

# COMP 353: Homework 2

2022-12-04

## Collaborators

- Anshul Narang
  - Setup the python file and loaded the airbnb sample dataset
  - Implemented all six queries based on the requirements
- Nick Shannon
  - Verified all six queries using CLI tools such as jq and grep
  - Prepared and Added screenshots of output

## MongoDB Queries

```
# Query 1 Results:  
# Select the top five largest numbers of listings; sort descending  
# (host_name, host_total_listings_count)  
query=listings.find({}, {  
    "host.host_name": 1,  
    "host.host_total_listings_count": 1  
}).sort("host.host_total_listings_count", -1).limit(5)  
  
for quer in query:  
    pprint.pprint(quer)
```

Query 1 Results:

Select the top five largest numbers of listings

(host\_name, host\_total\_listings\_count)

```
{ '_id': '13603489',  
  'host': {'host_name': 'Sonder', 'host_total_listings_count': 1198} }  
{ '_id': '12902610',  
  'host': {'host_name': 'Sonder', 'host_total_listings_count': 1198} }  
{ '_id': '14993652',  
  'host': {'host_name': 'Sonder', 'host_total_listings_count': 1198} }  
{ '_id': '13155211',  
  'host': {'host_name': 'Sonder', 'host_total_listings_count': 1198} }  
{ '_id': '13764334',  
  'host': {'host_name': 'Sonder', 'host_total_listings_count': 1198} }
```

*# Query 2 Results:*

*# Select the top 10 listings with Cable TV, Wifi, and Iron amenities;*

*# sort by minimum nights descending*

*# (\_id, minimum\_nights, name, property\_type)*

```
query=listings.find(  
    {  
        "$and": [  
            {"amenities" : "Cable TV" },  
            { "amenities" : "Wifi" },  
            { "amenities" : "Iron" }  
        ]  
    },  
    {  
        "_id": 1,  
        "minimum_nights": 1,  
        "name": 1,  
        "property_type": 1,  
    }).limit(10).sort("minimum_nights", -1)
```

```
for quer in query:  
    pprint.pprint(quer)
```

Query 2 Results:

Select the top 10 listings with Cable TV, Wifi, and Iron amenities; sort by minimum nights descending  
(\_id, minimum\_nights, name, property\_type)

```
{ '_id': '9907103',  
  'minimum_nights': '90',  
  'name': 'Brand New Luxury Downtown Studio',  
  'property_type': 'Loft' }  
{ '_id': '4404740',  
  'minimum_nights': '90',  
  'name': 'Ko Olina: March Special - For You & Your Family!!',  
  'property_type': 'Villa' }  
{ '_id': '573924',  
  'minimum_nights': '90',  
  'name': 'CHIC apt near metro & AtwaterMarket',  
  'property_type': 'Apartment' }  
{ '_id': '2629234',  
  'minimum_nights': '90',  
  'name': 'Beautiful 1/1/1 in Waikiki!!',  
  'property_type': 'Condominium' }  
{ '_id': '22336644',  
  'minimum_nights': '90',  
  'name': 'Suitable place for ERASMUS students (Mecidiyeköy)',  
  'property_type': 'Apartment' }  
{ '_id': '19750905',  
  'minimum_nights': '8',  
  'name': 'Executive studio in the heart of Manhattan',  
  'property_type': 'Apartment' }  
{ '_id': '13559998',  
  'minimum_nights': '7',  
  'name': 'Rio Olympic VIP Accommodations',  
  'property_type': 'Apartment' }  
{ '_id': '13591144',  
  'minimum_nights': '7',  
  'name': 'Beautiful 4 Bedroom House with pool',  
  'property_type': 'Apartment' }  
{ '_id': '1092760',  
  'minimum_nights': '7',  
  'name': 'Private Entrance - Backyard Summer Dining - Enjoy',  
  'property_type': 'Townhouse' }  
{ '_id': '14013822',  
  'minimum_nights': '7',  
  'name': 'Maui Beach House Chic Style with Tropical Views',  
  'property_type': 'Condominium' }
```

