CS122 Project Proposal Presentation

Chicago Wanderlust

The Ultimate Accommodation Finder for Leisure Travelers

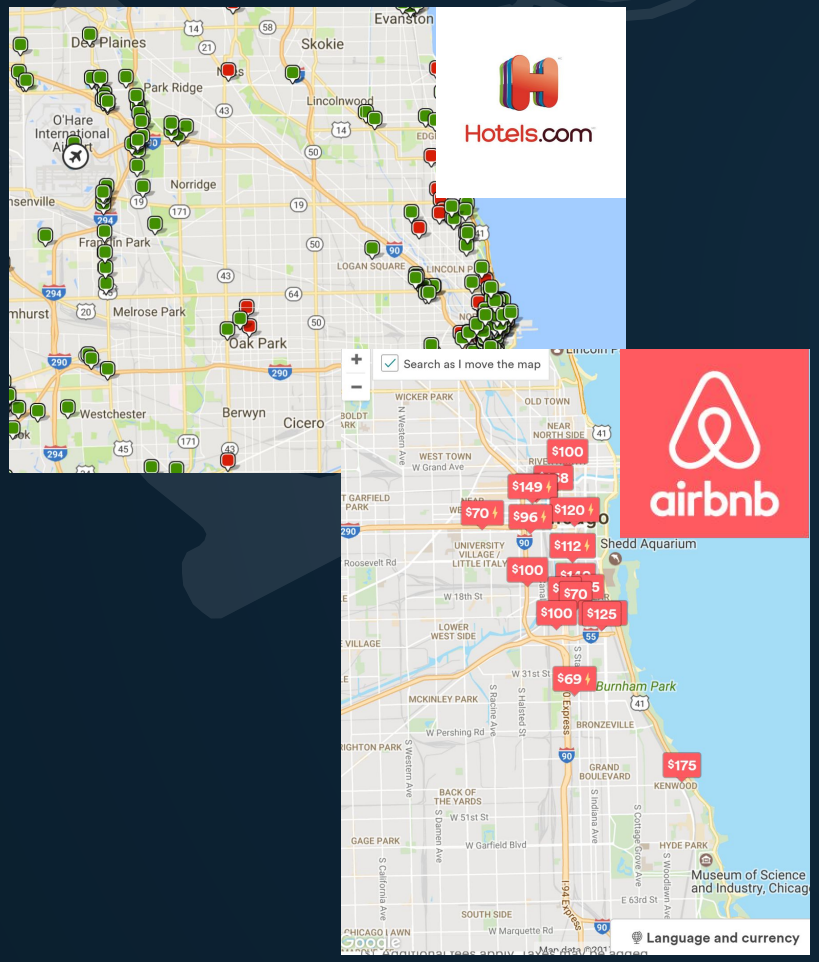
PRESENTED BY Team: Chicago Explorer

