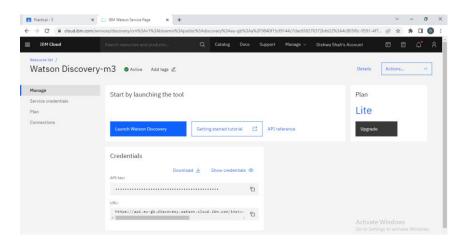
Institute of Computer Technology B. Tech Computer Science and Engineering Sub: Cognitive Computing (2CSE70E23)

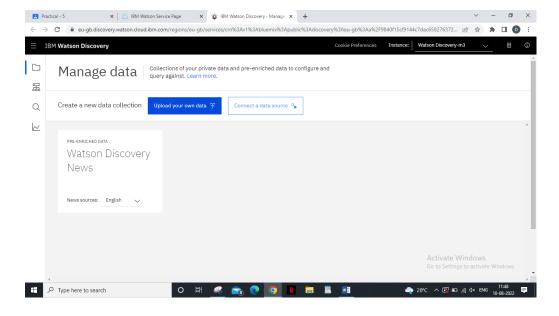
PRACTICAL 5: AIRBNB (WATSON DISCOVERY)

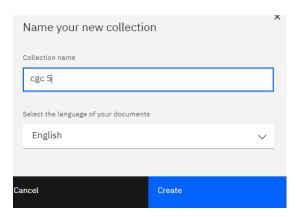
Smith as a Data analyst at AirBnb. His team is working on fine tune the overall experience of their customers visiting in Manhattan apartments. He is involved in this task and will gain insights from actual AirBnB reviews of Manhattan apartments. A typical query from other review engines may depict a certain apartment as most desirable to stay at. With the use of Watson Discovery to complete this task.

Open IBM Cloud and go to the Resource list of Watson Discovery.

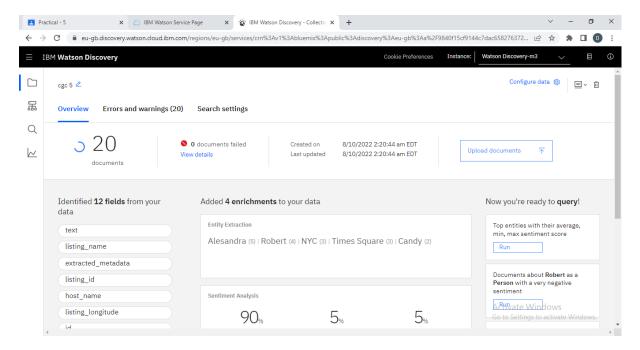


Launch Watson Discovery (made for cognitive search, to find out the insights). Click on Upload your own data.

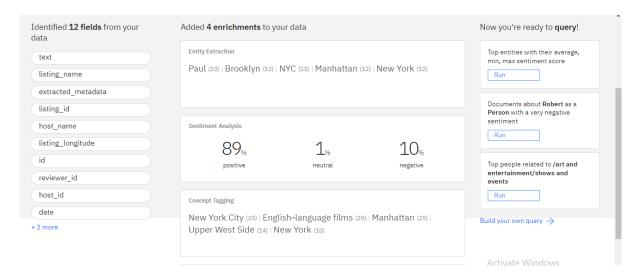




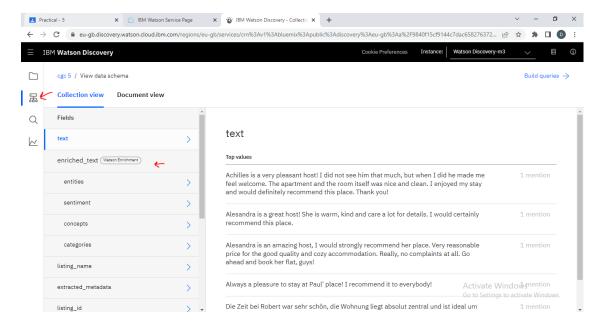
Upload all the files. The files will get processed now.



