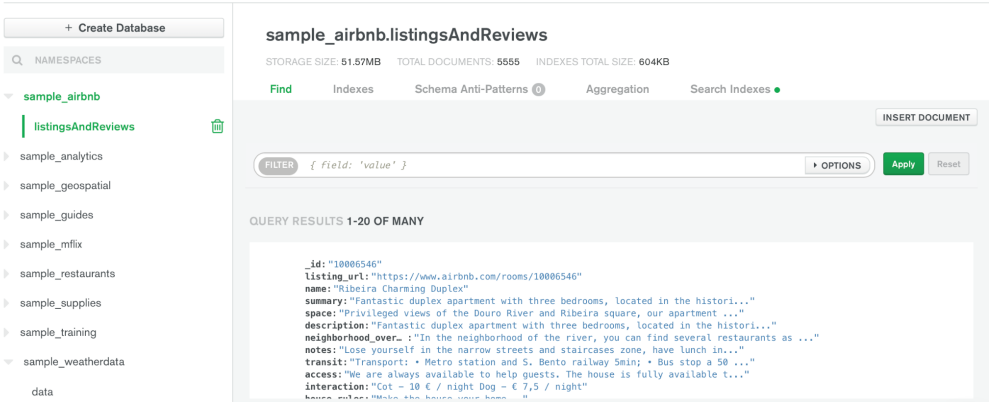
Exercise 1

This task uses sample data available on the Atlas Cloud console.

1. From within the Atlas Cloud console, load sample data using the `...` button in your cluster settings.



a.

2. Using your `mongo` shell, list your databases, select the `sample_weatherdata` set, then show collections within that:

```
Atlas atlas-z5p39i-shard-0 [primary] myFirstDatabase> show dbs;
sample_mflix     8.53 MB
sample_training   578 kB
admin             340 kB
local            1.35 GB
Atlas atlas-z5p39i-shard-0 [primary] myFirstDatabase> use sample_weatherdata;
switched to db sample_weatherdata
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata> show collections;
data
```

a.

3. This should show you there is a `data` collection within that database. Find all documents in the collection, then display them using the `.pretty()` flag, and finally count them:

a. `db.data.find();`

```
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata> db.data.find();
[
  {
    _id: ObjectId("5553a998e4b02cf7151190b8"),
    st: 'x+47600-047900',
    ts: ISODate("1984-03-05T13:00:00.000Z"),
    position: { type: 'Point', coordinates: [ -47.9, 47.6 ] },
    elevation: 9999,
    callLetters: 'VCSZ',
    qualityControlProcess: 'V020',
    dataSource: '4',
    type: 'FM-13',
    airTemperature: { value: -3.1, quality: '1' },
    dewPoint: { value: 999.9, quality: '9' },
    pressure: { value: 1015.3, quality: '1' },
    wind: {
      direction: { angle: 999, quality: '9' },
      type: '9',
      speed: { rate: 999.9, quality: '9' }
    },
    visibility: {
      distance: { value: 999999, quality: '9' },
      variability: { value: 'N', quality: '9' }
```

i.

b. `db.data.find().pretty();`

```
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata> db.data.find().pretty()
[
  {
    _id: ObjectId("5553a998e4b02cf7151190b8"),
    st: 'x+47600-047900',
    ts: ISODate("1984-03-05T13:00:00.000Z"),
    position: { type: 'Point', coordinates: [ -47.9, 47.6 ] },
    elevation: 9999,
    callLetters: 'VCSZ',
    qualityControlProcess: 'V020',
    dataSource: '4',
    type: 'FM-13',
    airTemperature: { value: -3.1, quality: '1' },
    dewPoint: { value: 999.9, quality: '9' },
    pressure: { value: 1015.3, quality: '1' },
    wind: {
      direction: { angle: 999, quality: '9' },
      type: '9',
      speed: { rate: 999.9, quality: '9' }
    },
    visibility: {
      distance: { value: 999999, quality: '9' },
      variability: { value: 'N', quality: '9' }
    },
    skyCondition: {
      ceilingHeight: { value: 99999, quality: '9', determination: '9' },
      cavok: 'N'
    },
    sections: [ 'AG1' ],
    precipitationEstimatedObservation: { discrepancy: '2', estimatedWaterDepth: 999 }
  },
  {
```

i.

c. `db.data.find().count();`

```
Type "it" for more
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata> db.data.find().count();
(node:32673) [MONGODB DRIVER] Warning: cursor.count is deprecated and will be removed in the next major v
(Use `node --trace-warnings ...` to show where the warning was created)
10000
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata>
```

i.

