Models and Systems for Big Data
From MongoDB to Redis
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The purpose of this practical work is to use MongoDB `paris` collection to build key-value Redis database.

1 REDIS INSTALLATION & PYTHON LIBRARY

1. Here are the links (mac os and windows) to install Redis:

   https://gist.github.com/tomysmile/1b8a321e7c58499ef9f9441b2faa0aa8

   https://redislabs.com/ebook/appendix-a/a-3-installing-on-windows/a-3-2-installing-redis-on-window/

   A server will run on `localhost` at port number 6379 (by default).

2. Use Python notebook to execute the file `redis-basics.ipynb`. This notebook allows to connect to Redis server and to introduce some basic query operations. First, you install the library redis for python `pip install redis` [1]. Then, you launch `jupyter` using the command `jupyter notebook` in your terminal to open and to execute this file in your browser.

2 QUERYING REDIS-BASED REVIEWS STREAM APPLICATION

We need to build a key-value Redis database to have a stream of reviews by source, by category and to compute efficiently some statistics such as the average rating and standard deviation.

We also want to display the locations with some properties such as:

- located near given places, for a given category
- well rated, by taking into account the sources and the number of reviews

Which key-value pairs do you need to create to answer the above issues? Give the mappings between json data structures and redis keys.

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[1] https://redis-py.readthedocs.io/en/latest/

The most important is to know the structure json file to create the relevant
key-value pairs to be stored in Redis database, according to the querying needs

```
(_id:category, value)
(_id:reviews.i:source, value) i is the index in json reviews array
(_id:reviews.i:rating, value)
(_id:location:coord:coordinates:i, value)
```

It's better also to have the names
```
(_id:name, value)
```

Write in python the code which:

- read json file to map Redis key-value pairs (to make the serialization see #Example 5)

- write functions to compute basic statistics.

- write functions to display locations according given constraints.[2]

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[2] https://pypi.org/project/geopy/