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Computer Science 250

Progress Report 2

Our group faced multiple challenges while trying to implement multiple components of our project. The main issue, which we are still encountering, is when compiling the list of venues that the search. The issue here is that occasionally venues will be added to the master list of venues that were returned twice despite checks having been put in place to try and prevent/solve this issue. This can be seen in the following screenshot of the terminal output of searching for

```
15: Halfmoon Diner- ['231 Grooms Rd (Rt. 9)', 'Halfmoon, NY 12065', 'United States']
16: Capital City Diner- ['1709 Western Ave (at Johnston Rd)', 'Albany, NY 12203', 'United States']
17: Route 7 Diner- ['1090 Troy Schenectady Rd', 'Latham, NY 12110', 'United States']
18: Country View Diner- ['855 Hoosick Rd', 'Troy, NY 12180', 'United States']
19: Duncan's Dairy Bar- ['890 Hoosick Rd', 'Troy, NY 12180', 'United States']
20: Latham 76 Diner- ['722 New Loudon Rd', 'Latham, NY 12110', 'United States']
21: Gateway Diner- ['899 Central Ave (btwn Colvin Ave and Everett Rd)', 'Albany, NY 12206', 'United States']
22: Western Diner- ['2019 Western Ave', 'Albany, NY 12203', 'United States']
23: Denny's- ['697 Troy Schenectady Rd (Wade Road Extension)', 'Latham, NY 12110', 'United States']
24: Denny's- ['126 Troy Rd (Luther Rd)', 'East Greenbush, NY 12061', 'United States']
25: Farmer Boy Diner & Restaurant- ['1975 Central Ave', 'Colonie, NY 12205', 'United States']
26: Colonie Diner- ['1890 Central Ave', 'Albany, NY 12205', 'United States']
27: Denny's- ['114 Wolf Rd (at Computer Dr W)', 'Colonie, NY 12205', 'United States']
28: Jack's Diner- ['547 Central Ave (Clinton Ave.)', 'Albany, NY 12206', 'United States']
29: Denny's- ['60 Nott Ter', 'Schenectady, NY 12308', 'United States']
30: Manory's Restaurant- ['99 Congress St', 'Troy, NY 12180', 'United States']
31: Dinertime- ['813 Loudon Rd', 'Latham, NY', 'United States']
32: Frank's- ['496 Albany Shaker Rd', 'Albany, NY 12211', 'United States']
33: South Troy Diner- ['579 1st St', 'Troy, NY 12180', 'United States']
34: Dan's Place Two- ['494 Washington Ave', 'Albany, NY 12203', 'United States']
35: Hometown Diner- ['19 Mall Way', 'West Sand Lake, NY', 'United States']
36: Ravena Diner- ['11 Madison Ave', 'Ravena, NY 12143', 'United States']
37: Tops American Grill & Bakery- ['351 Duanesburg Rd', 'Schenectady, NY 12306', 'United States']
38: Glenville Queen Diner- ['210 Saratoga Rd', 'Scotia, NY 12302', 'United States']
39: Alexis Diner- ['294 N Greenbush Rd', 'Troy, NY 12180', 'United States']
40: Broadway Lunch- ['2101 Broadway', 'Schenectady, NY 12306', 'United States']
41: Blue Ribbon Restaurant- ['1801 State St (btw Corlaer Ave & Marriott Ave)', 'Schenectady, NY 12304', 'United States']
42: Halfmoon Diner- ['231 Grooms Rd (Rt. 9)', 'Halfmoon, NY 12065', 'United States']
```

venues that meet user specifications. Here venue number 15, The Halfmoon Diner, can also be seen as venue number 42. However, this issue does not always occur and the reason for the repeat venues is still not understood. What is known about the issue is that the extra occurrences of the venues are not placed in the same location as they appeared initially. This means that if there are 60 venues returned and half of them are repeats, venue number 1 will not be repeated as venue number 31. Also, there is no way, at the moment, to figure out when this error will occur

