Team: The Musketeers

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PROJECT PLAN

ParkingMaster

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Cost of Project

This project has minimized the monetary cost of the entire system by using both free software as well as free trials wherever possible. This means that the cost of the system is close to $0 even though we will rent a single web server and a single database from a cloud provider for the development of the system using their free tier. When the system is deployed, the size of the user base will determine if the web server and/or database need to be upgraded to a paid version.

The main cost of this project will come in man hours required for research, design, implementation, testing, and deployment. The overall time estimations for completing this project comes out to approximately 850 total man hours. These 850 man hours are divided amongst 5 separate sprints. If these sprints go according to the time estimations, then each of our 4 developers would have to average anywhere from 11 to 16 hours a week depending on the size of the sprint.

Risk Management

The largest risk to this project is that each functionality takes longer to implement than was initially estimated. This may occur for due to a lack of understanding of the technology stack or a lack of understanding of how to implement the functionality. Both of these may lead to research and design taking much longer. In order to reduce this risk, developers have been researching these items before the need to use the technology or the need to implement the functionality.

However, sometimes it is inevitable for something to go wrong, whether it be a functionality taking too long to implement or scope creep during the middle development. To help mitigate the damage this may cause, another safety buffer is in place to help ensure that the entire project is finished on time. This safety buffer is the final sprint has less planned man hours to allow for roll over from previous sprints or more importantly, we can better handle scope creep that may come up during the implementation of the project.

Time Estimations

The estimated time of individual tasks in our system, were determined by determining a realistic time the functionality would take to design, implement, and test. This realistic time was increased by 20% and then rounded up to the nearest Fibonacci number. This should hopefully provide a nice cushion for unforeseen circumstances.

As for error handling, while is is a separate functionality within the project BRD, error handling will be taken care of during the implementation and time estimations of other functionality so it should not be taken into account in the timeline or project roadmap because it is constantly being worked on. A time estimation for error handling was still provided representing how long it is believed to take if it was done all at once.

User Management

Functionality	Estimation (hours)
User Registration	55
User Vehicle Registration	34
Registration by Higher Level Account	55
Account Activation	13
Account Deletion	13
Account Configuration	21
Total	191

Security

Functionality	Estimation (hours)
Login	55
Compromised Password Check	21
Password Reset	21
Logout	34
Authorization	21
User Privacy	21
Total	152

Error Handling

Functionality	Estimation (hours)
Exception Handling	21
Total	21

Audit Management

Functionality	Estimation (hours)
Logging	21
Archiving	13
Total	34

System Analytics

Functionality	Estimation (hours)
Usage Analysis Dashboard	21
Total	21

Data Store Access

Functionality	Estimation (hours)
Data Store Structure	34
Data Access Layer	34
Data Restriction	13
Total	81

Documentation

Functionality	Estimation (hours)
Developer Documentation	13
User Manual	8
FAQ	5
Total	26

Reservation System

Functionality	Estimation (hours)
View Parking Lot Map	21
Reserving a Spot	34
Editing Reservations	21
Total	76

Lot Management

Functionality	Estimation (hours)
Adding Lots	21
Editing Lots	21
Editing Parking Spots	21
Total	63

Abuse Management

Functionality	Estimation (hours)
Submitting Reports	13
Viewing Reports	13
Verifying Reports	13
Fines and bans	21
Total	60

Payment System

Functionality	Estimation (hours)
Balance System	55
Charging System	34
Total	89

Notifications

Functionality	Estimation (hours)
Notification Center	21
Total	21

Favorites List

Functionality	Estimation (hours)
Managing Favorites	13
Favorite Parking Spots	21
Viewing Favorites	8
Total	42

Timeline

Sprint 1 (9/18/18 - 10/9/18)
BRD:	Complete
Tech Spec Doc	Complete

Sprint 2 (10/9/18 - 11/1/18)
Project Plan	Complete
High Level Design Doc	Complete
Revised BRD	Complete

Sprint 3 (11/1/18 - 12/6/18)
User Registration	55 hours
Account Deletion	13 hours
Account Configuration	21 hours
Login	55 hours
Password Reset	21 hours
Logout	34 hours
Compromised Password Check	21 hours
Total	220 hours

Sprint 4 (1/1/19 - 1/21/19)
Data Store Structure	34 hours
Data Access Layer	34 hours
Data Restriction	13 hours
User Vehicle Registration	34 hours
Reg. by Higher Level Acc	55 hours
Authorization	21 hours
Total	191 hours

Sprint 5 (1/28/19 - 2/20/19)
Lot Management:

	Adding Lots	21 hours
	Editing Lots	21 hours
	Editing Parking Spots	21 hours

Reservation System:

	Viewing Lot Map	21 hours
	Reserving a Spot	34 hours
	Editing Reservations	21 hours
Logging		21 hours
Archiving		13 hours
Total		173 hours

Sprint 6 (2/25/19 - 3/20/19)
Abuse Management:

	Submitting Reports	13 hours
	Viewing Reports	13 hours
	Verifying Reports	13 hours
	Fines and Bans	21 hours

Payment System:

	Balance System	55 hours
	Charging system	34 hours
Total		179 hours

Sprint 7 (4/1/18 - 4/24/19)

Account Activation		13 hours
Usage Analysis Dashboard		21 hours
User Privacy		21 hours
Notification Center:		21 hours

Favorites List:

	Managing Favorites	13 hours
	Favorite Parking Spots	21 hours
	Viewing Favorites	8 hours

Documentation:

	Developer	13 hours
	User Manual	8 hours
	FAQ	5 hours
Total:		144 hours

Project Roadmap/Milestones

The entire project is expected to be completed by the end of the seventh sprint. The current plan is to complete that sprint by April 24, 2019. The exact end date of the seventh sprint may fluctuate by a few days. However, the end of that sprint should mark a completed system.

As for judging the progress of the project as it is being developed, functionalities were grouped into major milestones where large components of the system are completed. These milestones have projected completion dates in parenthesis next to the milestone title.

1. Baseline Account Functionality (1/21/19)
    a. User registration
        i. Compromised password check
    b. Registration by a high level account
    c. Login
    d. Logout
    e. Data store access
        i. Structure
        ii. Access layer
        iii. Restriction

2. Base Unique Application (2/20/19)
    a. Lot management
        i. Adding lots
        ii. Editing lots
        iii. Editing parking spots
    b. Reservation system
        i. Viewing parking lot map
        ii. Reserving a spot
        iii. Editing a reservation for a spot
    c. User vehicle registration

3. Important Additions to Unique Application (3/20/19)
    a. Abuse management
        i. Submitting reports
        ii. Viewing reports
        iii. Verifying reports

iv.   Fines and bans
      b. Payments
            i.   Adding Balance
            ii.   Charging System

4. Secondary Account Functionality (4/24/19)
      a. Account Activation
      b. Account Deletion
      c. Account Configuration
      d. Password Reset
      e. Authorization
      f. User Privacy

5. Extra Standard User Functionality (4/24/19)
      a. Favorites List
            i.   Managing favorites
            ii.   Favorite parking spots
            iii. Viewing favorites
      b. Notifications
            i.   Notification center
      c. View Documentation
            i.   Developer
            ii.   User Manual
            iii. FAQ

6. System Analytics (4/24/19)
      a. Usage analysis dashboard
      b. Logging
      c. Archiving