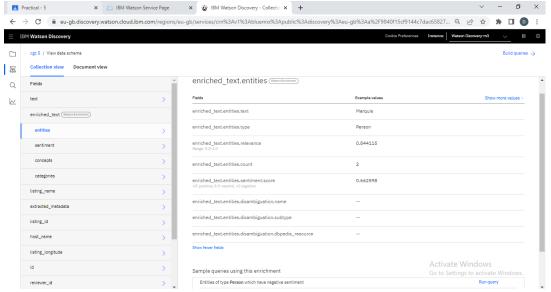
All files have been processed now. You can see various analysis of your data:



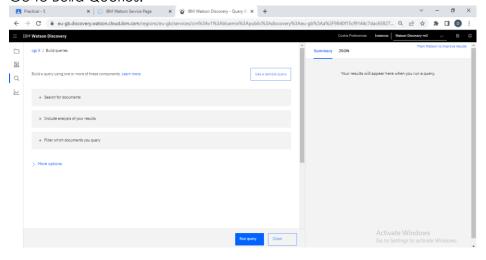
Go to Collection View and then to entities:



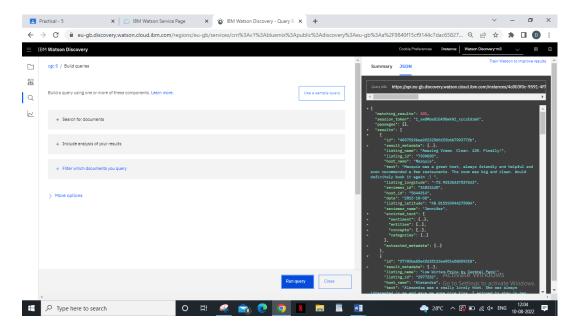
Enriched_text: Watson enrichment model. Observe:



Go to Build Queries.



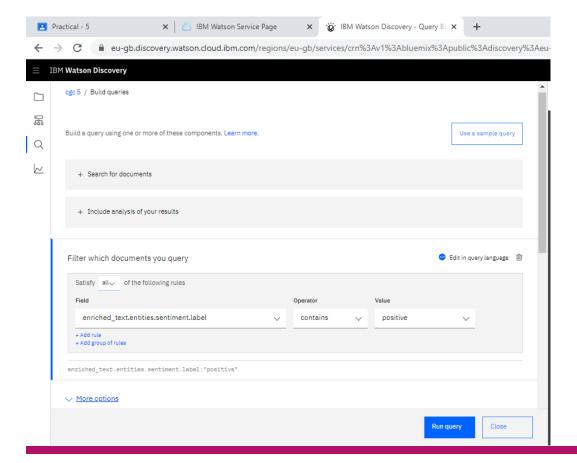
Try running query without any entries. It will show all the content.

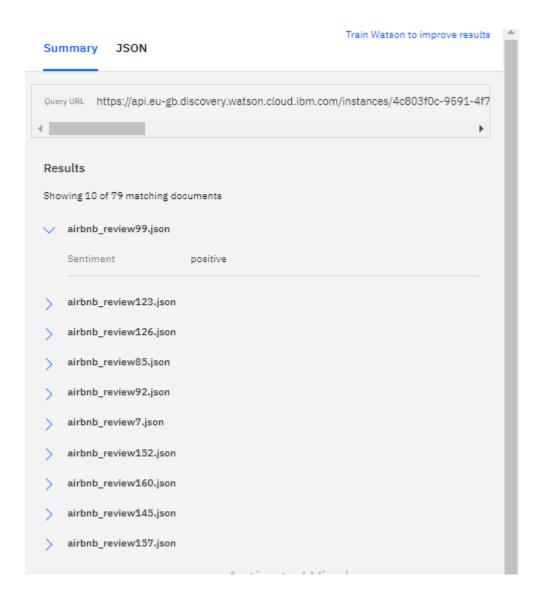


You can select more than one types to run together. You can select or can go type in the query builder.