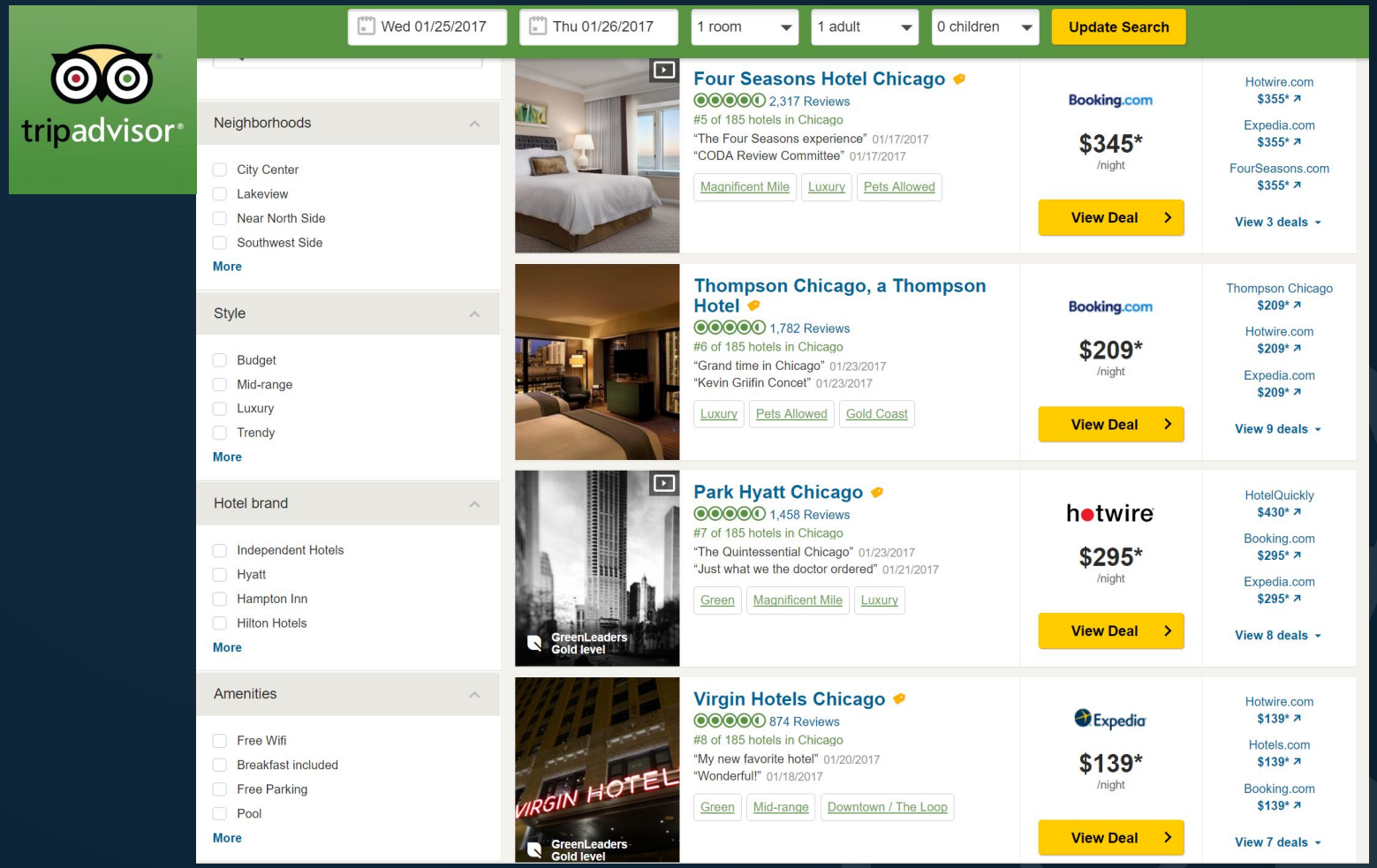
Jan 25, 2017

Contents

Part I. Introduction & Goals - Needs

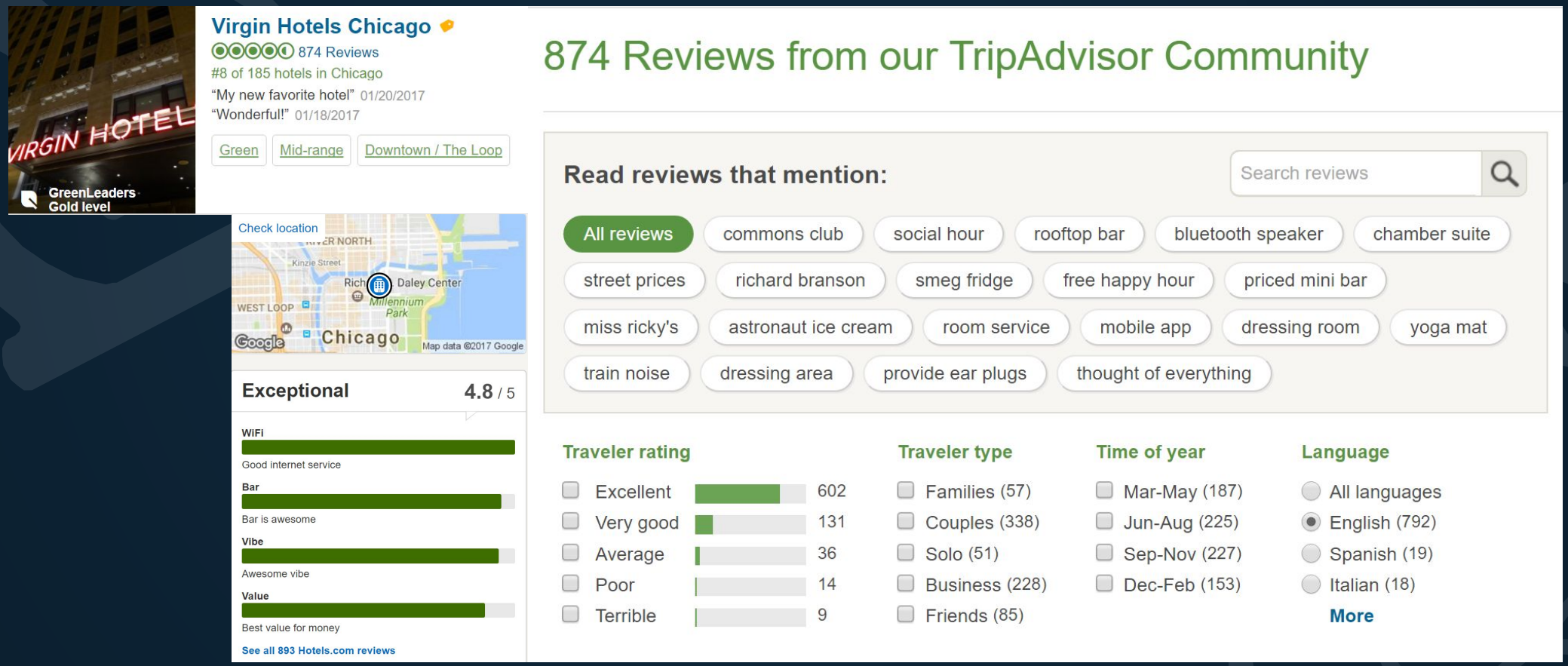
In 2016, Chicago set a visitation record of 54 million visitors.





