MonarchPark

Feasibility

Team Sapphire - CS 410 Spring 2016
Outline

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Meet the Team

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Mentor: Scott Silsdorf
Problem Statement

There is no system in place that allows staff, students, and visitors to know when a parking garage or lot has available parking or if it is full. This leads to a backup of traffic in the garages and lots which makes people late while trying to find available parking.
Counting System In Place

T2 Systems

- ODU knows that parking is a problem for many of its students and visitors.
- ODU contracted with **T2 Systems** to install hardware that tracks how many cars fill each lot.
- T2’s hardware is available as metal counting loops in select garages and lots.
- T2 does not develop custom mobile apps and websites for customers. An outside app would need to be integrated into the system.
The Customer

- **Developing for**
  - ODU’s Transportation and Parking Services Department

- **Used by**
  - ODU Staff
  - ODU Students
  - ODU Visitors
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Process Flow - Before MonarchPark

1. Customer travels to campus
2. Customer chooses a parking location based on permit type
3. Customer enters garage/lot
4. Customer searches for an available parking space
5. Customer continues an open space in that location
6. Garage/lot appears to be full
7. Customer leaves location for another garage/lot
8. Customer finds a spot and parks
New Technological Additions

- Metal counting loops installed
  - Lots 42 and 43
  - All levels of Garages A and D
- Yellow delineators installed to force drivers to go through correct loops
- Future plan for expansion throughout the campus
- T2 Systems
  - Occupancy reporting is already available where loops are installed. Only Scott Silsdorf has access to this information. (1)
Our Solution

- Website and mobile application
- Raw occupancy data pulled from T2 Systems
  - Accomplished with direct supervision of Transportation and Parking Services
- Information displayed on a map with a red, yellow, green indicator for each lot and each level of the garages. Below is Scott’s view of the data.
Our Solution

It is also our plan that staff, students, and visitors using the website or application will be able to narrow their view based on permit type. Parking location availability will be based on time of day (i.e. for the evening program).
Our Solution

Finally we plan to include lot/garage specific information such as height restrictions and enforcement hours.
Process Flow - After Monarch Park

- Customer travels to campus
- Customer consults app/website for available parking
- Customer chooses a parking location based on permit type and app/website data
- Customer enters garage/lot
- App/website are updated with new parking capacity information
- Customer searches for an available parking space
- Customer finds a spot and parks
Major Functional Component Diagram

- **Hardware**
  - Sensors in Garages A and D, Lots 42 and 43
  - User Cell Phone
  - Parking Servers
- **Software**
  - HTML, CSS, Javascript, Google API, T2 API
- **System with which the software will interface**
  - T2 Systems
What the Solution Will Not Do

- Staff, students, and visitors will not be able to reserve spots through the app/website.
- Staff, students, and visitors will not be able to pay for parking permits or resolve parking tickets through the app/website.
  - However, this is functionality that could be incorporated later since those processes are also performed through T2 Systems.
- Currently the solution will not provide forecasting.
  - T2 Systems is gathering this data.
  - This can be incorporated when the T2 counting system has been live longer and is installed in all parking locations.
## What is the Competition?

<table>
<thead>
<tr>
<th>Feature</th>
<th>MonarchPark</th>
<th>ParkMe (4)</th>
<th>Parkopedia (5)</th>
<th>StreetLine Parker (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration supported by T2 Systems</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Filtering feature on permit type</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Capacity reporting on actual counted data</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>ODU specific information (height restrictions, enforcement hours, etc)</td>
<td>Yes</td>
<td>Yes (inaccurate)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Features available on a website</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Features available in an app</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost of Hosting/Integration</td>
<td>Free *</td>
<td>$$$</td>
<td>$$$</td>
<td>$$$</td>
</tr>
</tbody>
</table>

* Free if website is hosted on ODU’s servers. $1-$15 a month for website hosting from GoDaddy if not hosted on ODU’s servers. (7)
References

1. Interviews with Scott Silsdorf, Director of Transportation and Services, and Alex Bockelman, Information Systems Coordinator.
2. ODU Interactive Campus Map [https://www.odu.edu/about/visitors/campus-map](https://www.odu.edu/about/visitors/campus-map)
4. ParkMe [https://www.parkme.com/los-angeles-parking](https://www.parkme.com/los-angeles-parking)
7. GoDaddy [http://tinyurl.com/gp5gf2u](http://tinyurl.com/gp5gf2u)
Questions?