YelpViz

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GitHub: https://github.com/kulaphongj/yelp_api_wrapper.git

Project Focus

Engaging visualization of business-related information

Yelp API Description and Sample



Key Features of API:

- Business Search: Filter by type and location.
- Reviews: Access ratings and reviews.
- Business Details: Get comprehensive business information, photos, and transactions.

Sample API Data:

```
Business Search: https://docs.developer.yelp.com/reference/v3_business_search {
    "businesses": [
    { "id": "BK7Zihw8zgA-mPtgJ5Z68g", "alias": "the-fixx-cafe-and-pasta-bar-kelowna", "name": "The Fixx Cafe & Pasta Bar", "image_url":
    "https://sa-media1.fl.yelpcdn.com/bphoto/_EKk75v7GXRO5m9Pgpuq0A/o.jpg", "is_closed": false, "url":
    "https://www.yelp.com/biz/the-fixx-cafe-and-pasta-bar-kelowna?adjust_creative=zTrWZea84rw1TL1bk_H 5dg&utm_campaign=yelp_api_v3&utm_medium=api_v3_business_search&utm_source=zTrWZea84rw1TL1bk_H5dg%. "review_count": 55, "categories": { "lalias": "italian", "itite": "Italian" } }, "rating": 4.5, "coordinates": { "latitude": 49.854545, "longitude": -119.401002, "ransaactions": "price: "s$s", "location": { "address1": "3275 Lakeshore Road", "address2": "", "address3": "", "city": "Kelowna", "zip_code": "V1W 3S9", "country": "CA", "state": "BC", "display_address3": [ "3275 Lakeshore Road", "Kelowna, BC V1W 3S9", "Canada"] }, "phone": "+12508613499", "display_phone": "+1 250-861-3499", "distance": 2429.963069437153
    }
    ], "total": 530, "region": {
    "center": { "longitude": -119.46739196777344, "latitude": 49.874237132659104
    }
}
```

Function 1: Search Businesses



Purpose: Simplify Yelp business searches and data gathering.

1. search_businesses:(up to 50 entries)

Purpose: Targeted Yelp search

Params: api_key, location, business_type, keyword, offset, limit

Function: Fetches Yelp business listings

2. get_all_businesses: (necessary to get more than 50 data)

Purpose: Aggregates detailed business data

Params: Inherits search_businesses params, adds total

Function: Collects specified number of results

Sample Output:

```
{'name': 'Nara Restaurant & Sake Bar', 'address': '518 Haight St San Francisco, CA 94117', 'rating': 4.5, 'category': 'Japanese, Sushi Bars'}
{'name': "Ryoko's", 'address': '619 Taylor St San Francisco, CA 94102', 'rating': 4.0, 'category': 'Sushi Bars, Japanese, Bars'}
{'name': "Akiko's Restaurant", 'address': '430 Folsom St San Francisco, CA 94105', 'rating': 4.0, 'category': 'Sushi Bars, Japanese'}
{'name': 'Tataki', 'address': '2827 California St San Francisco, CA 94115', 'rating': 4.0, 'category': 'Sushi Bars, Bars'}
{'name': 'Sushi Goemon', 'address': '1524 Irving St San Francisco, CA 94121', 'rating': 4.5, 'category': 'Japanese, Sushi Bars'}
{'name': 'The Public Izakaya', 'address': '700 Post St San Francisco, CA 94109', 'rating': 4.5, 'category': 'Izakaya, Sushi Bars, Ramen'}
{'name': 'Saru Sushi Bar', 'address': '4036 Balboa St San Francisco, CA 94114', 'rating': 4.5, 'category': 'Sushi Bars, Japanese, Seafood'}
{'name': 'Kazoku Sushi', 'address': '4036 Balboa St San Francisco, CA 94121', 'rating': 4.5, 'category': 'Sushi Bars, Japanese'}
{'name': 'Kui Shin Bo', 'address': '22 Peace Plz Fl 2 San Francisco, CA 94115', 'rating': 4.0, 'category': 'Japanese, Sushi Bars'}
{'name': 'Mamanoko', 'address': '2317 Chestnut St San Francisco, CA 94123', 'rating': 4.5, 'category': 'Japanese, Cocktail Bars, Sushi Bars'}
```

Function 2: Create Word Cloud



Purpose:

Generates a word cloud from Yelp business data, weighted by ratings and review counts.

Params:

'data' - Business data from Yelp search results.

