FINAL PROJECT

BY DRAKE NELSON

INTRODUCTION

Many people use GPS software. It is key to getting around the world. Whether you are going from Tucson to Phoenix, Mexico to Canada, or to drive down the street, GPS systems got you covered. While some GPS software have offline capabilities, it could be made better.

WHY GPS?

I have been interested in geography for a few years. I have used GPS software for a few years as well. For a while I have had the idea that GPS is very important in current times.

EXISTING SOLUTIONS

SCOUT BY TELENAV

Scout is a GPS application that is on the Apple App Store. Scout has offline capability as a paid feature. It does allow downloading map regions for offline use without traffic -based data.

Telenav Includes Offline GPS Navigation to Scout for iPhone - ProQuest

SPYGLASS

Spyglass is another GPS program mainly for outdoors like hiking. It also can work offline.

Spyglass: An Offline GPS App - Document - Gale Business: Insights

HERE WEGO

HERE WeGo is also GPS software that can be used offline. It also has public transit info for many cities.

HERE WeGo: Offline Maps & GPS - Document - Gale Business: Insights

THE PROBLEM

One problem that I have found with these existing solutions is traffic data. In order to have traffic data, you need a network connection.

THE CONCEPT

One concept for a software solution is to have a GPS software program that can be used offline like the previously listed solutions, but with one major difference. The idea is that while the user is online the program can store a “snapshot” of their correct traffic data for offline use later.

A “SNAPSHOT”

The idea is that while the user is online, the application can save the current traffic data for a select region to a file. While the user is offline the program will use that “snapshot” or previous data to give a time estimate from that time and region. This is a unique solution to offline GPS software that hasn’t surfaced yet.

INPUT PROCESS OUTPUT

Input: start address and end address

Process: Gather “snapshot” of traffic data, get fastest route

Output: Display highlighted route and written directions

PSEUDOCODE

```
Module main()
        Call loadUI()
```

PSEUDOCODE

```
Module loadUI()
        Draw user interface()
        If connected to internet
                Call getTrafficSnapshot()
        When button pushed call onButtonPushed(start location textbox text, end location textbox text) Module
onButtonPushed(start, end)
        If traffic snapshot available
                Calculate route with snapshot()
        Else
                Calculate route()
        Load map UI()
        Highlight route()
        Display direction instructions()
        When start button pushed call beginRoute()
```

PSEUDOCODE

```
Module onButtonPushed(start, end)
        If traffic snapshot available
                Calculate route with snapshot()
        Else
                Calculate route()
        Load map UI()
        Highlight route()
        Display direction instructions()
        When start button pushed call beginRoute()
```

PSEUDOCODE

Module getTrafficSnapshot()

Get location from satellite data()

Get traffic data in a 50-mile radius()

Save traffic data to a file()

PSEUDOCODE

```
Module beginRoute()
        Get location from satellite data()
        While route still active
                Get next turn()
                Display next turn()
                Wait for turn to be reached()
        Call endRoute()
```

PSEUDOCODE

Module endRoute()

    Display destination UI()

    When ok button pushed call loadUI()

USER INTERACTION

When first opening the app, there will be a solid blue background with 2 textboxes for the start and end location. There will also be a green button to start the route. After that, the map will be displayed with a blue highlight on the route. On the right side of the screen will be the step-by-step directions. After the route is complete, on the right side there will be an ok button to go back to the main UI.

2 UNANSWERED QUESTIONS

Could there be a better way to handle traffic data offline?

Is offline traffic data needed?

SOURCES

Telenav Includes Offline GPS Navigation to Scout for iPhone - ProQuest

Spyglass: An Offline GPS App - Document - Gale Business: Insights

HERE WeGo: Offline Maps & GPS - Document - Gale Business: Insights

THANK YOU!