Queries to execute:

1) Entities of the person who has positive sentiment





Review sentiment under enriched_text, not under entities.

Summary JSON

Irain watson to improve results

```
Query URL https://api.eu-gb.discovery.watson.cloud.ibm.com/instances/4c803f0c-9591-4f7
4 1
                                                                                      Ŀ
                                                                                      .
   "matching_results": 79,
   "session_token": "1_xwDMda01GA59VeC1o17uLuNED1",
   "passages": [],
         lts": [
       "id": "4697519bea9f232566ff3b6b799377fb",
       "result_metadata": {...},
       "listing_name": "Amazing Views. Clean. 420. Finally!",
       "listing_id": "7309830",
       "host_name": "Marquis",
       "text": "Marquis was a great host, always friendly and helpful and
even recommended a few restaurants. The room was big and clean. Would
definitely book it again :) ",
       "listing_longitude": "-73.94136447527643",
       "reviewer_id": "34032440",
       "host_id": "5644314",
       "date": "2015-10-08",
       "listing_latitude": "40.815193944275904",
       "reviewer_name": "Jennifer",
"enriched_text": {
    "sentiment": {
            "document": {
             "score": 0.999008,
"label": "positive"
               ties": [
              "count": 2,

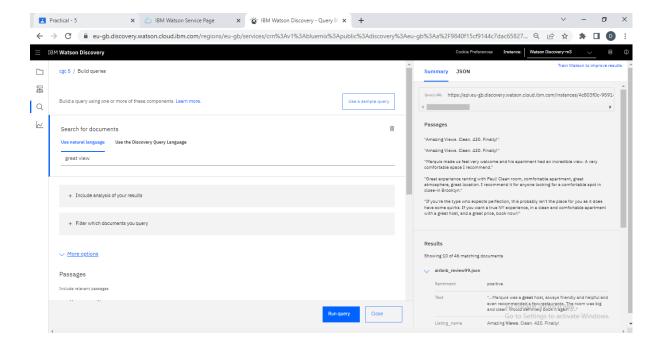
"sentiment": {

"score": 0.662598,

"label": "positive"
Activate Windows
              "text": "Marquis",
```

```
fram watson to improve results
Summary JSON
Query URL https://api.eu-gb.discovery.watson.cloud.ibm.com/instances/4c803f0c-9591-4f7
       "id": "f7703ba65e4fd25123ee951e58059318",
       "result_metadata": {...},
      "listing_name": "Low Winter Price by Central Park!",
"listing_id": "2977232",
       "host_name": "Alesandra",
       "text": "Alesandra was s really lovely host. She was always
interested in me and gave me some nice tips. I enjoyed to stay in her apartment which is very inviting and comfortable. The subway is very
closed and to the Central Park only 5 min walk. \r \n \r \n \- \ ! Highly
recommended ! - :-) ",
       "listing_longitude": "-73.94482017016313",
       "reviewer_id": "25012919",
      "host_id": "15185319",
      "date": "2015-01-21"
       "listing_latitude": "40.79285153420157",
       "reviewer_name": "Philipp",
         "sentiment": {
            "document": {
              "label": "positive"
                ties": [
                        t": {
                "score": -0.519345,
                "label": "negative"
             "text": "Central Park" ctivate Windows
"relevance": 0.945998,
"type": "Facility" Go to Settings to activate Windows.
                                                                            12:17
                               28°C A 🖾 🗊 6 1x FNG
```

