CraigMaps
CS5610 Web Development Project Report

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Problem statement

To search for rentals, we use Craigslist and then to check if the place is closeby our work/school address, we search the google maps to check on the distance and time taken to travel from the rental listing's address.

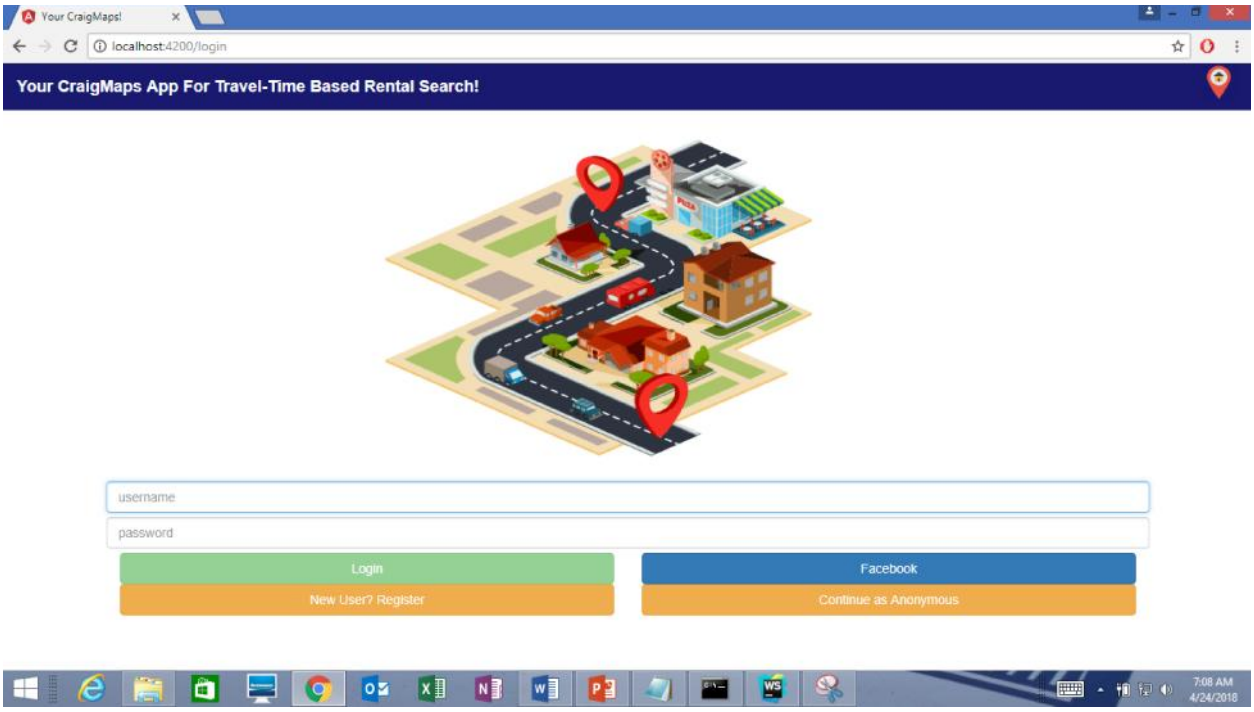
It would be nice to have one search that recommends the rentals based on time taken to travel to the office, instead of, the user had to calculate the distance and then have to compare for the reasonable rent closer to the destination. **Thanks to Professor Ming** for this entire idea! **:)**

Proposed Solution

My project is presenting an app which suggests the rentals based on your time for travel. Hence the name Craigslist + Google maps = CraigMaps .

My Project CraigMaps

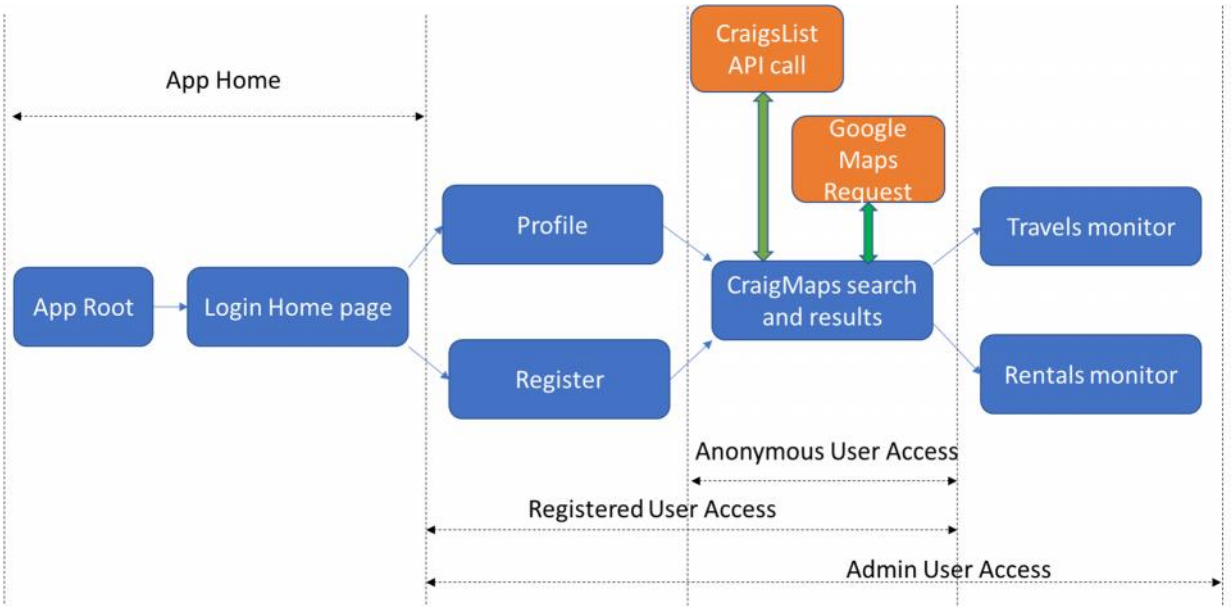
- Heroku Link: https://craigmaps.herokuapp.com/login [Project's Home Page]
  https://craigmaps.herokuapp.com/ [Both project and assignment route]
- Github repository: https://git.heroku.com/craigmaps.git
  Release: 1.0 , Tag: "CraigMaps v1.0 Rathi WebDev Project"