Part I. Introduction & Goals - Problems!

a. Are the surroundings safe to walk around?
b. Is it convenient to drive to/take public transport to my desired attractions?
c. Is there good food to my taste within walking distance?



Part I. Introduction & Goals - User Interface: Inputs

http://www.chicagowanderlust.com/

Find within a click clicks,
- a safe, convenient, and tasty experience for your stay in Chicago!

Check-in 01/25/17 Wednesday
Check-out 01/26/17 Thursday
1 Night

Price Range
Min ($) 80
Max ($) 150

Good Food Around? Yes
Type(s) of Cuisine You Like

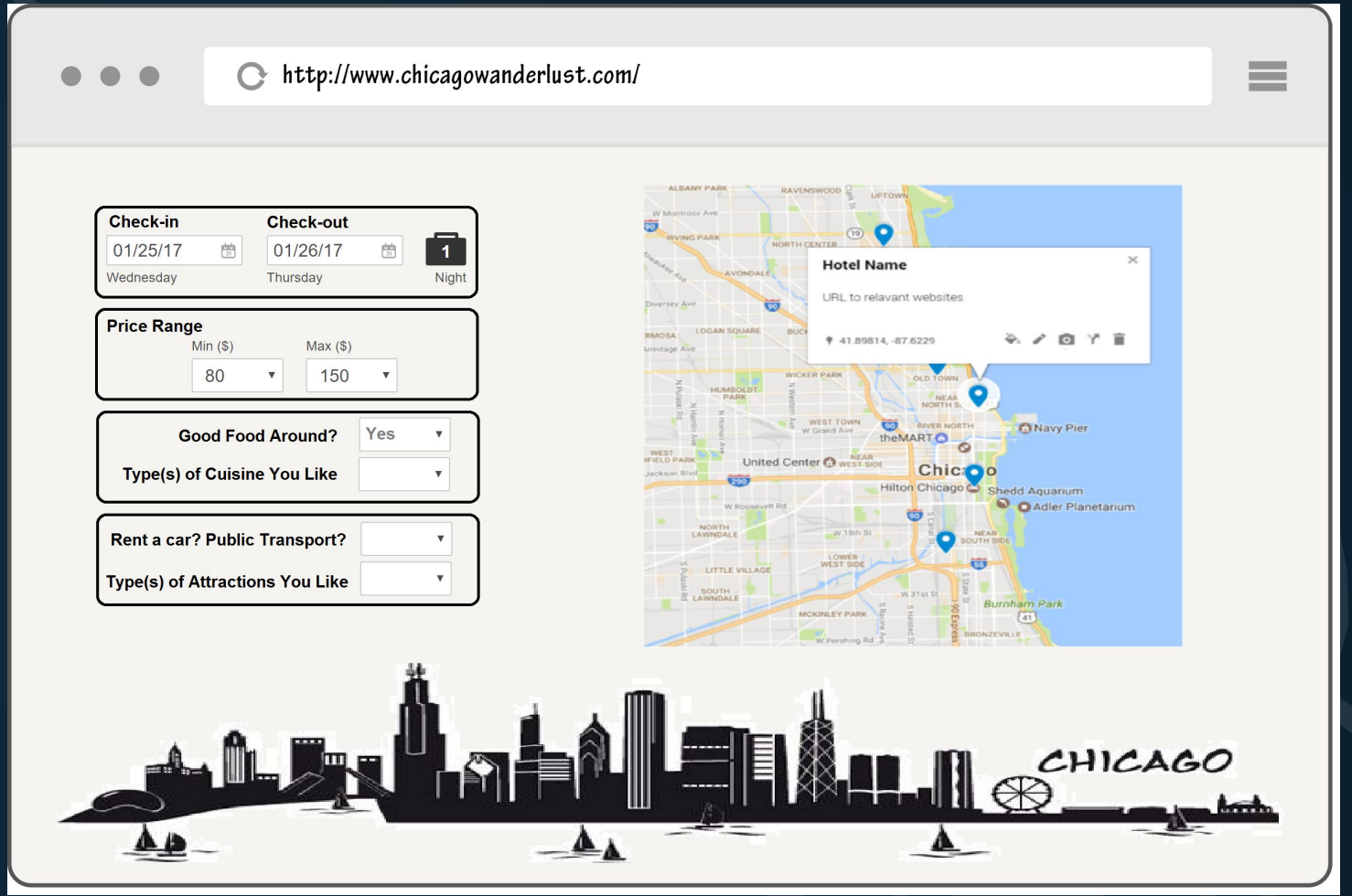
Rent a car? Public Transport?
Type(s) of Attractions You Like