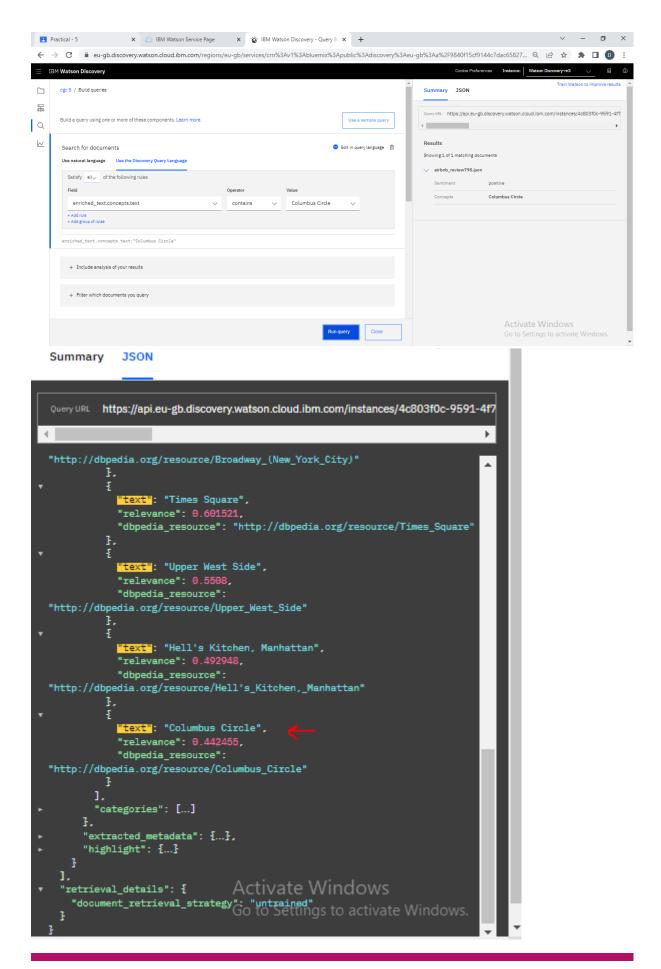
2) Finding a room with a great view.



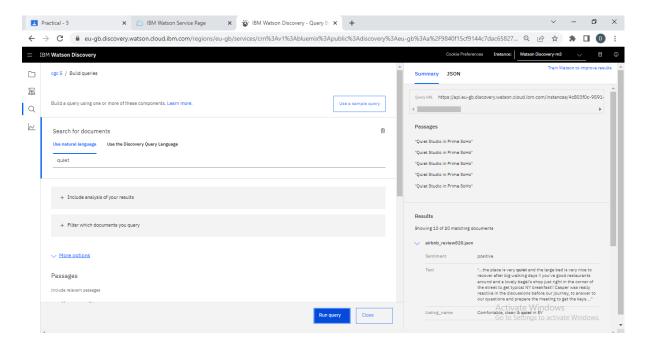
```
Train Watson to improve results
Summary
              JSON
Query URL https://api.eu-gb.discovery.watson.cloud.ibm.com/instances/4c803f0c-9591-4f7
   "matching_results": 46,
  "session_token": "1_xwDMdaOlGA5oquF1_xU5zcTxd0",
  "passages": [
       "document id": "19aa7079b08499e76ee682c820744371",
       "passage_score": 8.608427612208626,
       "passage_text": "Amazing Views. Clean. 420. Finally!",
       "start_offset": 0,
       "end_offset": 35,
       "field": "listing name"
       "document_id": "4697519bea9f232566ff3b6b799377fb",
       "passage_score": 8.608427612208626,
"passage_text": "Amazing Views. Clean. 420. Finally!",
       "start_offset": 0,
       "end offset": 35,
       "field": "listing_name"
       "document_id": "19aa7079b08499e76ee682c820744371",
       "passage_score": 8.10290916696442,
       "passage_text": "Marquis made us feel very welcome and his apartment
had an incredible view. A very comfortable space I recommend.",
       "start_offset": 0,
       "end_offset": 113,
       "field": "text"
       "document_id": "5518201c31eeca8dcfdb664600229af0",
      "passage_score": 5.504074064623768,
"passage_text": "Great experience renting with Paul! Clean room,
comfortable apartment, great atmosphereSgreatclocation; Litecommendoits for anyone looking for a comfortable spot in close-in Brooklyn.",
```

It is also considering synonyms of 'great view' which is a practical use of WordNet. It might show answers according to 'great view', 'great' something or something 'view'.