Design

Web Components, External API and Users interactions

Here is the flow and component interactions:



Features of App

- Made use of **2 External API** calls:
  - ✓ **Craigslist** [for Rental]
  - ✓ **Google Maps** [for Routes from rental to Destination]
- Results are shown **sorted** by the time taken to travel to destination.
- Results are shown in **tabular format** which also **includes the craigslist URL for each listing**.
- Results render a **chart** analyzed on location of rental in relevance to distance and time of travel to destination.
- All users have access to **search results** including **anonymous user** where they can search and view results.
- **Admin users** alone get to monitor app results for rentals and travels.
- Each webpage has access back to home page and to profile for logout.
- **Facebook login** feature.
- **Secured login and logout** for registered users.

Classes, Objects and Variables

User is the class used and it has a field 'admin' to determine if the user has special privileges of monitoring the app.

The search takes in values of **City for rental** and **budget range** of less than $5000(Default)**.** $5000 to $10000 and $10000 to $15000.

It asks for Destination **address/city the user commutes to** along with **mode of transport** which is similar to Google Maps mode as DRIVING(Default value), WALKING, BICYCLING and TRANSIT.

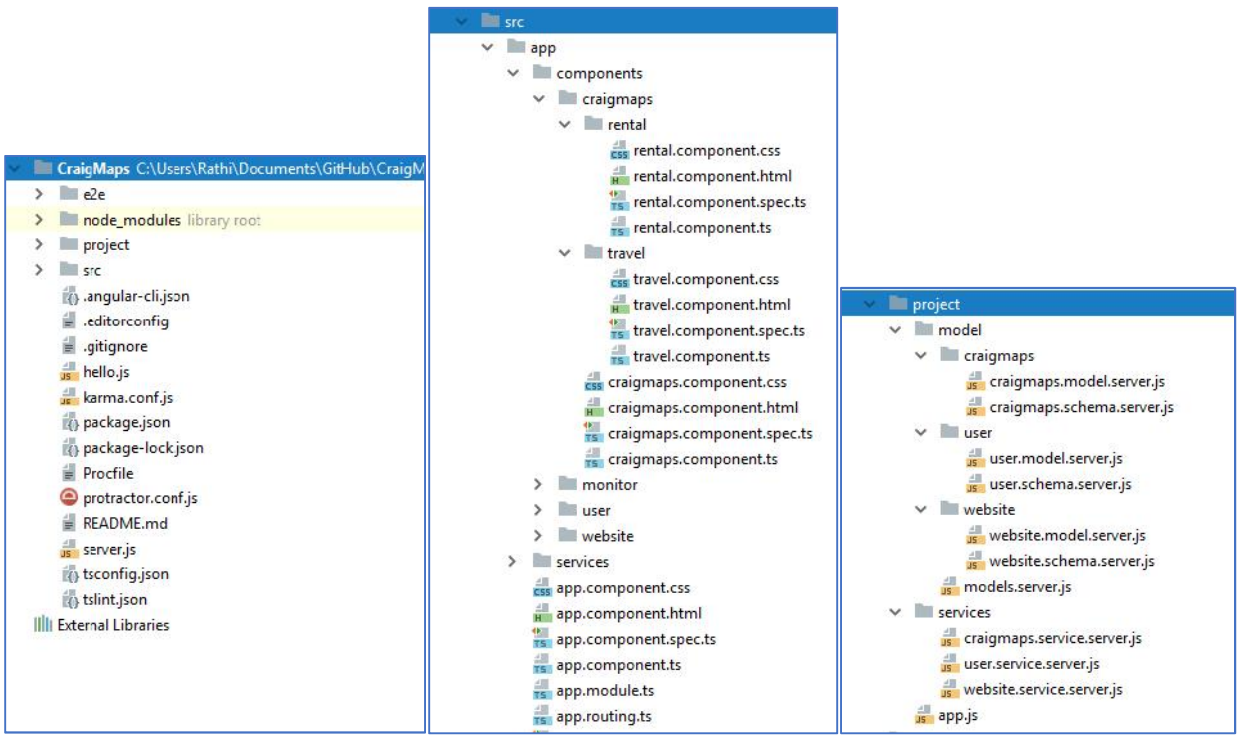
Implementation

Algorithm

1) Fetch all the rentals of the city with budget constraints through Craigslist 'search()' method.
    a. For each rental got from craigslist, calculate the time taken to travel using the Google Maps 'route()' method/request call.
    b. Combine the rental info with the travel distance and duration info for each record
2) Return results
3) Render as tables and charts

Folder structure and file organization

APP CLIENT SERVER



Results

- ➔ Results of the specified rent range are shown in table which are Sorted by Rent and time to destination and analysis of chart is shown
- ➔ Could see that the more distance, less price and the more time, less rent for Seattle downtown areas! Which is pretty much the case that living nearby the downtown area is expensive!