Part I. Introduction & Goals - User Interface: Outputs

Recommend the Top 5 Places for Your Stay

X Dangerous neighborhoods
X Unfavorably reviewed places
X Hassle comparing hotels & Airbnbs

√ Easy access to your desired attractions
√ Easy to get food to your taste



Part I. Introduction & Goals - Goals

A. *Develop a scoring algorithm that reasonably captures the accessibility of a particular location to multiple places of interest.*
B. *Improve the efficiency of real-time data scraping.*
C. *Effectively manage the relational databases of crimes and attractions.*
D. *Design a friendly and interactive user interface.*

- Make full use of the knowledge acquired in CS122 and self-teach additional skills in data cleaning, consolidation, and visualization, as well as in web development.

Part II. Fantastic Data and Where to Find Them

Category	Type	Source	
Hotel	real-time request	TripAdvisor	Airbnb
Appetite	real-time request	Yelp	
Convenience	real-time request / pre-stored	Timeout Chicago	Google Maps
Safety	pre-stored database	City of Chicago Data Portal	


Part III. Tools and Useful Techniques

Stage	Tool
Data gathering	Scrapy, BeautifulSoup (for closed-source website)
	API (for open-source website)
Data Cleaning	Data Wrangler, Pandas, Numpy, RegExr
Data consolidation	SQL
Web Development Framework	Django
Front-End Framework	Bootstrap
Data visualization	Plotly, D3, Tableau, Bokeh (TBD)

Part III. New Tools to learn

- Python Based
- Fast
- Export data in common format

Scrapy

- Accelerate the data cleaning process

Trifacta Wrangler

TRIFACTA

- Tons of packages
- Supportive community
- Built-In Admin Panel

Django

django

- Robust framework for beginner
- Responsive web design
- Flexible and allow modification

Bootstrap

Bootstrap

- Abstract insight from data
- Allow Interactive graph

Visualization Tools

plotly

Part IV. Tentative Timeline

Checkpoint 1 (Week 6)	Checkpoint 2 (Week 8)	Presentation (Week 10)
• Sufficient experiments on sample datasets • Finalize recommendation model • Decide high level architect: data structure, recommendation algorithm, user interaction, etc. • Pseudo-code	Frontend: • User interface based on selected data • Google map integration and other visualization Backend: • Construct pre-stored database • Optimize real-time data request • Implement search and recommendation algorithm	• Link frontend, backend, database • Implement manual tests • Final modification and documentation • Reflect on future enhancement