

R Shiny Developing for Analysis GATech Employee Disappearance

Issue & problems

Refer to the analyzed case background of GATech company employee disappearance, with the provided data of transaction record in loyalty and credit card and car movement of car used by employee in GPS record, we plan to present a user-side dynamic and interactive data analytics dashboard to help police station identify anomalies and suspicious behaviors with strong evidence.

Motivation

Our research and visualization work were motivated by the practical analysis requirement which are short of interactive and communicate for users to make customized input selection and combine different data analysis. It aims to support police station and relative official bureau to detect suspicious movement and transaction activity.

Interactive

Communicative

Analyze

Approach

Analysis approach

- Exploratory analysis –basic observation
- Clustering analysis – group gps data
- Geo-spatial – explore movement path

Application developing approach

Tidyverse
R package for visualization

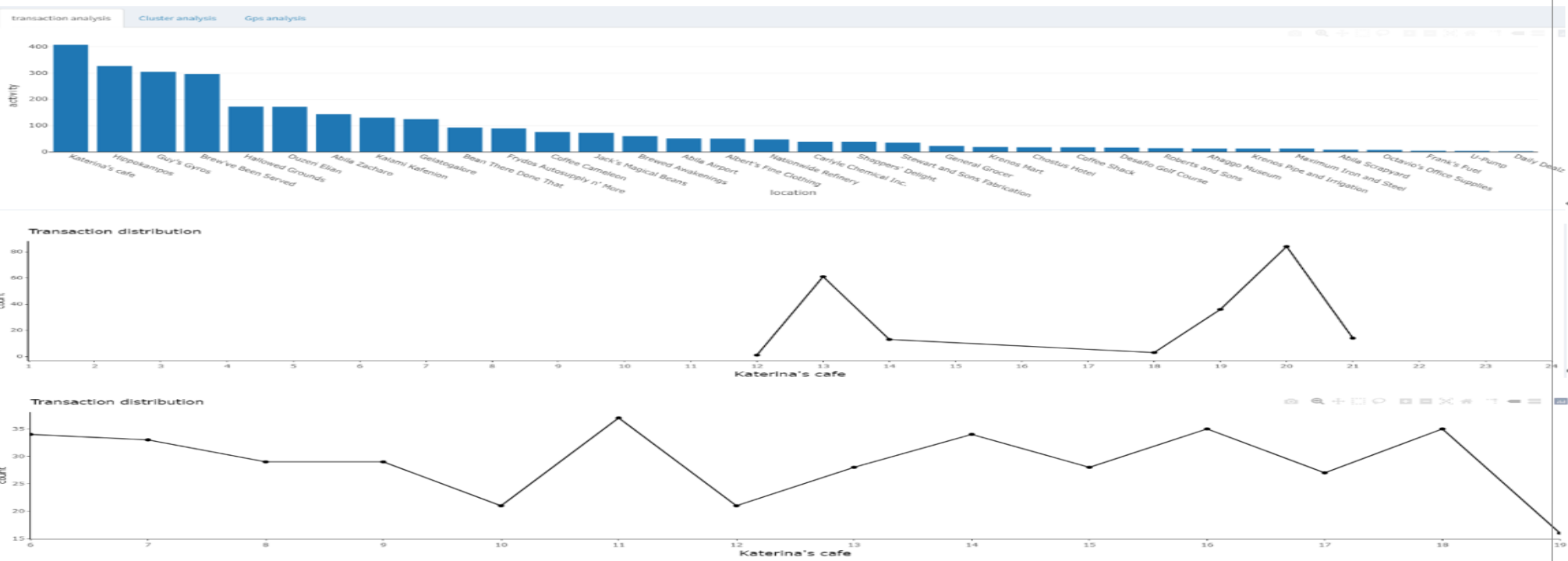
Shiny
Interactive web building



Results

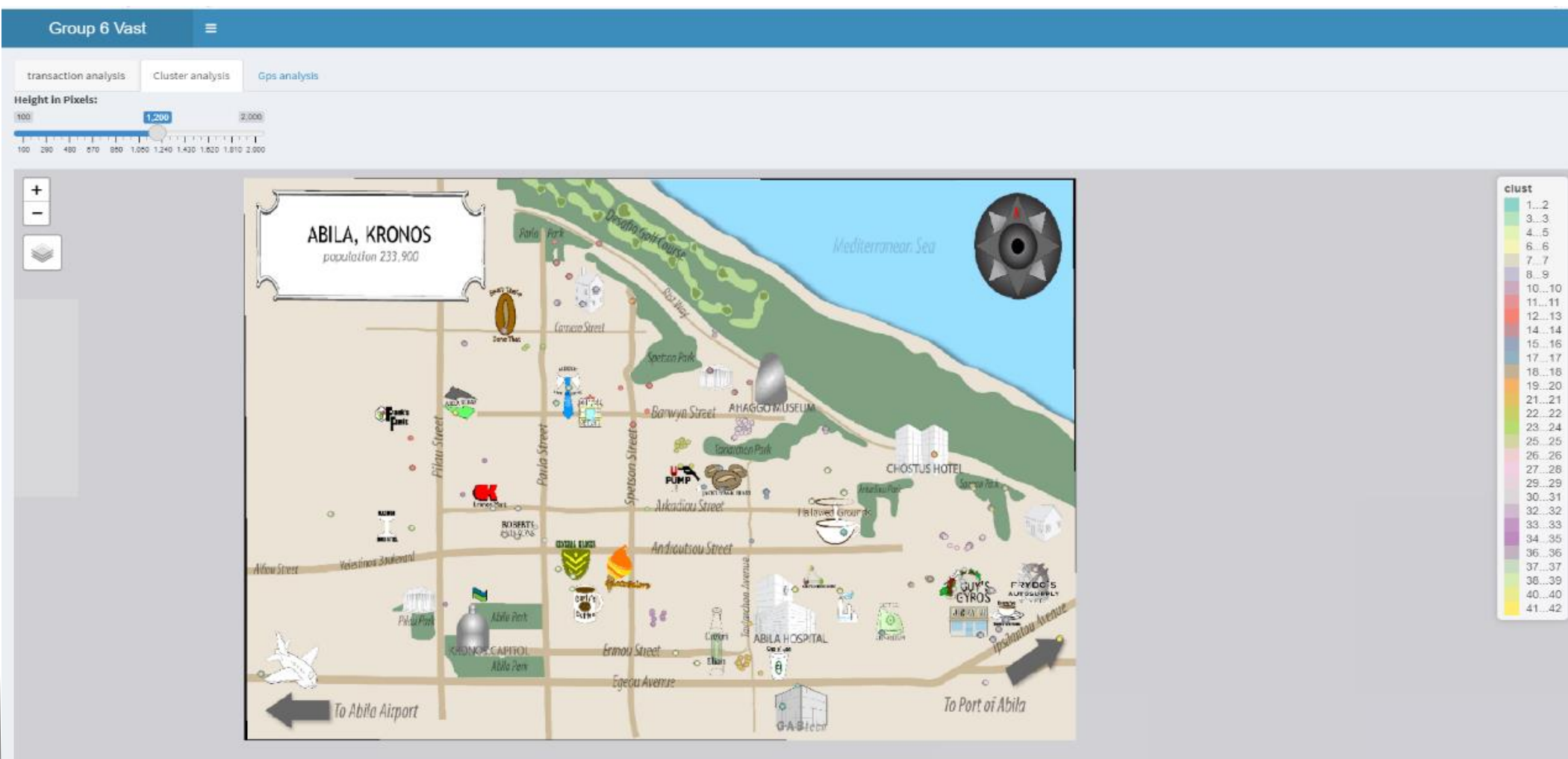
Section1

An exploratory analysis of transaction data, the bar chart used to disclose the popularity of transaction location, the density line shows the transaction distribution of day and time, link_active would be employed to connect the two different type plots.