Charts:

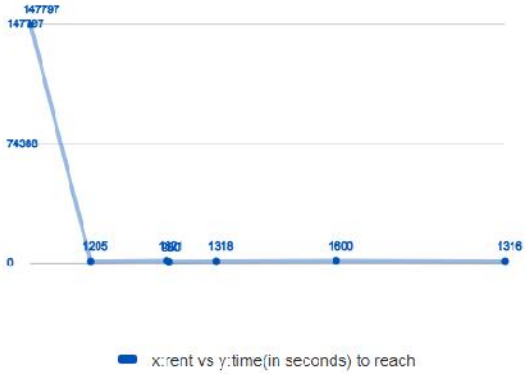


Table:

House Location	*Rent*	*Time to reach*	*Distance*	*Craigslist on Details*
SLUDenny Triangle Cap Hill	$5250			https://seattle.craigslist.org/see/apa/d/new-beautiful-2-bed-2-bath/6569433464.html
Bothell	$5209	20 mins	8.7 mi	https://seattle.craigslist.org/sno/apa/d/extended-patio-with-wetland/6569619433.html
UDistrictUniversity District	$5600	22 mins	14.4 mi	https://seattle.craigslist.org/see/apa/d/7-bedrooms-3-bath-udistrict/6559461236.html
Medina	$5495			https://seattle.craigslist.org/see/apa/d/house-golf-course-view-for/6569510277.html
Bellevue	$5454	16 mins	8.0 mi	https://seattle.craigslist.org/est/apa/d/come-see-your-new-view-of-the/6569336381.html
Washington ParkMadison Park	$6500	22 mins	13.7 mi	https://seattle.craigslist.org/see/apa/d/prime-washington-park-view/6569632142.html
DowntownPioneer Square	$5974	27 mins	16.2 mi	https://seattle.craigslist.org/see/apa/d/only-penthouse-in-seattle-you/6551175726.html

Implementation Notes

The craigslist search is constrained to a total of by about 50 records as the Google Maps request allowed per day is about 5000 for free Google API access. This can be relaxed in future to render any number of results.

Testing (Functional Testing with DETAILED steps)

Testing Notes

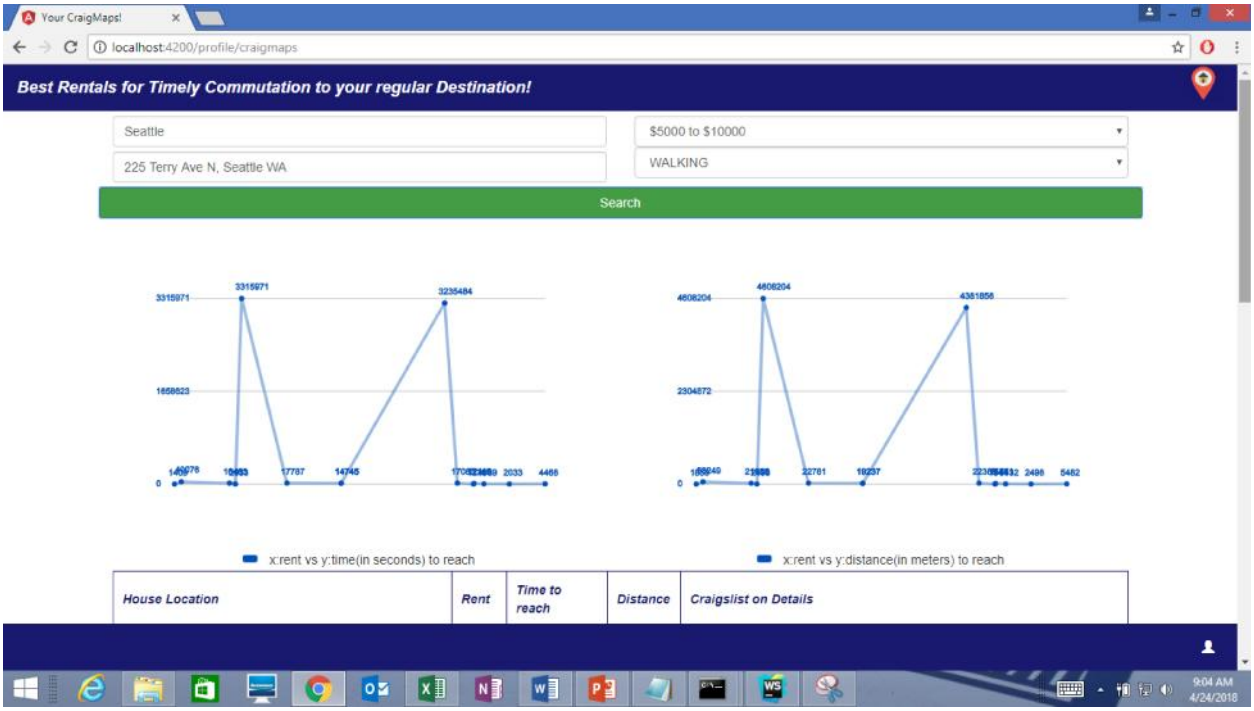
1. Have already created users:
    a. admin/admin -> with admin role
    b. dan/dan -> registered user
2. Please give only the one-word city name for 'City' input field
3. Results are restricted for few rows as Google maps only few requests per day for free API subscriptions
4. Sample inputs:
    a. City: Seattle
    b. Address to commute to: 225 Terry Ave N, Seattle, WA
    c. Rent: $5000 - $10000
    d. Mode: DRIVING

