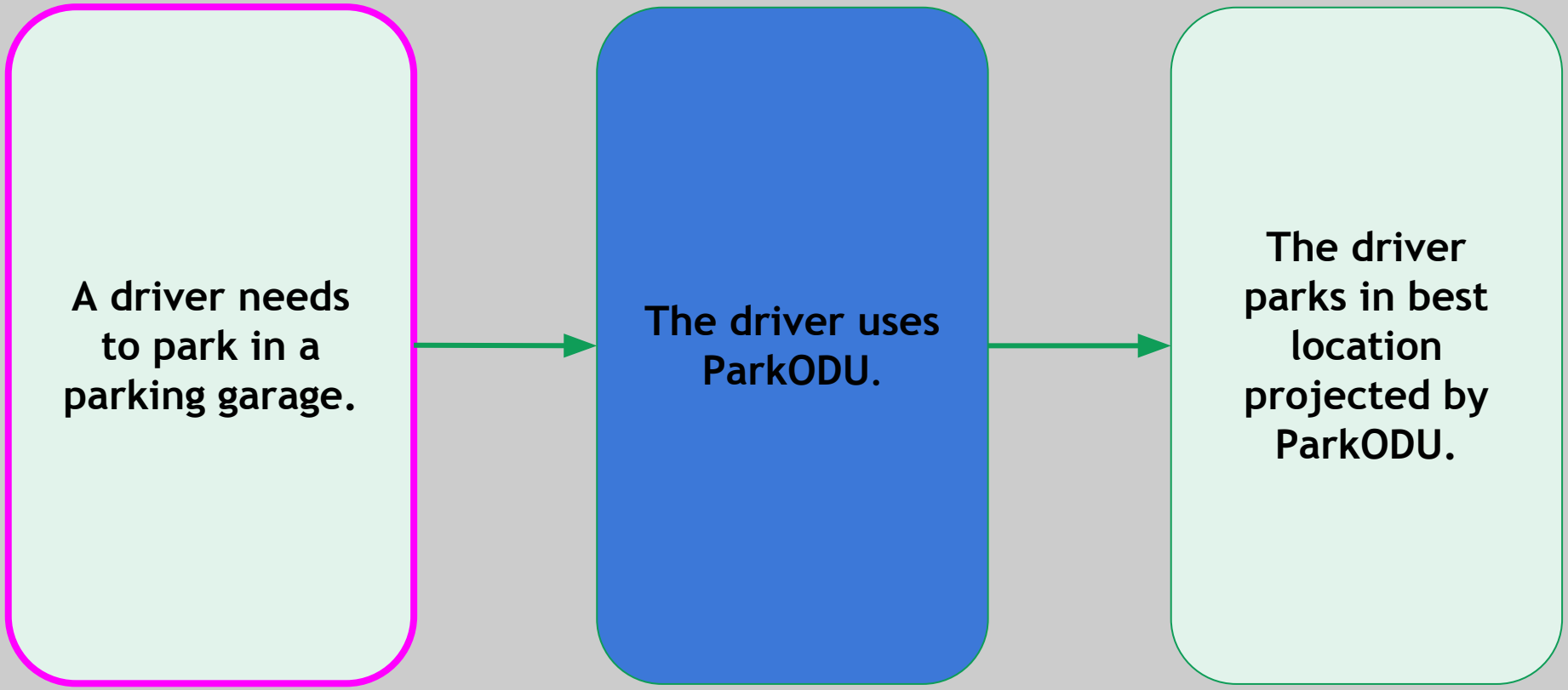
Last Updated: Mon Oct 30 20:56:51 EDT 2017

Total Available Spaces 4
Total Spaces 648
Capacity 99.38%
Description Located at the corner of 43rd Street and Elkhorn Avenue. The garage is zoned for meter parking and commuter students. There are meter spaces located on 1st and 2nd levels that are controlled by multi-space meters located at the pedestrian exit in the northeast corner of the facility. When parking in a metered space, you must pay the pay station before leaving the garage as soon as you park your vehicle. Each parking space is individually numbered. Enter the space number at the multi-space meter when you pay.

Note: The FloorKey column is for testing purposes only.

Floor	Description	Available Spaces	Capacity
Level 1	Metered Parking	3	98.15%
Level 2	Commuter / Commuter Parking	0	100.0%
Level 3	Commuter Parking	0	100.0%
Level 4	Commuter Parking	1	99.38%

Proposed Process Flow



Competition Matrix

Functionality	ParkODU	T2systems	PureTech	SWARCO	KiwiSecurity	Access Automation	JMU Parking
Vehicle Count by Garage	X	X	X	X	X	X	X
Vehicle Count by Floor	X	X	X	X	X		
Vehicle Count by Space	X						
Vehicle Count Anywhere				X	X		
Navigation	X	X					
Statistical Analysis	X	X		X	X	X	X
Occupancy Signage	X	X	X	X		X	
Mobile Application	X	X					X
Web Application	X	X					
Reconfigurable	X		X	X	X		
Low Cost	X		X	X	X		X
Vehicle Security/Intrusion Monitoring					X		
Import Event/Personal Schedule	X						

Competition Matrix: Counting

Functionality	ParkODU	T2systems	PureTech	SWARCO	KiwiSecurity	Access Automation	JMU Parking
Vehicle Count by Garage	X	X	X	X	X	X	X
Vehicle Count by Floor	X	X	X	X	X		
Vehicle Count by Space	X						
Vehicle Count Anywhere				X	X		

Competition Matrix: Navigating

Functionality	ParkODU	T2systems	PureTech	SWARCO	KiwiSecurity	Access Automation	JMU Parking
Navigation	X	X					
Occupancy Signage	X	X	X	X		X	
Statistical Analysis	X	X		X	X	X	X
Import Event/Personal Schedule	X						

Competition Matrix: Other

Functionality	ParkODU	T2systems	PureTech	SWARCO	KiwiSecurity	Access Automation	JMU Parking
Mobile Application	X	X					X
Web Application	X	X					
Reconfigurable	X		X	X	X		
Low Cost	X		X	X	X		X
Vehicle Security/Intrusion Monitoring					X		

ParkODU

To summarize, the application will:

- Compute vacancies in each parking garage in real-time
- Analyze past parking data for future decisions
- Find parking nearest to the user’s building on campus
- Send notifications of available spaces to the user
- Inform user of campus events that will impact parking
- Provide navigation to the garage
- Suggest parking spaces according to their schedule

Conclusion

ParkODU offers a complete solution for selecting a parking spot at ODU.

Our application will resolve frustrations from not knowing what garages are available, the lack of signage for appropriate garages, and the limited parking during peak parking hours between 10:00AM to 2:00PM.

Questions?

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