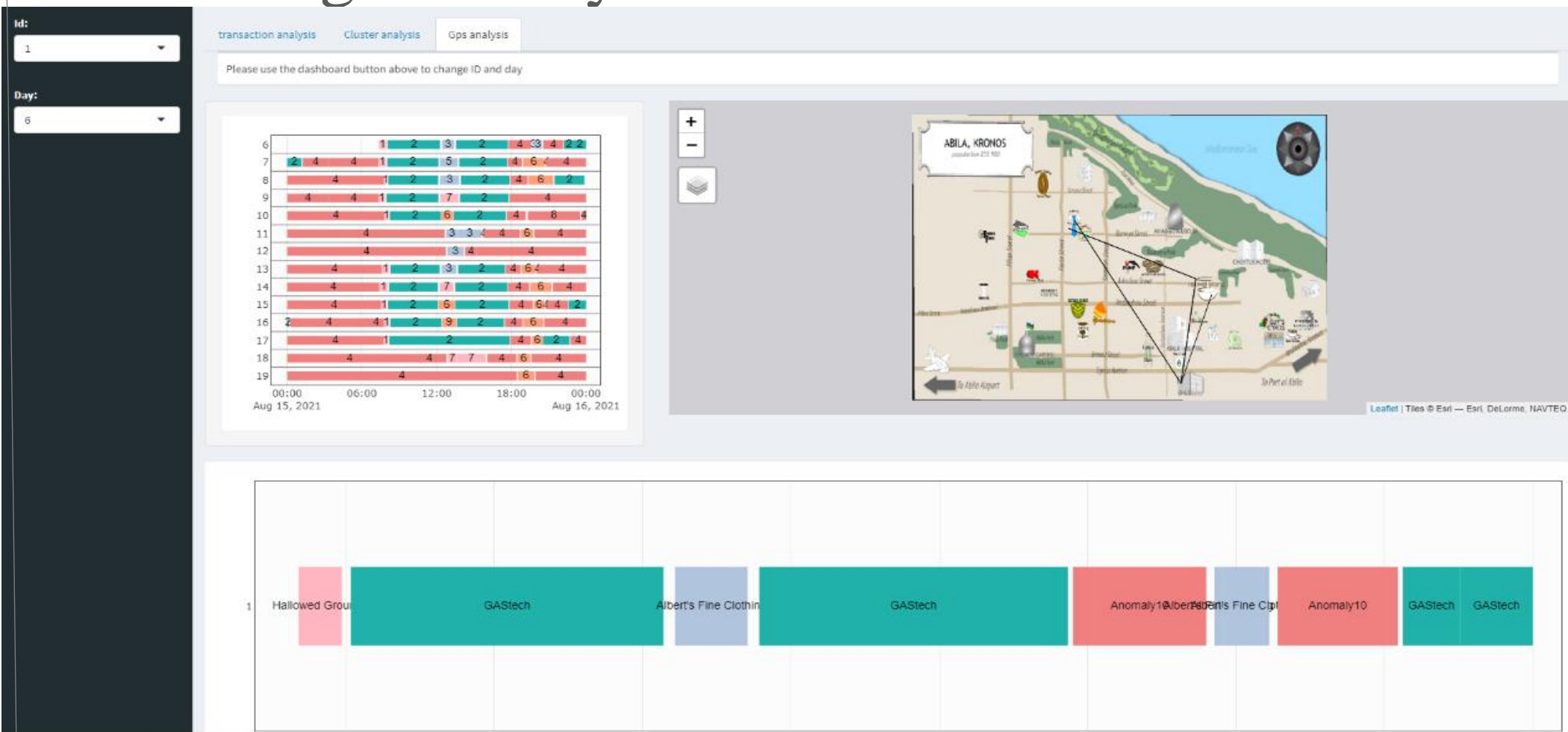
Section2

This panel shows the methodology of refer location with latitude and longitude. The cluster method would be used to group the closing data.



Section3

Mapping the gps data and visualize the employee's life pattern. The employee's life patten shown by Gantt chart. It would regard as a main analysis part of detecting anomaly behaviors.



Conclusion & Future work

Extend development: broaden data resources and enable more interactive function added to support make more detail and comprehensive analysis.

Future work: applied in more fields and industries, like analyze specified area's citizen's behaviors to improve the city infrastructure and business planning