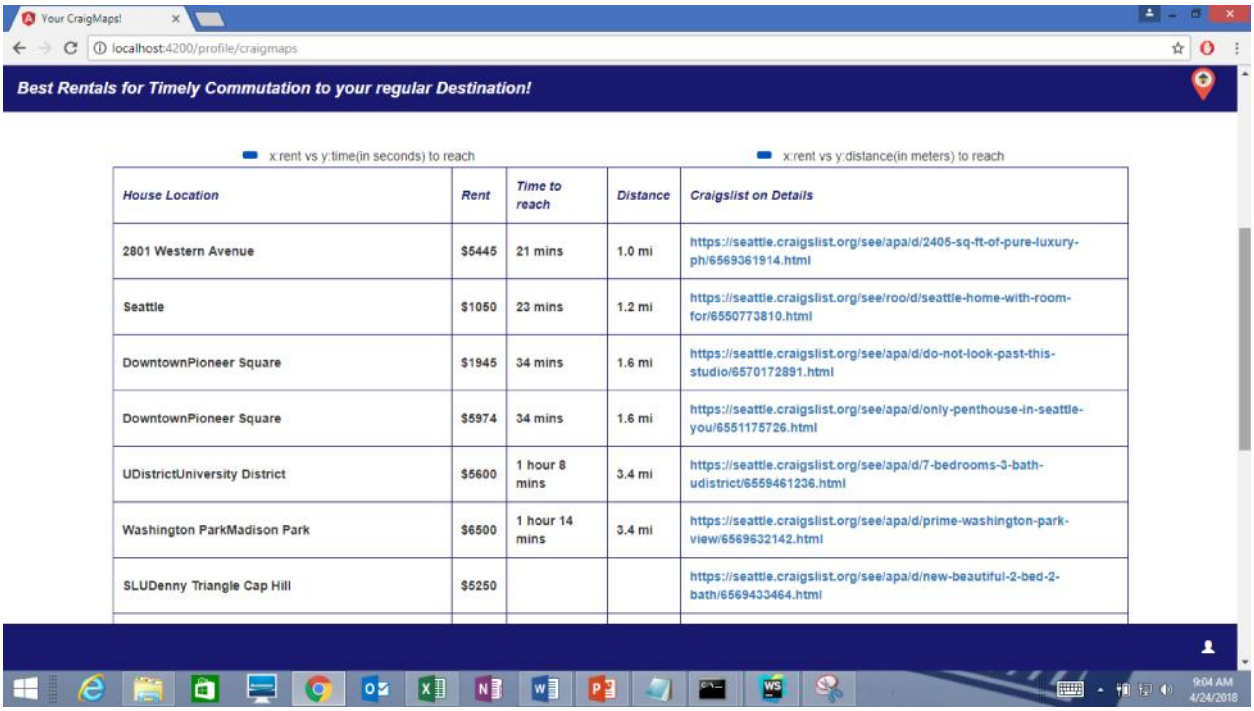
Tests Done

1) Successful App Main Objective functionality for Registered user (dan/dan)

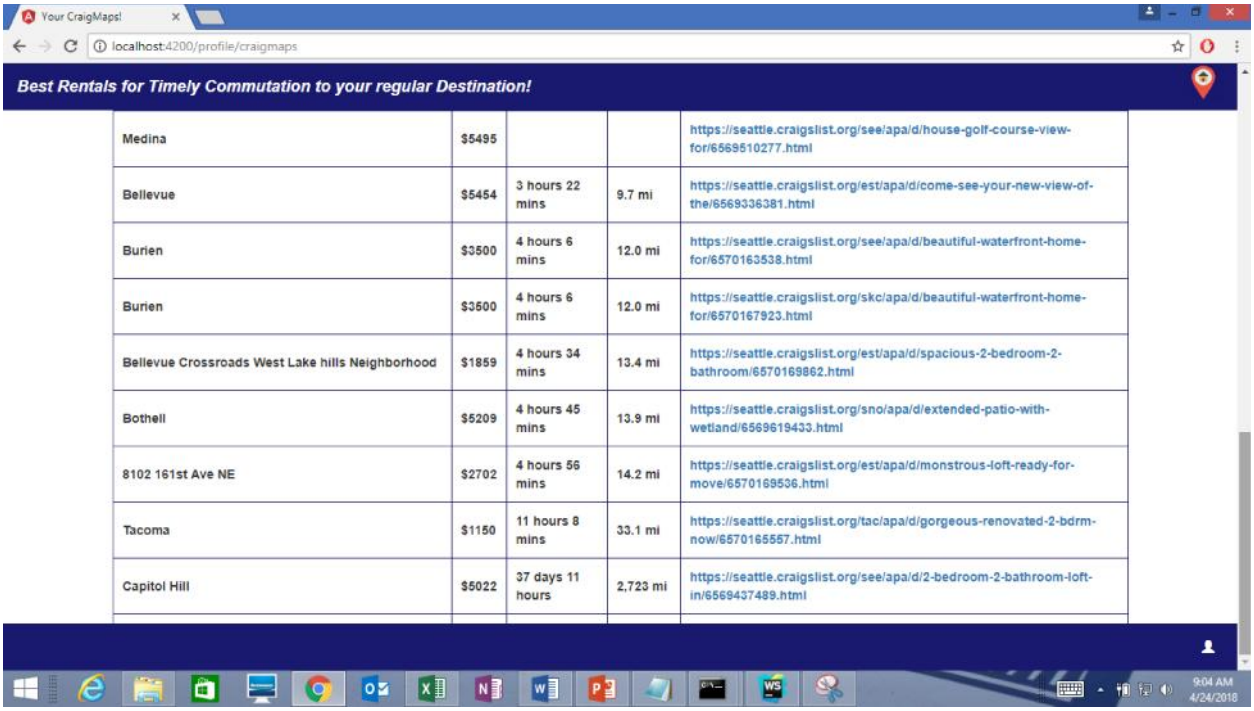
➔ Results of the specified rent range are shown in table which are Sorted by time to destination and analysis chart is shown

➔ Could see that the more distance, less price and the more time, less rent for Seattle downtown areas! Which is pretty much the case that living nearby the downtown area is expensive!