# Query 3 Results:

# Select the maxium number of nights

# (\_id, name, property\_type, maximum\_nights)

```
query=listings.find({}, {  
  "_id": 1,
```

```

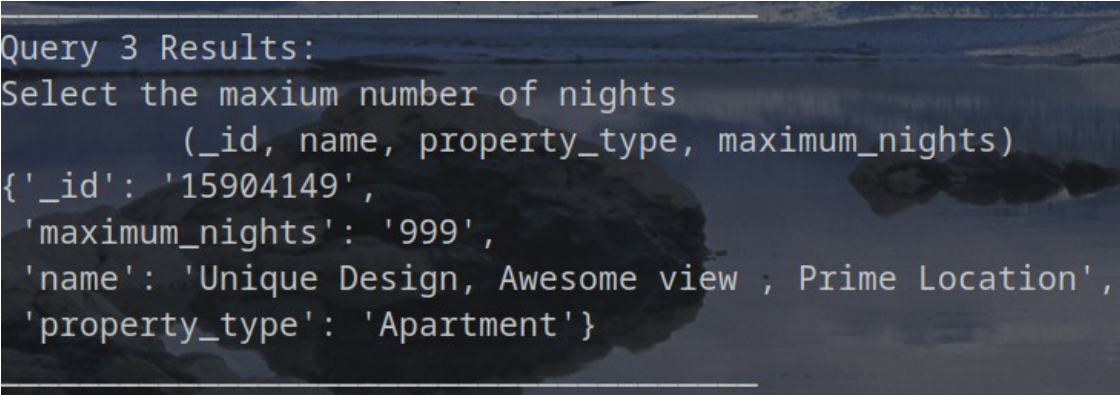
"name": 1,
"property_type": 1,
"maximum_nights": 1
}).limit(1).sort("maximum_nights",-1)

```

```

for quer in query:
    pprint.pprint(quer)

```



```

Query 3 Results:
Select the maxium number of nights
      (_id, name, property_type, maximum_nights)
{'_id': '15904149',
 'maximum_nights': '999',
 'name': 'Unique Design, Awesome view , Prime Location',
 'property_type': 'Apartment'}

```

```

# Query 4 Results:
# Select the five listings with between 5 and
# 8 beds inclusive; sort descending
#      (_id, accomodates, bedrooms, beds, name, property_type)
query=listings.find(
    {
        "$and":
        [
            {"accommodates" : {"$gte": 5,"$lte":8}},
            {"beds": {"$gte" : 5}}
        ]
    },
    {
        "_id": 1,
        "name": 1,
        "property_type": 1,
        "accommodates": 1,
        "beds":1,
        "bedrooms":1
    }
).sort("accommodates",-1).limit(5)

```



```
for quer in query:
    pprint.pprint(quer)
```

```
Query 4 Results:
Select the five listings with between 5 and 8 beds inclusive; sort descending
(_id, accomodates, bedrooms, beds, name, property_type)
{'_id': '1036027',
 'accommodates': 8,
 'bedrooms': 4,
 'beds': 8,
 'name': 'BBC OPORTO 4X2',
 'property_type': 'Apartment'}
{'_id': '10006546',
 'accommodates': 8,
 'bedrooms': 3,
 'beds': 5,
 'name': 'Ribeira Charming Duplex',
 'property_type': 'House'}
{'_id': '10581101',
 'accommodates': 8,
 'bedrooms': 4,
 'beds': 6,
 'name': 'Grand apartment Sagrada Familia',
 'property_type': 'Apartment'}
{'_id': '10423504',
 'accommodates': 8,
 'bedrooms': 3,
 'beds': 6,
 'name': 'Bondi Beach Dreaming 3-Bed House',
 'property_type': 'House'}
{'_id': '10051164',
 'accommodates': 8,
 'bedrooms': 1,
 'beds': 8,
 'name': 'Catete's Colonial Big House Room B',
 'property_type': 'House'}
```

```
# Query 5 Results:
# Select the top 5 listings where the number of bathrooms is greater
# than the number of bedrooms; sort descending by bathrooms
# (_id, bathrooms, bedrooms, beds, name, property_type)
query=listings.find(
    {
        "$expr":
            { "$gt": [ "$bathrooms" , "$bedrooms" ] }
    })
```

```

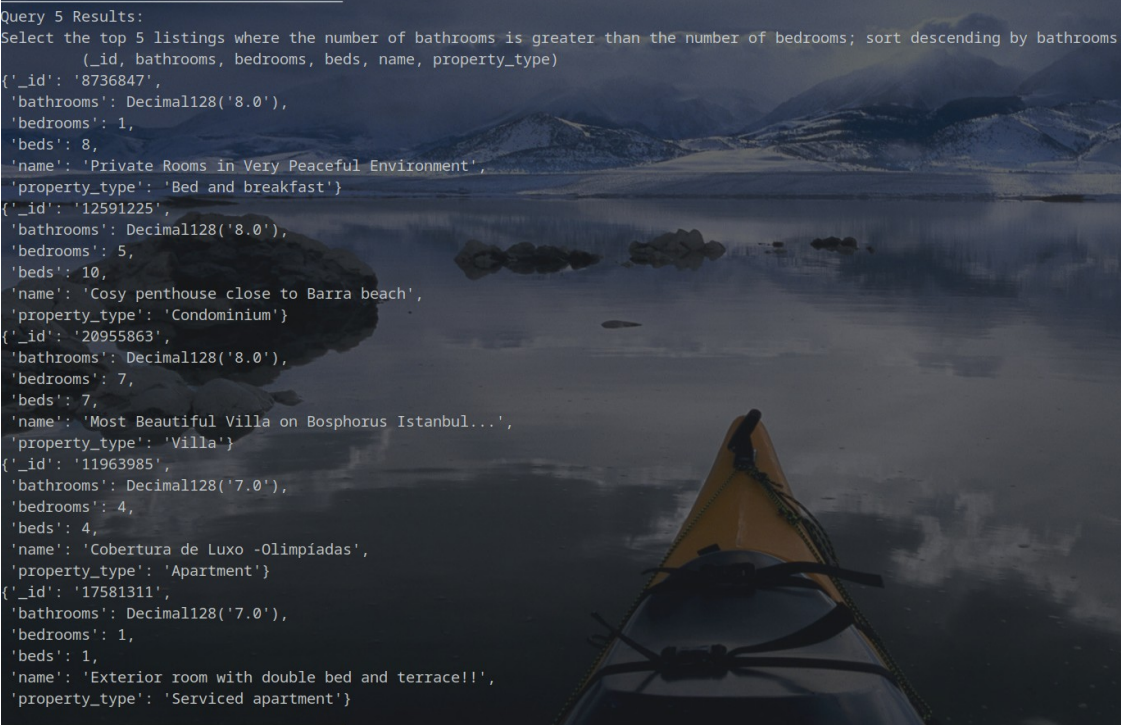
    },
    {
        "_id": 1,
        "name": 1,
        "property_type": 1,
        "bathrooms": 1,
        "bedrooms":1,
        "beds":1
    }).sort("bathrooms",-1).limit(5)

