

# Distributed Route Planning

Requirement Specification Document

## **Stakeholders:**

Femi, Sabrina & Hassan

Prof. Maria Teresa & Diego Serrano

# Table of Content:

## Stakeholders:

Femi, Sabrina & Hassan

Prof. Maria Teresa & Diego Serrano

## Project Description:

Services Need:

Project Purpose & Scope:

Technical Challenges / Issues:

Timeline:

## Project Requirements

Functional Requirements:

Technical Requirements:

Policy Requirements:

Usability Requirements:

## Project Constraints:

Time Constraints:

Cost Constraints:

Scope Constraints:

## Project Technology:

Software:

## Project Communication Plan:

Internal Communication:

External Communication:

## **Project Description:**

A web application UI that is able to provide users with possible destination routes from their current location or desired location to final location. Primary location of app will be on the Web. Project is piece of a much bigger project, ideal plan will have it work alongside these other projects stated “Manipulating traffic big data”, “generation of synthetic traffic data”, “Analysis of video in real time”, “Location-based video streaming” & “Distributed Route Planning”. This point forth project will refer to only the “distributed route planning” project piece.

### **Key Points:**

- Find a set of possible routes
  - Integration with google maps should be able to provide us with the possible routes given starting and ending location
- Find the cost of each route
  - Cost depends on variables we choose (this was left very vague - hr of day, accidents, time to arrive at location)
- Design a simple UI to show the result
  - Design a UI for a web application that is able to show the basic functionalities
  - Input start to finish
  - Show different possible routes
  - User picks one possible routes
  - Show possible road obstructions on maps given to us from a different team (accidents etc.)
- Map updated in real time with route changing depending on current events
- Able to pick a route that avoids certain obstructions

## **Services Need:**

City of Edmonton needing a map implementation that takes into the account the traffic feed provided by the city and is able to create an algorithm that is able to give a map destination route using these information. This enabling users to avoid places with accident or more traffic or having a more ETA than other routes.

## **Project Purpose & Scope:**

The purpose of this project is to provide users with possible routes from designated starting point to destination, while taking into account the edmonton traffic.

## Technical Challenges / Issues:

Having to learn new technologies in being able to deliver product, especially in the limited time given. Having to also rely on other teams in other to provide necessary information at an appropriate time in being able to get the project done.

## Timeline:

Description	Deadline
Project Part 1 <ul style="list-style-type: none"><li>• GANTT Chart</li><li>• Glossary</li><li>• User Interface Mockups &amp; Storyboard</li></ul>	Feb. 19 2016
Project Part 2 <ul style="list-style-type: none"><li>• Code release of prototype</li><li>• Tangible Demo</li><li>• Test Cases</li><li>• Quality Assessment Test</li><li>• OOD</li><li>• Improvement Plan</li><li>• Releasing planning which includes quality</li></ul>	March. 11 2016
Project Part 3 <ul style="list-style-type: none"><li>• Code base of improved prototype</li><li>• Test Cases</li><li>• OOD</li><li>• Refactoring</li><li>• Quality Assesment Test</li><li>• Code Documentation</li></ul>	April 1 2016
Project Part 4 <ul style="list-style-type: none"><li>• Presentation</li><li>• Team technical paper (CASCON)</li></ul>	April 4 2016

# **Project Requirements**

## **Functional Requirements:**

1. User can view map
2. User can input starting/final destination
3. User sees provided routes to destination
4. User can pick route to use to get to destination

## **Technical Requirements:**

1. Works as a web application
2. Responsive enough to use on tablets, phones
3. Cross-browser/platform support (IE, Firefox, Chrome, Safari - PC & MAC)
4. API with acceptable level of documentation
5. Detailed github repository

## **Policy Requirements:**

1. Appropriate credit and documentation for borrowed code
2. Double check to make sure license allows us to use appropriate code

## **Usability Requirements:**

1. The system will be fully functional in major browsers
2. The system will support mobile users in some way.
3. Guide will be provided on how to navigate UI

# **Project Constraints:**

## **Time Constraints:**

We need to have a tangible demo version of project by **March 11, 2016**. A finished version of the project by **April 1, 2016**.

## **Cost Constraints:**

Communicate with Diego if anything arises that involves money.

## **Scope Constraints:**

Project scope is strictly for Edmonton, also using the data feed provided to us by the City of Edmonton.

## **Project Technology:**

### **Software:**

Mean Stack will likely be used to control the front end of the project, enabling us to display the map and also grab user input in a nice layout.

Hadoop will be used for handling the data processing this will in turn be used for the cost calculations that will provide users with destination routes.

## **Project Communication Plan:**

### **Internal Communication:**

Slack will be used to the messaging platform to communicate effectively with other teams and within ourselves when not together.

Hold two meeting every week to make sure we are on track and project is moving along. Likely be on every Wednesday & Friday.

### **External Communication:**

Effectively communicate with other teams directly on Wednesday (last hour of class lecture). We have emails of Professor & Diego to inform them if anything comes up or ask the appropriate questions needed in regards to the project.