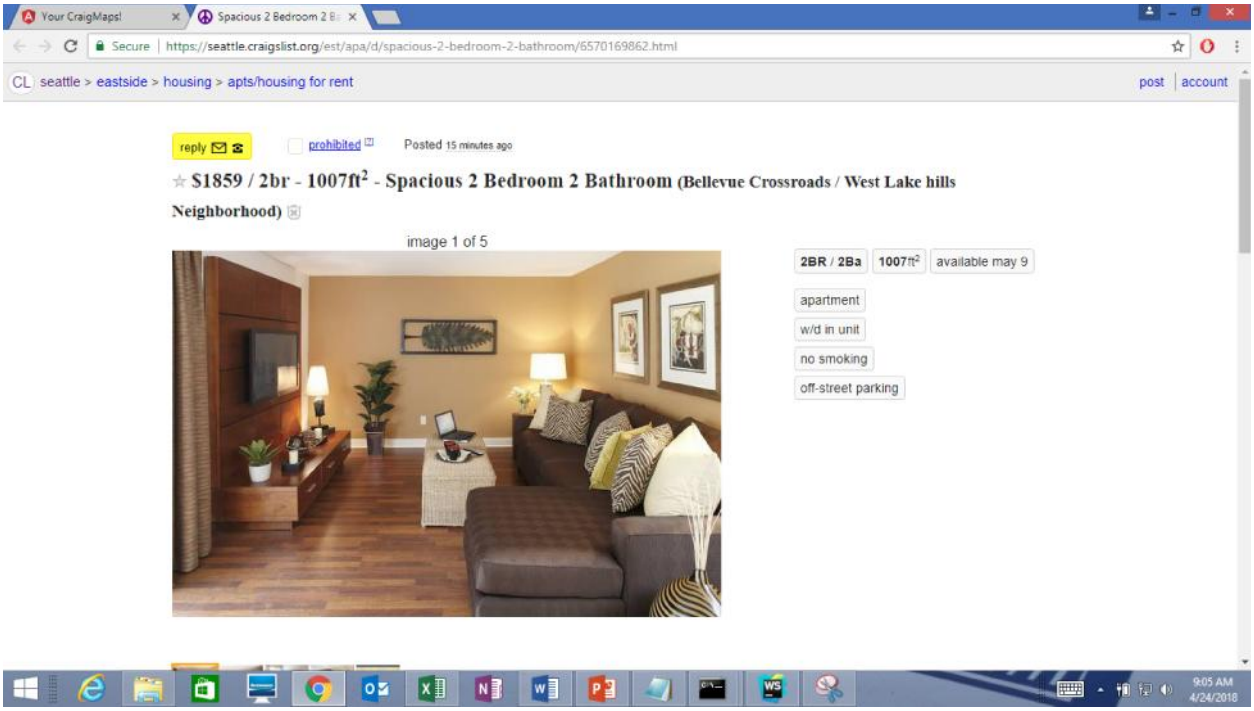


House Location	Rent	Time to reach	Distance	Craigslist on Details
2801 Western Avenue	$5445	21 mins	1.0 mi	https://seattle.craigslist.org/see/apa/d/2405-sq-ft-of-pure-luxury-ph/6569361914.html
Seattle	$1050	23 mins	1.2 mi	https://seattle.craigslist.org/see/roo/d/seattle-home-with-room-for/6550773810.html
DowntownPioneer Square	$1945	34 mins	1.6 mi	https://seattle.craigslist.org/see/apa/d/do-not-look-past-this-studio/6570172891.html
DowntownPioneer Square	$5974	34 mins	1.6 mi	https://seattle.craigslist.org/see/apa/d/only-penthouse-in-seattle-you/6551175726.html
UDistrictUniversity District	$5600	1 hour 8 mins	3.4 mi	https://seattle.craigslist.org/see/apa/d/7-bedrooms-3-bath-udistrict/6559461236.html
Washington ParkMadison Park	$6500	1 hour 14 mins	3.4 mi	https://seattle.craigslist.org/see/apa/d/prime-washington-park-view/6569632142.html
SLUDenny Triangle Cap Hill	$5250			https://seattle.craigslist.org/see/apa/d/new-beautiful-2-bed-2-bath/6569433464.html