```

```

for quer in query:
    pprint.pprint(quer)

```



```

Query 5 Results:
Select the top 5 listings where the number of bathrooms is greater than the number of bedrooms; sort descending by bathrooms
  (_id, bathrooms, bedrooms, beds, name, property_type)
({'_id': '8736847',
  'bathrooms': Decimal128('8.0'),
  'bedrooms': 1,
  'beds': 8,
  'name': 'Private Rooms in Very Peaceful Environment',
  'property_type': 'Bed and breakfast'})
({'_id': '12591225',
  'bathrooms': Decimal128('8.0'),
  'bedrooms': 5,
  'beds': 10,
  'name': 'Cosy penthouse close to Barra beach',
  'property_type': 'Condominium'})
({'_id': '20955863',
  'bathrooms': Decimal128('8.0'),
  'bedrooms': 7,
  'beds': 7,
  'name': 'Most Beautiful Villa on Bosphorus Istanbul...',
  'property_type': 'Villa'})
({'_id': '11963985',
  'bathrooms': Decimal128('7.0'),
  'bedrooms': 4,
  'beds': 4,
  'name': 'Cobertura de Luxo -Olimpiadas',
  'property_type': 'Apartment'})
({'_id': '17581311',
  'bathrooms': Decimal128('7.0'),
  'bedrooms': 1,
  'beds': 1,
  'name': 'Exterior room with double bed and terrace!!',
  'property_type': 'Serviced apartment'})

```

```

# Query 6 Results:
# Select the top 10 reviews; sort by review rating descending
#      (_id, name, property_type,
review_scores.review_scores_rating, summary)
query=listings.find({}, {
    "_id": 1,
    "name": 1,
    "property_type": 1,
    "summary": 1,