By using Discovery Query Language (usually used when you want to find something specific rather than something general):



3) Find a places that have reviewed as quiet.

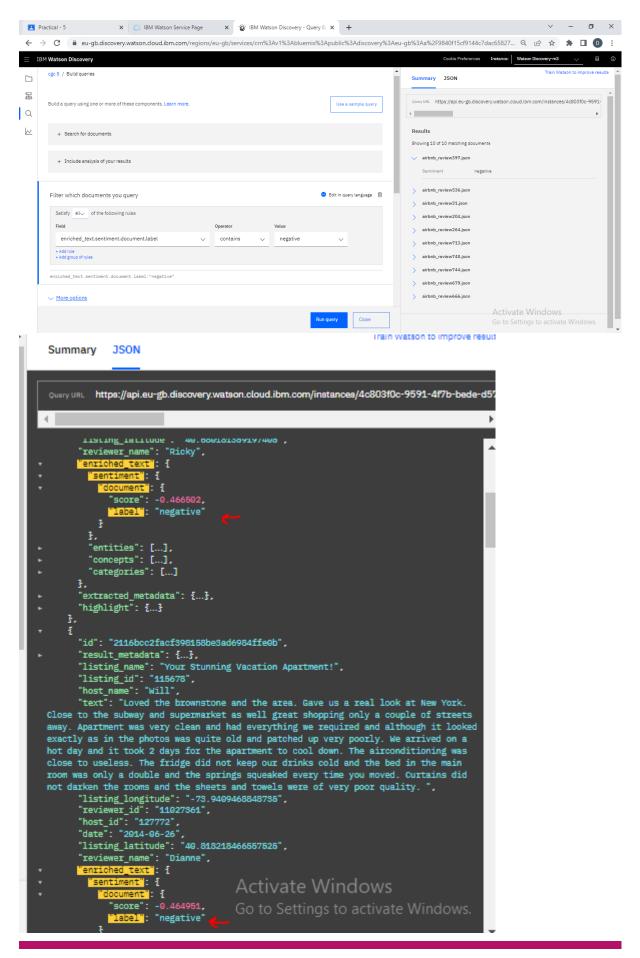


Train Watson to improve results

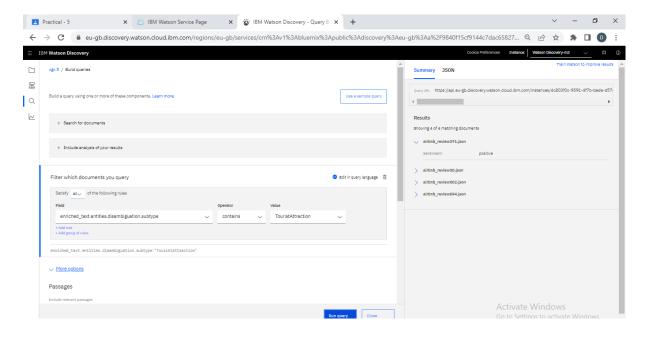
Summary JSON

```
Query URL https://api.eu-gb.discovery.watson.cloud.ibm.com/instances/4c803f0c-9591-4f7
       uudument_iu . 4/195521/5e81501D/4/040/8990D510 , "passage_score": 6.117841183794906,
       "passage_text": "Quiet Studio in Prime SoHo",
       "start offset": 0,
       "end_offset": 26,
       "field": "listing_name"
       "document_id": "50a52a0e0587e3638af10d5bd1e3f896",
       "passage_score": 6.117841183794906,
       "passage_text": "Quiet Studio in Prime SoHo",
       "start_offset": 0,
       "end_offset": 26,
       "field": "listing_name"
       "document_id": "e62b76db403a97df441741c93785371a",
      "passage_score": 6.117841183794906,
"passage_text": "Quiet Studio in Prime SoHo",
       "start_offset": 0,
       "end_offset": 26,
       "field": "listing_name"
  "results": [
       "id": "c76cdddaf29db7a83f2793b9b4534401",
       "result_metadata": {...},
       "listing_name": "Comfortable, clean & quiet in EV",
       "listing_id": "651475",
       "host_name": "Casper",
       "text": "Casper's appartment is nice, clean and very strategicaly
placed to visit manhattan!! 3 mn/by walking to/subway \x\nthe place is
very quiet and the large bed is very nice to recover after big walking days !!\r\nyou've good restaurants around and a lovely bagel's shop just.
right in the corner of the street to get typical NY breakfast!!\r\nCasper
```