in order to find a way to circumvent it by looking for signs that it will happen. In other words, the way the venues are returned and then organized is in a seemingly random order and as such cannot be easily predicted or anticipated. Another issue that we were able to overcome was with the documentation for the Foursquare API. While the API is a great resource for what we are trying to do, the documentation for it is not always the best. This became very apparent when trying to get information on each venue, like its address, hours, and other information. The endpoint that is given in the documentation and the format for all of the other functions we had been calling made it seem like the way to get the information was to use a method called ‘details’. However, upon trying to use the method, an error stating that the ‘details’ method did not exist. While this was not a major issue it was a roadblock that we had to devote time to try and figure out what the proper call was to get the information we needed. The last main issue

```
Unknown error. meta: {'errorDetail': 'Quota exceeded', 'errorType': 'quota_exceeded', 'requestId': '5ad7c6166a60717d2795bf8', 'code': 429}
Unknown error. meta: {'errorDetail': 'Quota exceeded', 'errorType': 'quota_exceeded', 'requestId': '5ad7c617dd579757415fb8b9', 'code': 429}
Unknown error. meta: {'errorDetail': 'Quota exceeded', 'errorType': 'quota_exceeded', 'requestId': '5ad7c619351e3d516389eedc', 'code': 429}
Traceback (most recent call last):
  File "main.py", line 23, in <module>
    users.append(main.createUser())
  File "/home/zach/cs250-FinalProject/main.py", line 55, in createUser
    category_id = foursquareTest.get_category_id(interest)
  File "/home/zach/cs250-FinalProject/foursquareTest.py", line 40, in get_category_id
    categories = api.venues.categories()
  File "/home/zach/.local/lib/python3.5/site-packages/foursquare/_init_.py", line 393, in categories
    return self.GET('categories', params=multi)
  File "/home/zach/.local/lib/python3.5/site-packages/foursquare/_init_.py", line 270, in GET
    return self.requester.GET(self._expanded_path(path), *args, **kwargs)
  File "/home/zach/.local/lib/python3.5/site-packages/foursquare/_init_.py", line 204, in GET
    result = _get(url, headers=headers, params=params)
  File "/home/zach/.local/lib/python3.5/site-packages/foursquare/_init_.py", line 758, in _get
    return _process_response(response)
  File "/home/zach/.local/lib/python3.5/site-packages/foursquare/_init_.py", line 787, in _process_response
    return _raise_error_from_response(data)
  File "/home/zach/.local/lib/python3.5/site-packages/foursquare/_init_.py", line 801, in _raise_error_from_response
    log_and_raise_exception('Unknown error. meta: {meta}')
  File "/home/zach/.local/lib/python3.5/site-packages/foursquare/_init_.py", line 746, in _log_and_raise_exception
    raise cls(u'{}: {}'.format(msg, data))
foursquare.FoursquareException: Unknown error. meta: {'errorDetail': 'Quota exceeded', 'errorType': 'quota_exceeded', 'requestId': '5ad7c619351e3d516389eedc', 'code': 429}
```

that I personally have faced is running out of access in the “Sandbox” Foursquare developer kit. This kit allows us to make 950 regular calls and 50 premium calls to the Foursquare servers every day. What this meant is that if I was testing a feature that required calling a premium feature, like getting the details for a venue, I had a limited number of tests I could do. This was

more of an inconvenience than an issue since I could simply make a new account and get a new keyset or simply wait 24 hours to have access to more premium calls.

We have also changed some of the structures that we built in order to streamline our program and remove unnecessary data and comparisons. The main restructuring involved removing the latitude and longitude options for a user and restricting them to only a city and state. This allowed for us to remove checks to see if there was a latitude and longitude entered when the user was created decreasing the complexity. This also removes the need to ask the user if they want to enter a latitude and longitude, which they probably won't know. The general overview of what the pseudocode would have to do has not changed, however, we have changed where some of the calls are made and what gets returned by functions. We have also refactored the program and placed similar functions into their own classes in order to make the code easier to understand and fix.

Since we are still working on getting all of the features of our project up and running we have not gone and calculated the time complexity for it yet. Also, because we do not have access to the backside of the Foursquare API we will only be able to calculate the time complexity of our code which may not be very accurate once a call is made to the Foursquare servers. However, we will be finishing up the features in the coming week and will then be able to properly figure out what the approximate complexity of our project is.