```

```
"review_scores.review_scores_rating":1  
}).sort("review_scores.review_scores_rating",-1).limit(10)
```

```
for quer in query:  
    pprint.pprint(quer)
```

```
Query 6 Results:  
Select the top 10 reviews; sort by review rating descending  
  (_id, name, property_type, review_scores.review_scores_rating, summary)  
{'_id': '10021707',  
 'name': 'Private Room in Bushwick',  
 'property_type': 'Apartment',  
 'review_scores': {'review_scores_rating': 100},  
 'summary': 'Here exists a very cozy room for rent in a shared 4-bedroom '  
            'apartment. It is located one block off of the JMZ at Myrtle '  
            'Broadway. The neighborhood is diverse and appeals to a variety '  
            'of people.'}  
{'_id': '10166986',  
 'name': 'Resort-like living in Williamsburg',  
 'property_type': 'Apartment',  
 'review_scores': {'review_scores_rating': 100},  
 'summary': 'Amazing Apt : 1 bdrm/1 bathroom furnished, New building with a '  
            'doorman, jacuzzi, gym, pool, and roofdeck with an amazing '  
            'Manhattan view. Very good location : 4-Minutes walk to the L '  
            'subway station, then Just 3 stops away from Manhattan.'}  
{'_id': '1016739',  
 'name': 'Private Room (2)  in Guest House at Coogee Beach',  
 'property_type': 'House',  
 'review_scores': {'review_scores_rating': 100},  
 'summary': 'Room 2  Private room in charming recently renovated federation '  
            'guest house at Coogee Beach. Prices are per room for 2 People '  
            'only. A queen  and a single bed. Not suitable for group booking '  
            'All rooms have  TV, desk, wardrobe, beds, unlimited wifi 2 mins '  
            'from the beach, cafes and transport. This is not a party house '  
            'but a safe and clean place to stay. Share bathrooms and '  
            'kitchen... All common areas are cleaned daily.'}
```



```
{ '_id': '10047964',  
  'name': 'Charming Flat in Downtown Moda',  
  'property_type': 'House',  
  'review_scores': {'review_scores_rating': 100},  
  'summary': 'Fully furnished 3+1 flat decorated with vintage style. Located '  
              'at the heart of Moda/Kadıköy, close to seaside and also to the '  
              'public transportation (tram, metro, ferry, bus stations) 10 '  
              'minutes walk.'}  
{ '_id': '10059872',  
  'name': 'Soho Cozy, Spacious and Convenient',  
  'property_type': 'Apartment',  
  'review_scores': {'review_scores_rating': 100},  
  'summary': 'Clean, fully furnish, Spacious 1 bedroom flat just off the '  
              'escalator in Mid Levels. 2 minutes From Soho Bar and Restaurants. '  
              'Located in a quiet alley 1 minute from Sun Yat Sen'}  
{ '_id': '10108388',  
  'name': 'Sydney Hyde Park City Apartment (checkin from 6am)',  
  'property_type': 'Apartment',  
  'review_scores': {'review_scores_rating': 100},  
  'summary': 'Our city apartment is a bright, comfortable 1 bedroom with 24hr '  
              'front-desk access. It is conveniently located directly across '  
              'from Hyde Park and within walking distance of delightful cafes, '  
              'restaurants, parks, major city attractions and public transport, '  
              'including Museum Station which has a direct connection to Sydney '  
              'Airport.'}  
{ '_id': '10227000',  
  'name': 'LAHAINA, MAUI! RESORT/CONDO BEACHFRONT!! SLEEPS 4!',  
  'property_type': 'Condominium',  
  'review_scores': {'review_scores_rating': 100},  
  'summary': 'THIS IS A VERY SPACIOUS 1 BEDROOM FULL CONDO (SLEEPS 4) AT THE '  
              'BEAUTIFUL VALLEY ISLE RESORT ON THE BEACH IN LAHAINA, MAUI!! YOU '  
              'WILL LOVE THE PERFECT LOCATION OF THIS VERY NICE HIGH RISE! ALSO '  
              'THIS SPACIOUS FULL CONDO, FULL KITCHEN, BIG BALCONY!!'}  
}
```



```
{ '_id': '1022200',  
  'name': 'Kailua-Kona, Kona Coast II 2b condo',  
  'property_type': 'Apartment',  
  'review_scores': {'review_scores_rating': 100},  
  'summary': ''}  
{ '_id': '10141950',  
  'name': 'Big, Bright & Convenient Sheung Wan',  
  'property_type': 'Apartment',  
  'review_scores': {'review_scores_rating': 100},  
  'summary': 'Hollywood Rd Studio Only 1 apartment per floor 650sqft! Fast Wifi '  
              'and Kitchen! Daily Housekeeping! NEAR 3min walk from MTR 3min '  
              'walk from Escalators 5min walk from LKF (Please note I live here '  
              'so some belongings kept in wardrobe)'}  
{ '_id': '10096773',  
  'name': 'Easy 1 Bedroom in Chelsea',  
  'property_type': 'Apartment',  
  'review_scores': {'review_scores_rating': 100},  
  'summary': 'A comfortable one bedroom for responsible guests. Plenty of '  
              'natural light. Walk up building. You'll feel like a local staying '  
              'in this residential neighborhood, right next to great food, bars, '  
              'subways, the High Line, Chelsea Piers, etc.'}
```