Introduction

Purpose

The goal of this project is to create a web application accessible on mobile and desktop PC's for local Denton riders of DCTA (Denton County Transport Authority).

Scope

The "Denton Bus Tracker" is a web application that helps riders of DCTA quickly find bus routes to their destinations, view routes and stops with estimated arrival times, and see buses moving in real time.

Definitions, acronyms, abbreviations

DCTA: Denton County Transport Authority

Reference Documents

N/A

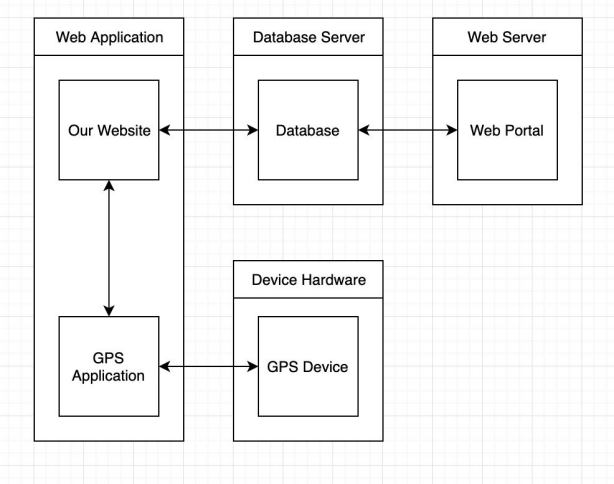
Overview

The following SRS document will outline the system's intended usage, who will be using it, and what features it will include upon completion.

Overall Description

Product Perspective

The goal of this software is to be a replacement to the current UNT Bustracker webapp, but this a new self-contained product with no affiliation with the past bustracker. DCTA provides the bus route information as well as real-time GPS information of each transport vehicle. We will have the website stored online which keeps a database to store information about users, routes, and buses. On the individual's device we'll need to retrieve their GPS information to enable route planning.



Product Functions

- Users will be able to click on the route they wish to ride on and view:
    - The closest bus
    - All the stops the bus takes on the map
    - The bus schedule
- Routes can be favorited, sorted by closest to user, or kept in it's default alphabetical order.
- Users will be able to give feedback to the administrators
- Administrators will be able to use Django Admin to add or remove buses or routes
- Administrators will be able to view data that the bus drivers collect and rider feedback.

- Buses statuses can be identified as “in service”, or “under maintenance”.
- Routes can be modified to reflect construction and road closures by the administrators.

User Characteristics

The system is intended to be used by the general population of Denton. All age ranges, education levels, and all varieties of technical expertise. Because of this, the system will be very simple and intuitive.

The administration site will be used by DCTA to assist in running the transit services. It will have the features needed all on one screen for ease of adoption by DCTA.

Constraints

Because the real time tracking of the vehicles is provided by DCTA, we only have the information they provide. This means that we can only update the locations of vehicles will only be as frequent as they provide and those locations will only be as accurate as the information they provide.

Assumptions and Dependencies

We are assuming that the user is using a device with at least 1gb of RAM, a 1.4 Ghz processor, and 1 Mbps download speed for loading the page. These are pretty low settings that even phones from several generations ago can surpass.

Specific Requirements

External Interface

User Interface

- The main screen will feature a map which takes up most of the screen. On this main screen there will be two buttons, one icon will open a sliding menu showing the list of routes while the other icon will send the user to the login page (or user page if they're already signed in)
- The sliding routes menu will show tiles of each route, each tile features the title of the route and is assigned a unique color. When clicking on the tile it will expand downwards showing all the stops in order for the route with estimated times of arrival.
- The user screen will default to asking the user to sign-in if they're not already. It will feature input boxes for a username, a password, and a button for logging in. Below this login box there will be a link for signing up if they don't have an account.
- Once logged in users will be able to manage their account information, favorite routes, and feedback.

Hardware Interface

- The user will use a web browser and will control it with a keyboard and mouse for the desktop web app, and the touch screen for the mobile app version.
- The sites interface will be able to adjust to the size of the screen or window.

Software Interface

- Admin site that is made from Django will be used to modify the available routes and buses.
- User's data from their account will be stored anonymously in database for use interacting with the apps.
- A SQL database will be used to contain the data.
- A software much like Google Maps will be used to give us a map of Denton, as well as a way to map the routes and stops of the buses.

Communication Interface

- The product will be made with Django web framework, so it will require a network server.
    - Server will be uploaded to a TBD cloud service.
- User will give an email for their account allowing for features such as favorite routes.

Functional Requirements

- The user should be able to view a map of the transit service they wish to use.
    - The map will have a column on the left side of the screen that will have a list of color coordinated bus routes.

Performance Requirements

- App must be able to run smoothly.
    - No crashes
    - Apps will be as bug free as possible.
    - The app will be able to run with the above conditions on both the desktop site and mobile site.

Design Constraints

- For mobile, the UI will potentially not be always mobile friendly as the site is designed for desktop web.
- Programmers are still learning the technologies

Other Requirements

- TBD

Appendices

*TBD

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