Trick or Text
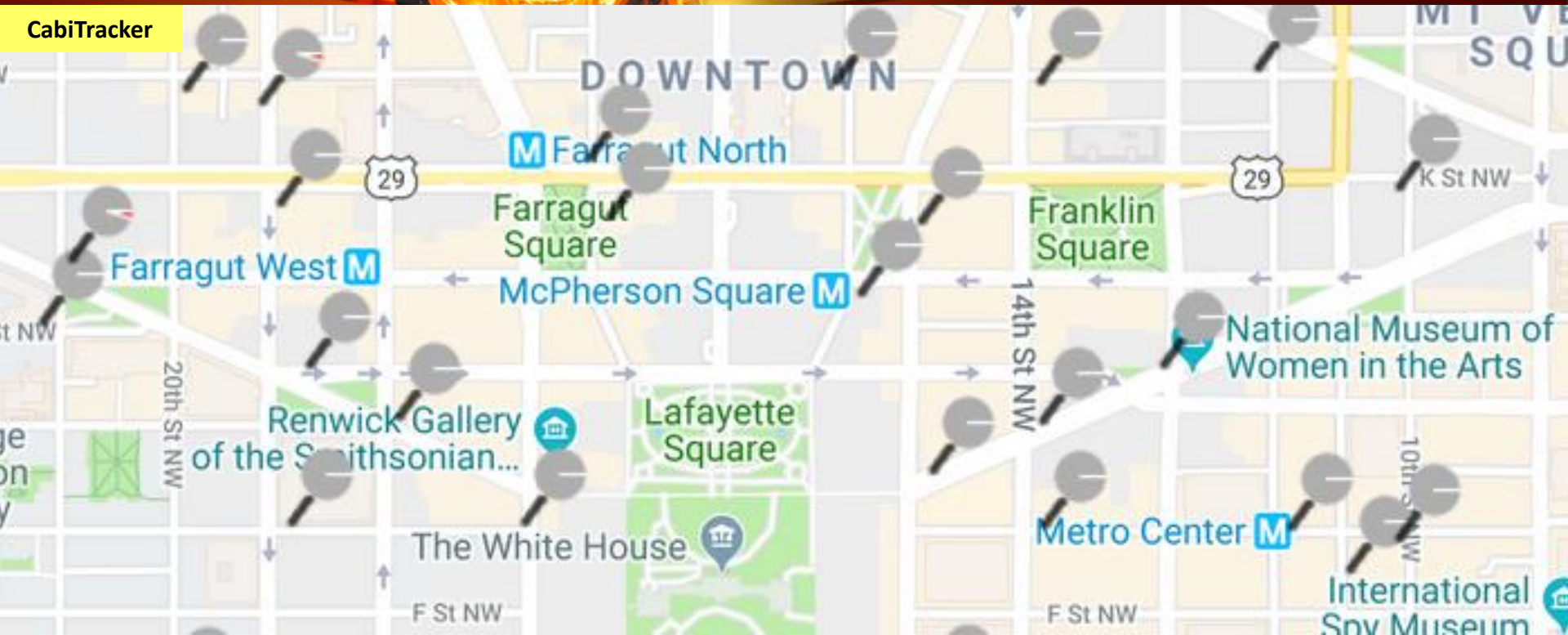
Robert Kraig
2018 OCT 24

Motivation

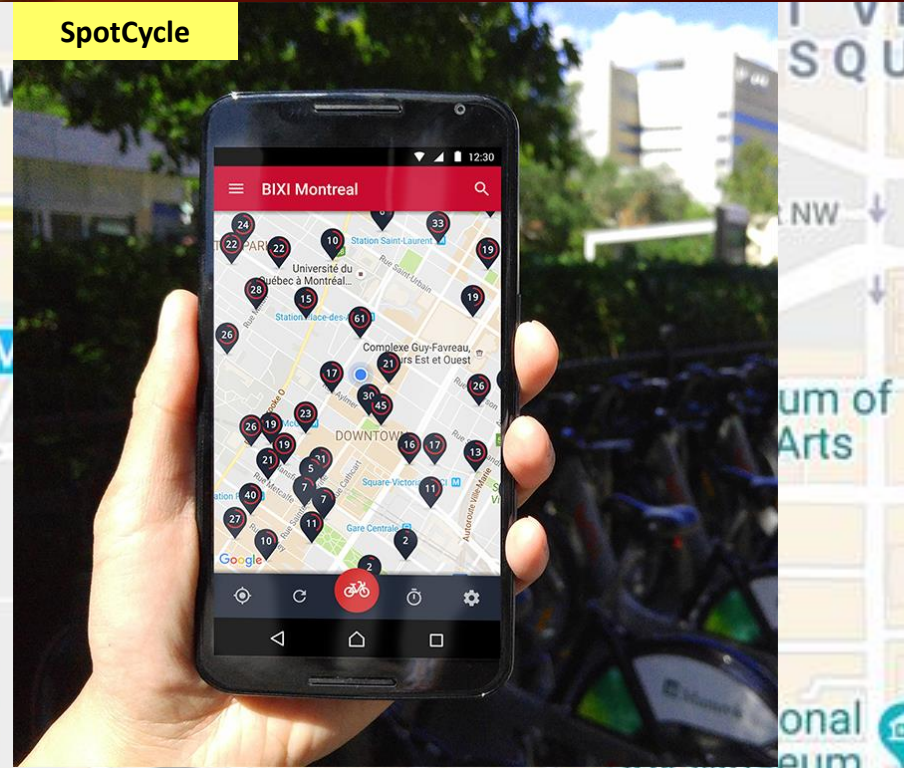# Motivation

CabiTracker

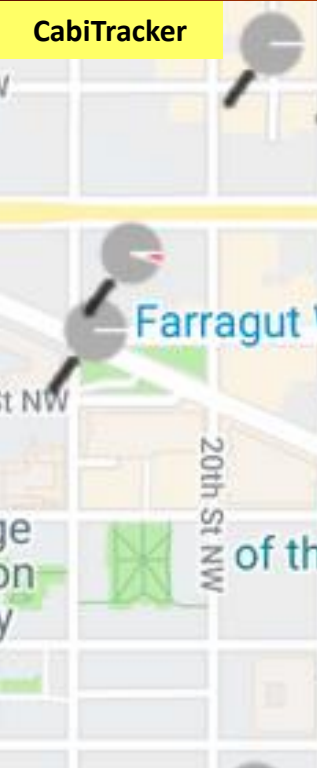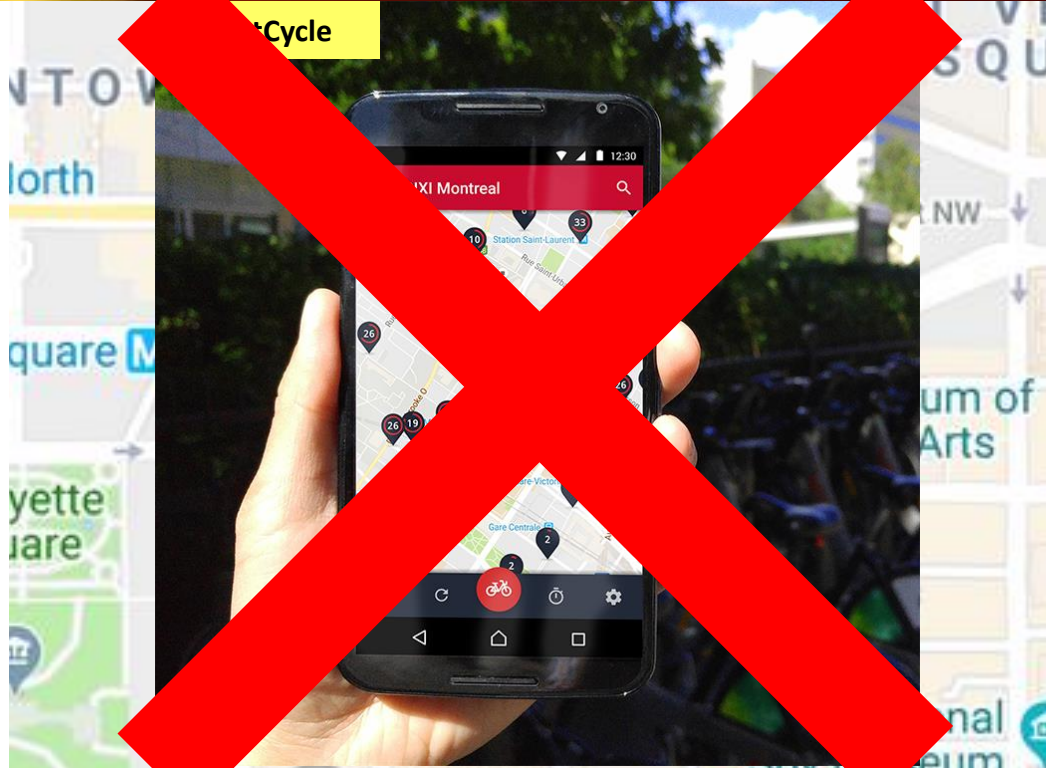SpotCycle

Motivation

Samsung Alias SCH-U740

CabiTracker

Solution Design

Design Criteria:
- Text-Messaging Interface Only
- No Internet Browsing
- No Location Services

User:
- Send Location
- Receive Bikeshare Data for that Location

App:
- Monitor for Incoming Requests
- Receive Location
- Acquire Bikeshare Data
- Respond with Data on Nearby Stations

Two Google APIs

Monitor for Requests: Gmail API
- OAuth 2.0
- SCOPE=''modify''
  - Read / Send / Delete Access

Interpret Location: Geocoding API
- Street Address ➡ Lat/Long
- Auto-completion (80 m st se)
- Bounding Boxes (&bounds=38,-78|40,-76)
- Street Addresses: Very Easy in DC and Arlington!

Find Nearby Stations

Acquire Capital Bikeshare Real-Time Dock Status Data:

- https://feeds.capitalbikeshare.com/stations/stations.xml
  - Info includes (station id, name, lat, long, nbBikes, nbEmptyDocks
  - XML Format
- Parser: BeautifulSoup

Sort by Distance to Input Address

- Return Data from Three Nearest Stations
- Supplement in case of Outages

- Text a DC-area street address to cabi7373@gmail.com

- Responses:

  – (bikes,emptyDocks), Direction Distance(ft), stationName

https://github.com/orthonormalize/cabiScrapeJ

80 m st se

1: (13,5), SE330 90ft,
1st & M St SE
2: (13,1), NE075 700ft,
1st & K St SE
3: (7,9), SE340 790ft, M
St & New Jersey Ave SE

+D
4: (10,29), SE280
1000ft, 1st & N St SE