4) Any negative review?



5) Finding apartments that are near tourist attractions.



Summary JSON

train wateon to improve results

```
Quary URL https://api.eu-gb.discovery.watson.cloud.ibm.com/instances/4c803f0c-9591-4f7b-bede-d57
     "matching_results": 4,
     "session_token": "1_xw0Mda0lGA5tnAN1EhLvdwyNLE",
     "passages": [],
"results": [
             "id": "ce8b84eead6d2d834728668fd8a380a5",
"id": "ce8b84eead6d2d834728668Id8a380ab ,
    "result_metadata": {...},
    "listing_name": "Inexpensive private room in Midtown",
    "listing_id": "698479",
    "host_name": "Alejandro",
    "text": "Alejandro is a great host. He is very kind and friendly. His
apartment is very well located; just a few blocks from Empire State Building. The
metro is very close also and the bus stop is one block away from the place.\r\n\r\
metro is very close also and the bus stop is one block away from the place.\r\n\r\nI
recomend Alejandro as a host. I really enjoyed it,",

"listing_longitude": "-73.97544682731017",
            "reviewer_id": "3236617",
"host_id": "3547349",
           "date": "2012-12-18",
"listing_latitude": "40.74149171363809",
"reviewer_name": "Dario",
"enriched_text": {
                 "sentiment": {
"sentiment": {...},
"entities": [
{
                        "count": 4,
"sentiment": {
                            "score": 0.783419,
"label": "positive"
                         "text": "Alejandro",
                        "relevance": 0.901474,
"type": "Person"
                        "count": 1,
"sentiment": {
                                                                          Activate Windows
                            "score": 0,
"label": "neutral"
                         },
"text": "Empire State Building",
```

