*Florida International University*

*School of Computing and Information Sciences*

Final Deliverable

TODO LIST OPTIMIZER 1.0

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***Abstract***

*Todo…*

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### Introduction

Todo-list Optimizer attempts to be a solution for the busy day schedule. It is meant to be a mobile application to make it accessible at any time to the user. The main focus of the Todo-list Optimizer is to combine the best of routing and task management algorithms in an easy-to-use and improved user interface (UI) that enhances the user experience (UX). Todo-list optimizer provides a seamless integration between navigation and task management, improving efficiency using intelligent routing.

### Current System

The current system consists of applications such as Google Maps, Waze, Apple Reminders, Todoist, among others. These systems work well as independent modules but it does not exist an application that combines those features (task management and efficient routing). Some applications(e.g. MapQuest, Apple Remainders) have attempted to combine these obtaining non-intuitive user interfaces or excessive steps to accomplish a goal. Overall, there are no application in the market that combines the task management with routing algorithm in an efficient and pleasant way or within the same application.

### Purpose of New System

Todo-List optimizer !{Current.System}

Todo-List optimizer attempts to improve the daily schedule by providing a better integration between task management and routing algorithms. The application enables the user to create tasks (e.g. milk, vegetables, toothpaste, etc.) associated with places (e.g. Walgreens, Home Depot, Walmart, Home) to find the optimal route to accomplish them. It serves not only as a navigation system, but also, once the user is in the desired place, he or she can follow up with the task related to it. The application allows the user to save his or her favorite places so the next time it will be easy to access and them. Another feature is that the application learns user patterns (e.g. time that the user spends in an specific place or type of places) allowing it to predict more accurately the length of the solving all the tasks.

## User Stories

The following section provides the detailed user stories that were implemented in this iteration of the Todo-List Optimizer project. These user stories served as the basis for the implementation of the project’s features. This section also shows the user stories that are to be considered for future development.

### Implemented User Stories

**User Story Name: Setup Sign Up System (Frontend + Backend)**

* Description: As a user, I would like to be able to register with the system so I and only I have access to my tasks and itineraries.

Acceptance Criteria

* The User must enter a valid username(email) and password, or use a third-party authentication method (Facebook, Google+) in order to register.
* If user’s username or password are not a valid, user must be notified and reenter a valid username and password in order to register.
* If username is already in use, notify the User.
* Once registered, the User will be able to navigate through all of the application views.

**User Story Name: Setup Login System (Frontend + Backend)**

* Description: As a registered user, I would like to be able to authenticate to the system so I can access to my tasks and itineraries.

Acceptance Criteria

* If user enters correct username and password, the user can authenticate successfully to the system.
* If user’s username or password does not match with the records in the system, user must be notified that credentials were not correct, but the notification will not specify if the username was valid or not.
* Usernames and passwords must be encrypted when being transferred over the network, and they most never be sent as plain text.
* Users can be authenticated through a third party (Facebook, Google+)
  + If the email collected from a third-party authentication matches an existing account, the account will be linked to the third-party authentication method.
  + If there is no match with an existing account, the third-party credentials will be used to sign-up/in.
* Once signed in, the User should be able to navigate through all of the application views with its tasks and itineraries.

**User Story Name: Setup Reset Password (Frontend + Backend)**

* Description: As a registered user, I would like to be able to reset my password in case I forget my current password, or if someone has attempt several times to access my account.

Acceptance Criteria

* The User must enter a registered email in order to receive an email with the recovery code and instructions.
* The User should be able to enter a new password and confirm it after the proper code has been inserted.
* The new password has to be different from the old password.

**User Story Name: Add Places**

* Description: As a registered user, I would like to be able to add a place to my itinerary.

Acceptance Criteria

* The User should be able to search for a valid entity (e.g. CVS, Walmart).
* The User should be able to search for a valid address.
* The User should be able to pick from the pool of favorite places.
* The User must select one of the previous choices in order to add a new place to the itinerary.

**User Story Name: Add tasks to places**

* Description: As a registered user, I would like to be able to add tasks to be done in a specific place of the itinerary.

Acceptance Criteria

* The User must have a place in the itinerary in order to add a task.
* The User can add any descriptive text as a task.

**User Story Name: Show Itinerary and Total Time**

* Description: As a registered user, I would like to be able to see an overview of all the places in the itinerary and how long it would take to go through all of them.

Acceptance Criteria

* The User must have at least one place in the itinerary.
* The User should be able to see an overview of the itinerary and the optimized order of the places.

**User Story Name: View Map Overview**

* Description: As a registered user, I would like to be able to see an overview of the itinerary of the trip at any time on the map.

Acceptance Criteria

* The User must have at least one place in the itinerary.
* The User must be in navigation mode in order to see the overview of the itinerary on the map.
* In navigation mode, the User should be able to move back and forth between step by step mode and overview of the map.

**User Story Name: Setup Navigation (Frontend + Backend)**

* Description: As a registered user, I would like to be able to have a navigation mode where I follow step by step instructions to go through my itinerary.

Acceptance Criteria

* The User must have at least one place in the itinerary.
* The User should be able to see the estimated time to the place he/she is heading to.
* The User should be able to see the maneuver that he/she has to perform.
* The view in the map should be center in the User’s location to orient the User better.
* The view in the map should be able to toggle between compass and direction modes.
* In navigation mode, the User should be able to move back and forth between step by step mode and overview of the map.

**User Story Name: View Places on the Map**

* Description: As a registered user, I would like to be able to see all of the places of my itinerary on the map, and an excerpt of the tasks.

Acceptance Criteria

* The User must have at least one place in the itinerary.
* The User must be in the map view in order to tap on places and see an excerpt of tasks.
* After a place is taped, moving the map or tapping outside of the pin will hide the excerpt of the place.

**User Story Name: Add New Place while Navigating**

* Description: As a registered user, I would like to be able to add a place to modify my itinerary once the navigation has started.

Acceptance Criteria

* The User should be able to have a gesture to add new place into the itinerary from the map view.
* The new place should be inserted in the itinerary and optimized position.

**User Story Name: Update Route on Map View if Delays**

* Description: As a registered user, I would like to be able to follow an optimized path at all times.

Acceptance Criteria

* The User must have at least one place in the itinerary.
* The User will be notified when changes in to the ETA occur.
* If changes occur, routes will be updated with the new optimized path.
* When optimized path is ready, user will be redirected to follow new route.

**User Story Name: Add Favorite Places**

* Description: As a registered user, I would like to be able to save places that I visit often as a favorite list.

Acceptance Criteria

* The User must have at least one place in the itinerary.
* The User must be in the Place View to selected as a frequently used place.
* If a User visit a place often it will also be added to frequently used place.

**User Story Name: Add History**

* Description: As a registered user, I would like to be able to see the places I have visited before.

Acceptance Criteria

* The User must have visited at least one place to have a history of places.
* Every time a user visits a place in the itinerary, the visit will be recorded.
* There is a History View for the user to review the places and tasks accomplished.

**User Story Name: Time Spent in Places**

* Description: As a registered user, I would like to be able to see the time I spent in places I have visited before.

Acceptance Criteria

* The User must have visited at least one place to have a record of time.
* Every time a user visits a place in the itinerary, the time spent will be recorded.
* The time of a visit will be in the History View included in a visit record for the User to review the time spent in a specific visit.
* The time of a visit will be used for future itinerary estimates.

## Project Plan

This section describes the planning that went into the realization of this project. This project incorporated the agile development techniques and as such required the sprints to be planned. These sprint plannings are detailed in the section. This section also describes the components, both software and hardware, chosen for this project.

In order to plan out a successful execution of To-Do list optimizer, an agile and effective methodology was used to keep all developers, project managers, and product owners on track. Various brainstorming sessions took place detailing issues ranging from user interface design to whether features should be prioritized sooner rather than later. The team also aimed to have the design of each feature completed by our designer Euge, before the frontend team began working on them to minimize the cost of development.

Iterations on the product were divided into sprints. Each sprint lasted 2 weeks, with a sprint  
checkpoint meeting halfway. Their goal was to plan out what each developer had to work on for  
the next two weeks. Once a feature was built out, demos took place in weekly sprint meetings.  
Each team member would present their work from the past week and discuss with the rest of the  
team. This served as a method for all team members to be aware of what their colleagues were  
working on. Additionally, each day the team had scrum meetings which outlined what each  
member was working on, what they accomplished since the day before, and what hurdles they  
were currently facing.

### Hardware and Software Resources

The following is a list of all hardware and software resources that were used in this project:

1. Hardware
   1. Local Server (MacBook Pro)
      1. 16 GB RAM
      2. 256 GB SSD Disk
      3. 1000 GB Transfer
2. Software
   1. Express
   2. React Native

### Sprint Plan

#### Sprint 3

**Sprint Planning Meeting**

Release #:

Sprint #: 3

Date:

Attendees:

Start Time:

End Time:

After discussion, the velocity of the team were estimated to be 391 (0.8 \* 489) hours

* + - 1. Manuel Garcia:
      2. Daniel Gonzales:
      3. Salvador Ricardo: 1 hours

The goal for the next Sprint is:

* + - 1. Asd
      2. Ase
      3. Asd

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their numbers.

1. Manuel Garcia
   * #123 Refaf
   * #213 sad
2. Daniel Gonzales
   * #12323 sadsd
3. Salvador Ricardo
   * #123 asdsfafa

#### Sprint 4

**Sprint Planning Meeting**

Release #:

Sprint #: 3

Date:

Attendees:

Start Time:

End Time:

After discussion, the velocity of the team were estimated to be 391 (0.8 \* 489) hours

* + - 1. Manuel Garcia:
      2. Daniel Gonzales:
      3. Salvador Ricardo: 1 hours

The goal for the next Sprint is:

* + - 1. Asd
      2. Ase
      3. Asd

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their numbers.

1. Manuel Garcia
   * #123 Refaf
   * #213 sad
2. Daniel Gonzales
   * #12323 sadsd
3. Salvador Ricardo
   * #123 asdsfafa

#### Sprint 4

**Sprint Planning Meeting**

Release #:

Sprint #: 3

Date:

Attendees:

Start Time:

End Time:

After discussion, the velocity of the team were estimated to be 391 (0.8 \* 489) hours

* + - 1. Manuel Garcia:
      2. Daniel Gonzales:
      3. Salvador Ricardo: 1 hours

The goal for the next Sprint is:

* + - 1. Asd
      2. Ase
      3. Asd

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their numbers.

1. Manuel Garcia
   * #123 Refaf
   * #213 sad
2. Daniel Gonzales
   * #12323 sadsd
3. Salvador Ricardo
   * #123 asdsfafa

#### Sprint 5

**Sprint Planning Meeting**

Release #:

Sprint #: 3

Date:

Attendees:

Start Time:

End Time:

After discussion, the velocity of the team were estimated to be 391 (0.8 \* 489) hours

* + - 1. Manuel Garcia:
      2. Daniel Gonzales:
      3. Salvador Ricardo: 1 hours

The goal for the next Sprint is:

* + - 1. Asd
      2. Ase
      3. Asd

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their numbers.

1. Manuel Garcia
   * #123 Refaf
   * #213 sad
2. Daniel Gonzales
   * #12323 sadsd
3. Salvador Ricardo
   * #123 asdsfafa

#### Sprint 6

**Sprint Planning Meeting**

Release #:

Sprint #: 3

Date:

Attendees:

Start Time:

End Time:

After discussion, the velocity of the team were estimated to be 391 (0.8 \* 489) hours

* + - 1. Manuel Garcia:
      2. Daniel Gonzales:
      3. Salvador Ricardo: 1 hours

The goal for the next Sprint is:

* + - 1. Asd
      2. Ase
      3. Asd

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their numbers.

1. Manuel Garcia
   * #123 Refaf
   * #213 sad
2. Daniel Gonzales
   * #12323 sadsd
3. Salvador Ricardo
   * #123 asdsfafa

#### Sprint 7

**Sprint Planning Meeting**

Release #:

Sprint #: 3

Date:

Attendees:

Start Time:

End Time:

After discussion, the velocity of the team were estimated to be 391 (0.8 \* 489) hours

* + - 1. Manuel Garcia:
      2. Daniel Gonzales:
      3. Salvador Ricardo: 1 hours

The goal for the next Sprint is:

* + - 1. Asd
      2. Ase
      3. Asd

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their numbers.

1. Manuel Garcia
   * #123 Refaf
   * #213 sad
2. Daniel Gonzales
   * #12323 sadsd
3. Salvador Ricardo
   * #123 asdsfafa

## System Design

This section contains information on the design decisions that went into this project. The architecture patterns are outlined and explained. The entire system is shown in a package diagram and the subsystems are explained. Finally, the design patterns used in the project are discussed.

### Architectural Patterns

### System and Subsystem Decomposition

### Deployment Diagram

### Design Pattern

## System Validation

Unit Tests:

* + Test case ID: signup
  + Description/Summary of Test: sasdas
  + Pre-condition: N/A
  + Expected Result:
  + Actual Result:
  + Status (Fail/Pass): Pass

## Glossary

1. MVC: Model, View, Controller architecture design paradigm.

## Appendix

### Appendix A – UML Diagrams

### Appendix B – User Interface Design

### Appendix C – Sprint Review Reports

#### Sprint 3

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

* Manuel Garcia
  + #1234 Tasd
* Daniel Gonzales
  + #768 asd
* Salvador Ricardo
  + #18723

#### Sprint 4

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

* Manuel Garcia
  + #1234 Tasd
* Daniel Gonzales
  + #768 asd
* Salvador Ricardo
  + #18723

#### Sprint 5

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

* Manuel Garcia
  + #1234 Tasd
* Daniel Gonzales
  + #768 asd
* Salvador Ricardo
  + #18723

#### Sprint 6

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

* Manuel Garcia
  + #1234 Tasd
* Daniel Gonzales
  + #768 asd
* Salvador Ricardo
  + #18723

#### Sprint 7

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

* Manuel Garcia
  + #1234 Tasd
* Daniel Gonzales
  + #768 asd
* Salvador Ricardo
  + #18723

### Appendix D – Sprint Retrospective Reports

#### Sprint 3

What went wrong? (what went wrong this sprint?)

* Manuel Garcia
  + Sadasd
* Daniel Gonzales
  + Axdsad
* Salvador Ricardo
  + asdasd

Did we do a good job estimating our team’s velocity?

* Yes

Did we do a good job estimating the points (time required) for each user story?

* No

Did each team member work as scheduled?

* Yes

What went right? (what went right this sprint? Learn something useful?)

* Manuel Garcia
  + Sadsad
* Daniel Gonzales
  + Asdasd
* Salvador la loca
  + Asdasd

How to address the issues in the next sprint? (feedback on how to improve the process and product, 1 thing per person)

* How to improve the process?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd
* How to improve the product?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd

#### Sprint 4

What went wrong? (what went wrong this sprint?)

* Manuel Garcia
  + Sadasd
* Daniel Gonzales
  + Axdsad
* Salvador Ricardo
  + asdasd

Did we do a good job estimating our team’s velocity?

* Yes

Did we do a good job estimating the points (time required) for each user story?

* No

Did each team member work as scheduled?

* Yes

What went right? (what went right this sprint? Learn something useful?)

* Manuel Garcia
  + Sadsad
* Daniel Gonzales
  + Asdasd
* Salvador la loca
  + Asdasd

How to address the issues in the next sprint? (feedback on how to improve the process and product, 1 thing per person)

* How to improve the process?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd
* How to improve the product?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd

#### Sprint 5

What went wrong? (what went wrong this sprint?)

* Manuel Garcia
  + Sadasd
* Daniel Gonzales
  + Axdsad
* Salvador Ricardo
  + asdasd

Did we do a good job estimating our team’s velocity?

* Yes

Did we do a good job estimating the points (time required) for each user story?

* No

Did each team member work as scheduled?

* Yes

What went right? (what went right this sprint? Learn something useful?)

* Manuel Garcia
  + Sadsad
* Daniel Gonzales
  + Asdasd
* Salvador la loca
  + Asdasd

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    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd
* How to improve the product?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd

#### Sprint 6

What went wrong? (what went wrong this sprint?)

* Manuel Garcia
  + Sadasd
* Daniel Gonzales
  + Axdsad
* Salvador Ricardo
  + asdasd

Did we do a good job estimating our team’s velocity?

* Yes

Did we do a good job estimating the points (time required) for each user story?

* No

Did each team member work as scheduled?

* Yes

What went right? (what went right this sprint? Learn something useful?)

* Manuel Garcia
  + Sadsad
* Daniel Gonzales
  + Asdasd
* Salvador la loca
  + Asdasd

How to address the issues in the next sprint? (feedback on how to improve the process and product, 1 thing per person)

* How to improve the process?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd
* How to improve the product?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd

#### Sprint 7

What went wrong? (what went wrong this sprint?)

* Manuel Garcia
  + Sadasd
* Daniel Gonzales
  + Axdsad
* Salvador Ricardo
  + asdasd

Did we do a good job estimating our team’s velocity?

* Yes

Did we do a good job estimating the points (time required) for each user story?

* No

Did each team member work as scheduled?

* Yes

What went right? (what went right this sprint? Learn something useful?)

* Manuel Garcia
  + Sadsad
* Daniel Gonzales
  + Asdasd
* Salvador la loca
  + Asdasd

How to address the issues in the next sprint? (feedback on how to improve the process and product, 1 thing per person)

* How to improve the process?
  + Manuel Garcia
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  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd
* How to improve the product?
  + Manuel Garcia
    - SAdasdas
  + Daniel Gonzales
    - Asdad
  + Salvador Ricardo
    - Asdasd

### Appendix F - User Manuals, Installation/Maintenance Document, Shortcomings/Wishlist Document and other documents

#### Videos

* Intro Video

#### Posters

* sdfsdfdsf