

An abstract graphic on the left side of the slide, consisting of a network of white lines and circles on a blue gradient background. The lines are vertical and horizontal, with some diagonal segments, and the circles are of varying sizes, resembling a circuit board or a data network.

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.

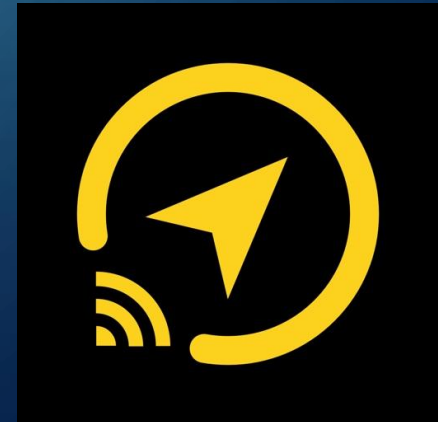
The background is a blue gradient with decorative white circuit-like lines in the corners. The lines consist of straight segments and small circles, resembling a stylized electronic circuit board.

EXISTING SOLUTIONS

SCOUT BY TELENNAV

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](#)

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THANK YOU!