4. Search for all documents containing a `skyCondition.ceilingHeight.value` of `750` and count the results. Then display the results:
   a. `db.data.find({"skyCondition.ceilingHeight.value":750}).count()`

```
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata> db.data.find({"skyCondition.ceilingHeight.value":750}).count();
673
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata>
```

i.

   b. `db.data.find({"skyCondition.ceilingHeight.value":750}).pretty();`

```
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata> db.data.find({"skyCondition.ceilingHeight.value":750}).pretty();
[
  {
    _id: ObjectId("5553a998e4b02cf7151190bd"),
    st: 'x+59800-029700',
    ts: ISODate("1984-03-05T15:00:00.000Z"),
    position: { type: 'Point', coordinates: [ -29.7, 59.8 ] },
    elevation: 9999,
    callLetters: 'TFWB',
    qualityControlProcess: 'V020',
    dataSource: '4',
    type: 'FM-13',
    airTemperature: { value: 3.1, quality: '1' },
    dewPoint: { value: 999.9, quality: '9' },
    pressure: { value: 1019, quality: '1' },
    wind: {
      direction: { angle: 250, quality: '1' },
      type: 'N',
      speed: { rate: 15.4, quality: '1' }
    },
    visibility: {
      distance: { value: 10000, quality: '1' },
      variability: { value: 'N', quality: '9' }
    },
    skyCondition: {
      ceilingHeight: { value: 750, quality: '1', determination: 'C' },
      cavok: 'N'
    },
    sections: [ 'AG1', 'AY1', 'GF1', 'MW1' ],
    precipitationEstimatedObservation: { discrepancy: '1', estimatedWaterDepth: 0 },
```

i.

5. Retrieve a single document based on `ObjectId`:
    a. `db.data.find(ObjectId("5553a998e4b02cf7151195d3")).pretty();`

```
Atlas atlas-z5p39i-shard-0 [primary] sample_weatherdata> db.data.find(ObjectId("5553a998e4b02cf7151195d3")).pretty();
[
  {
    _id: ObjectId("5553a998e4b02cf7151195d3"),
    st: 'x+85600-124000',
    ts: ISODate("1984-03-05T15:00:00.000Z"),
    position: { type: 'Point', coordinates: [ -124, 85.6 ] },
    elevation: 9999,
    callLetters: 'ROBB',
    qualityControlProcess: 'V020',
    dataSource: '4',
    type: 'FM-13',
    airTemperature: { value: -22.9, quality: '1' },
    dewPoint: { value: -24.9, quality: '1' },
    pressure: { value: 1000.2, quality: '1' },
    wind: {
      direction: { angle: 270, quality: '1' },
      type: 'N',
      speed: { rate: 7, quality: '1' }
    },
    visibility: {
      distance: { value: 7000, quality: '1' },
      variability: { value: 'N', quality: '9' }
    },
    skyCondition: {
      ceilingHeight: { value: 750, quality: '1', determination: 'C' },
      cavok: 'N'
    },
    sections: [ 'AG1', 'AY1', 'GF1', 'MA1', 'MD1', 'MW1' ],
    precipitationEstimatedObservation: { discrepancy: '2', estimatedWaterDepth: 1 },
    pastWeatherObservationManual: [
      {
        atmosphericCondition: { value: '7', quality: '1' },
        period: { value: 3, quality: '1' }
      }
    ],
    skyConditionObservation: {
      totalCoverage: { value: '08', opaque: '99', quality: '1' },
      lowestCloudCoverage: { value: '08', quality: '1' },
      lowCloudGenus: { value: '05', quality: '1' },
      lowestCloudBaseHeight: { value: 800, quality: '1' },
      midCloudGenus: { value: '99', quality: '9' },
      highCloudGenus: { value: '99', quality: '9' }
    },
    atmosphericPressureObservation: {
      altimeterSetting: { value: 9999.9, quality: '9' },
      stationPressure: { value: 1000.2, quality: '1' }
    },
    atmosphericPressureChange: {
      tendency: { code: '2', quality: '1' },
      quantity3Hours: { value: 0.7, quality: '1' },
      quantity24Hours: { value: 99.9, quality: '9' }
    },
    presentWeatherObservationManual: [ { condition: '71', quality: '1' } ]
  }
]
```

    i.

6. Finally, using the code below insert a new document. After insertion, can you retrieve this document?
    a. No, you cannot retrieve this document because there is no unique ObjectId.