Medina	$5495			https://seattle.craigslist.org/see/apa/d/house-golf-course-view-for/6569510277.html
Bellevue	$5454	3 hours 22 mins	9.7 mi	https://seattle.craigslist.org/est/apa/d/come-see-your-new-view-of-the/6569336381.html
Burien	$3500	4 hours 6 mins	12.0 mi	https://seattle.craigslist.org/see/apa/d/beautiful-waterfront-home-for/6570163538.html
Burien	$3500	4 hours 6 mins	12.0 mi	https://seattle.craigslist.org/skc/apa/d/beautiful-waterfront-home-for/6570167923.html
Bellevue Crossroads West Lake hills Neighborhood	$1859	4 hours 34 mins	13.4 mi	https://seattle.craigslist.org/est/apa/d/spacious-2-bedroom-2-bathroom/6570169862.html
Bothell	$5209	4 hours 45 mins	13.9 mi	https://seattle.craigslist.org/sno/apa/d/extended-patio-with-wetland/6569619433.html
8102 161st Ave NE	$2702	4 hours 56 mins	14.2 mi	https://seattle.craigslist.org/est/apa/d/monstrous-loft-ready-for-move/6570169536.html
Tacoma	$1150	11 hours 8 mins	33.1 mi	https://seattle.craigslist.org/tac/apa/d/gorgeous-renovated-2-bdrm-now/6570165557.html
Capitol Hill	$5022	37 days 11 hours	2,723 mi	https://seattle.craigslist.org/see/apa/d/2-bedroom-2-bathroom-loft-in/6569437489.html

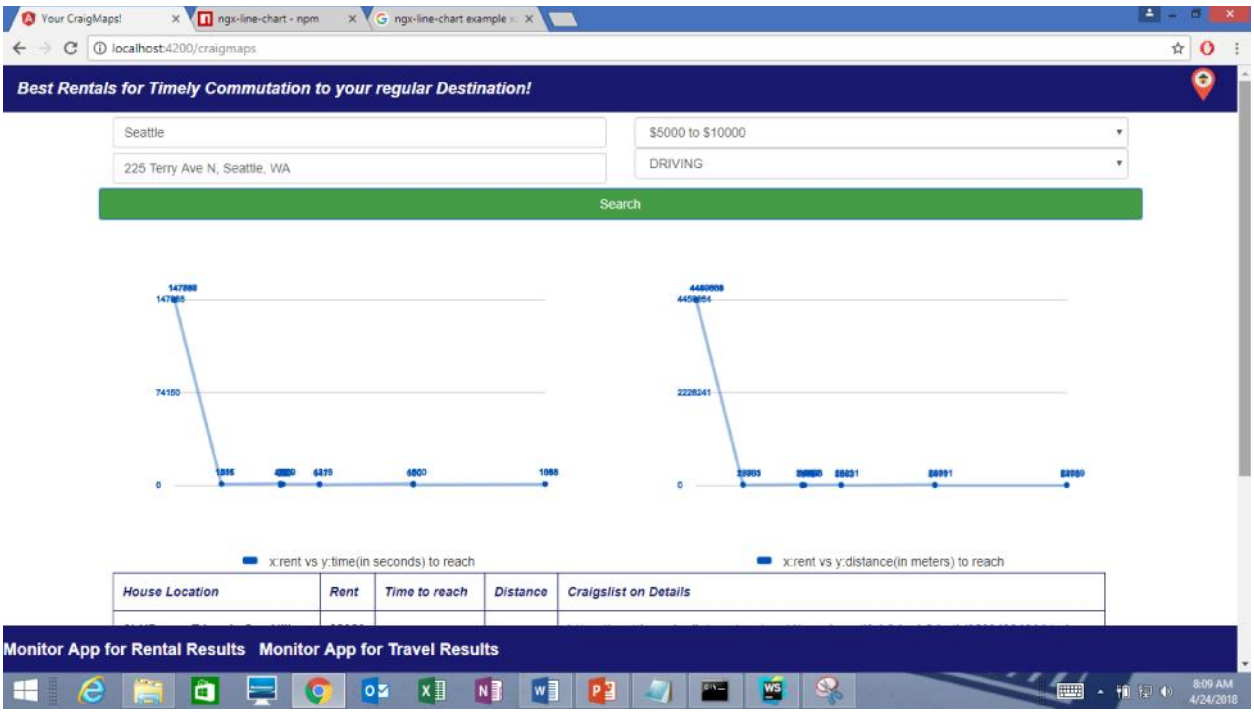
2) Opens craigslist for details in separate window

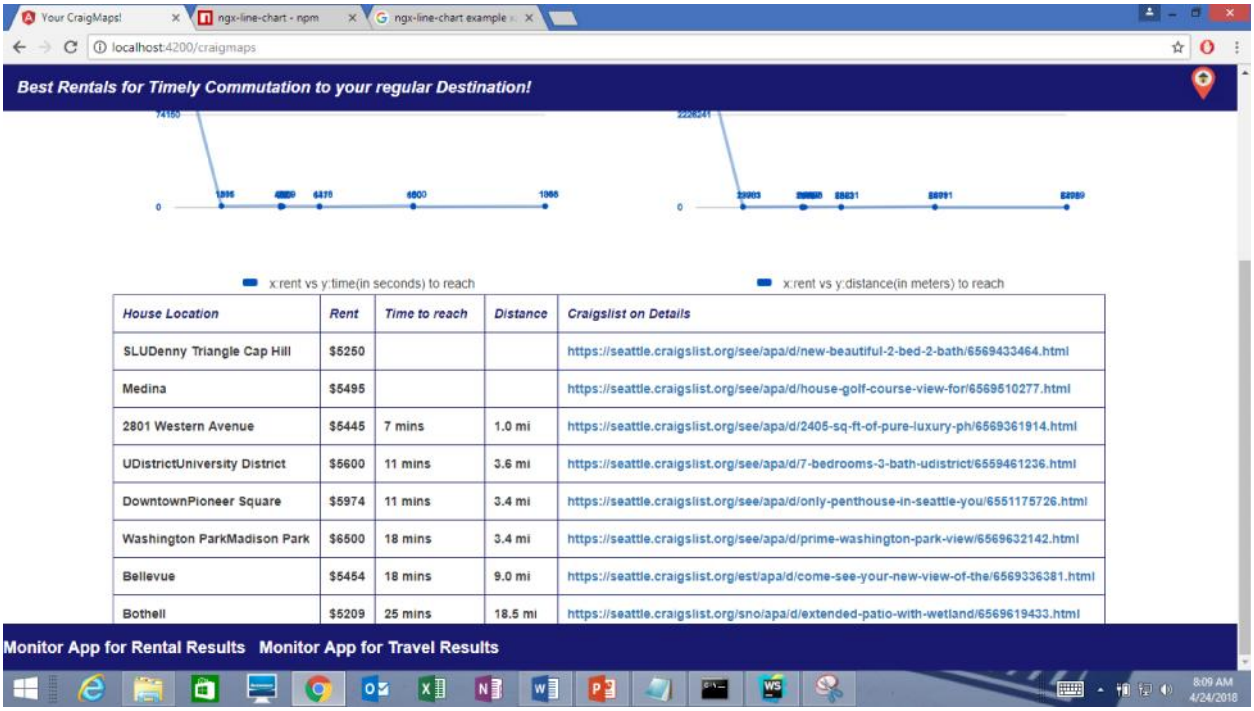


3) Registered user cannot monitor but can access profile

→ Sucessfully shows only the user icon access to profile but not monitor links

4) Successful App Main Objective functionality for Anonymous user





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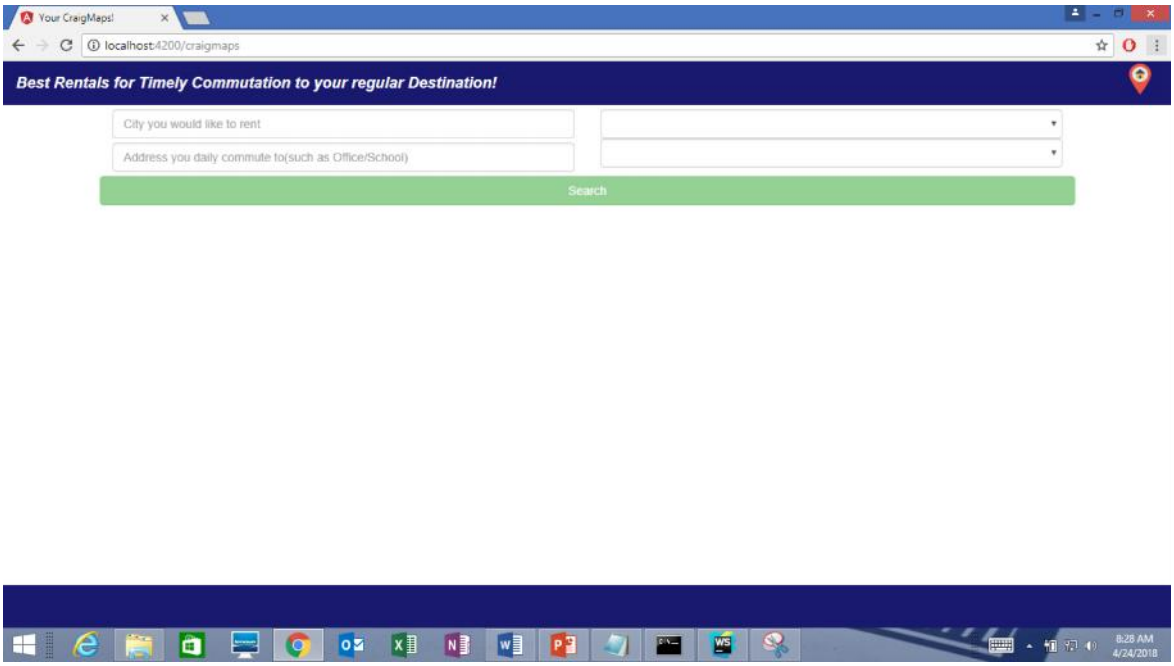
Bellevue	$5454	18 mins	9.0 mi	https://seattle.craigslist.org/est/apa/d/come-see-your-new-view-of-the/6569336381.html
Bothell	$5209	25 mins	18.5 mi	https://seattle.craigslist.org/sno/apa/d/extended-patio-with-wetland/6569619433.html

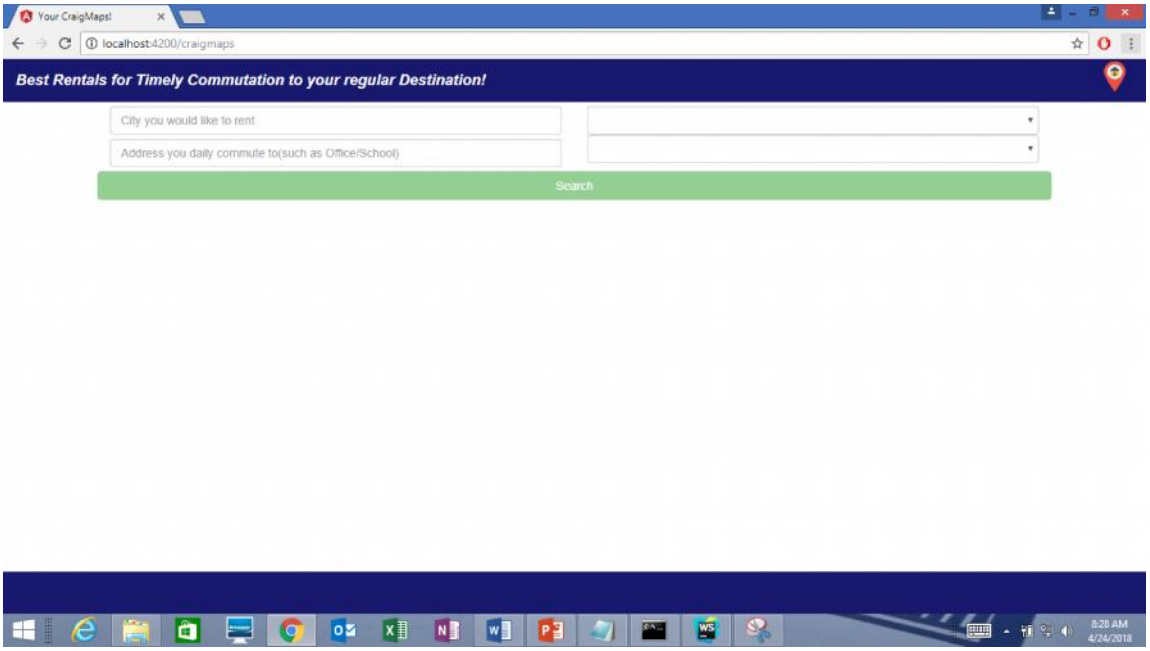
5) Anonymous has no profile access

➔ Successfully, does not show the user icon in the bottom bar for anonymous



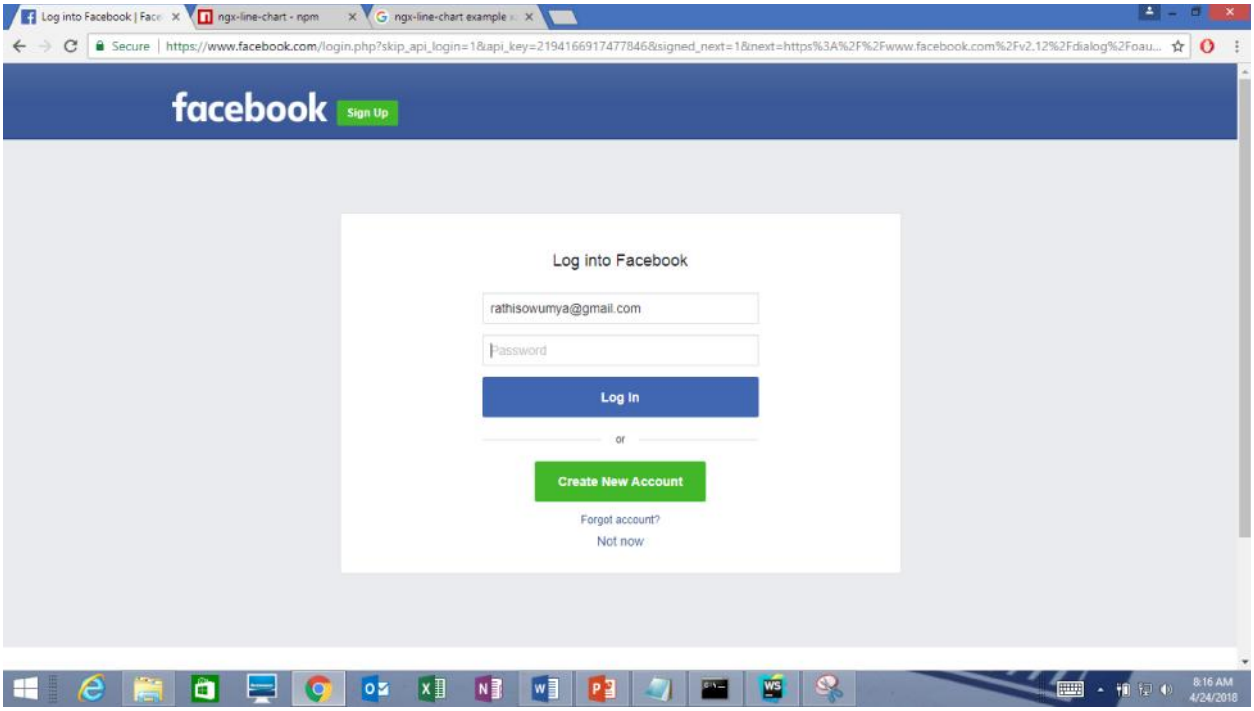
6) Anonymous cannot monitor

➔ Successfully, does not show the monitor links in the bottom bar for anonymous



7) Logo click takes to homepage in every page perfectly

8) Facebook login allowed is perfectly allowed from homepage



9) CRUD for user -> Register, Update, Delete new user

→ CRUD opertions for user is successful through profile and register components

10) Admin can monitor

→ Sucessfully shows user icon along with monitor links

→Also, the monitor pages are accessible for both rental and travel

Conclusion

App in Heroku

The App is successfully hosted in Heroku https://craigmaps.herokuapp.com/login and can be accessed for usage.

Future Improvements

If many users are using this app, then Google API subscription can be taken, to make any number of requests to Google API for route caculations.

Send suggestions for registered users for seasonal rentals.

Other rental search attributes like 'nearby' can be added for results.

Conclusion Thoughts

Doing this project was real fun! Thanks to **Professor Ming** for this idea and to TA **Hunter** for the support.