Function:

- Maps business names to weighted ratings.
- Creates a word cloud visualization.
- Displays word cloud.

Sample Output:

sushi <- get_all_businesses(api_key = api_key, 'kelowna','restaurants','sushi')
create_word_cloud(sushi)</pre>



Function 3: Create Geo Heatmap



Purpose: Visualize the price/rating/reviews heatmap on a map.

Params:

data: Business data from Yelp search results.

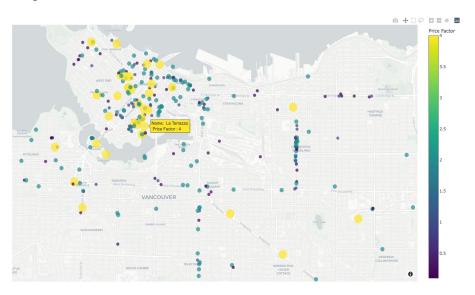
value: ('price_level', 'rating', 'count reviews', 'weighted rating')

Function:

Plot the heatmap of price level, rating, number of review, weighted rating on a map.

Sample Output:

fig <- create_geo_heatmap(df_business, factor_plot="price_factor")
fig</pre>



Function 4: Analyze Rating Review



Purpose: simplify business analytics/visualization

Sample Output:

1. analyze_cities

Purpose: retrieves business ratings across multiple cities

Params: api_key, location, categories, limit
Function: aggregated ratings for location(s)
visualized

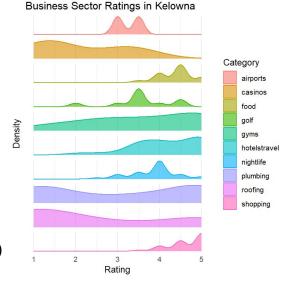
2. analyze_business_sectors

Purpose: retrieves business sector ratings within one city

Params: api_key, location, categories, limit

Function: aggregated ratings for business(es)

visualized



Business Ratings in the Golf Sector Calgary London New York City Red Deer San Francisco Tokyo Vancouver 4

Rating

location <- c('Kelowna', 'Seattle', 'London', 'Tokyo', 'Calgary', 'Vancouver', 'Toronto', 'Portland', 'New York City', 'San Francisco') result_cities <- analyze_cities(api_key, location, 'golf', 33)

Behind the Scene



- 1. Unit testing
- 2. Documentation (Roxygen2)
- 3. Vignette creation (Vignette)
- 4. Publishing the package via GitHub

Code Coverage



yelpviz coverage - 88.06%

Files	Source						
File		Lines +	Relevant +	Covered	Missed	Hits / Line	Coverage
R/analyze_cities.R		206	99	81	18	131	81.82%
R/analyze_business_sectors.R		204	99	83	16	131	83.84%
R/create_geo_heatmap.R		116	59	56	3	1	94.92%
R/create_word_cloud.R		47	15	15	0	4	100.00%
R/search_businesses.R		33	9	9	0	4	100.00%
R/get_all_businesses.R		32	8	8	0	2	100.00%

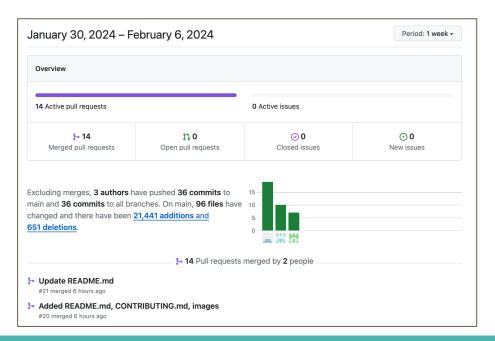
Contribution

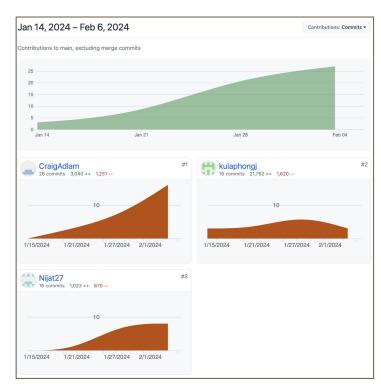


Nijiati Abulizi: create_word_cloud, get_all_businesses, search_businesses; presentation material

Kulaphong Jitareerat: create_geo_heatmap; GitHub Action, R package build

Craig Adlam: analyze_cities, analyze_business_sectors; README







Demonstration Time!



Thank You