Irain watson to improve result

```
Summary JSON
 Quary URL https://api.eu-gb.discovery.watson.cloud.ibm.com/instances/4c803f0c-9591-4f7b-bede-d57
          "id": "ff863db7f09575b0603a85ed5e729a7f",
"result_metadata": {...},

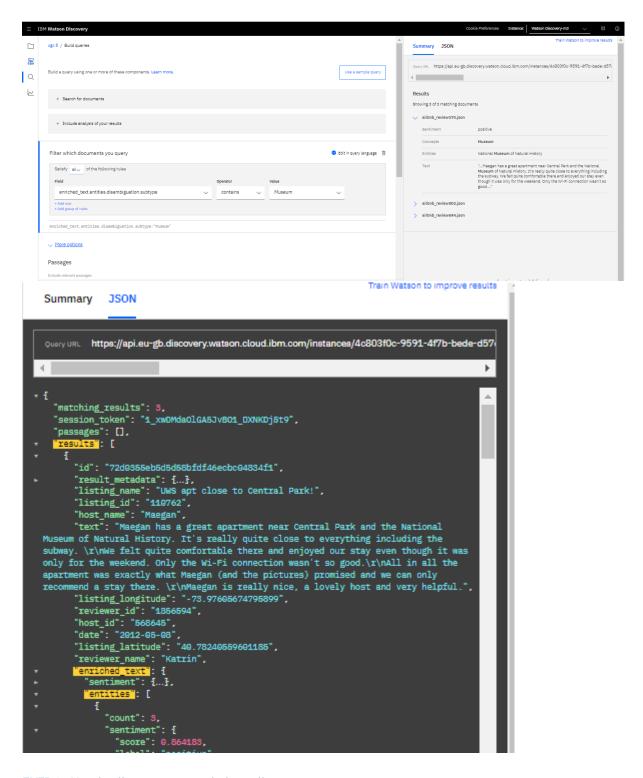
"listing_name": "Times Square Quiet and Beautiful",

"listing_id": "559118",

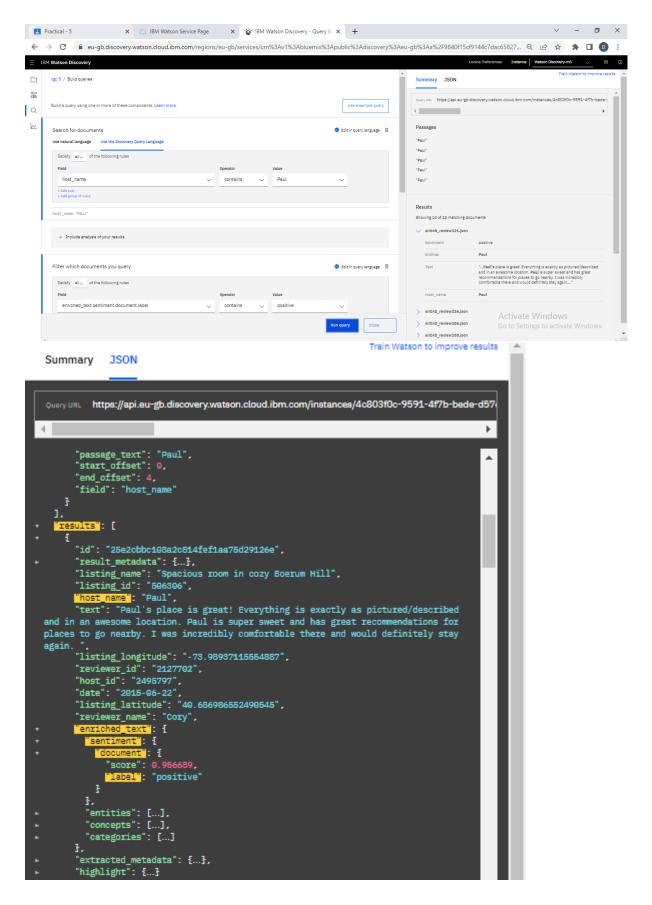
"host_name": "Robert",

"text": "Robert is a perfect host, he gives us many tips and suggestions for a
better way of living NY as a new yorker.\r\nBlazer is so lovely and we became friend
from the beginning.\r\nRobert's house is very cute and comfortable, it's also well
served by MTA (subway and bus) but you can easily walk to Times Square (3 blocks away), Madison Square Garden, Empire State Building, ...\r\nHell's kitchen is a good
place to eat & drink.\r\nOn our next tour in NY, no doubt, this will be our first
choice",
"listing_longitude": "-73.99350243299212",
          "reviewer_id": "3757751",
"host_id": "2743623",
          "date": "2012-11-23"
          "listing_latitude": "40.76000286884051",
           "Isting_latitude": "40.76000",
"reviewer_name": "Federico",
"enriched_text": {
    "sentiment": {...},
                      ties": [
                    "sentiment": {
   "score": 0.809898,
   "label": "positive"
                   },
"text": "Robert",
                    "relevance": 0.709466,
"type": "Person"
                     "sentiment": {
  "score": 0.839681,
  "label": "positive"
                                                            Activate Windows
                   },
"text": "NY",
                    "relevance": 0.638248,
"type": "Location".
```

(A library of subtypes is maintained which helps to filter according to the subtypes.) Near Museum:



EXTRA: Use both components together:



OR like this:

