



Models and Systems for Big Data

From MongoDB to Redis

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The purpose of this practical work is to use MongoDB collections to build key-value Redis¹ database using `redis` MongoDB 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`². 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

¹

²<https://redis-py.readthedocs.io/en/latest/>

2.1 BUILDING MONGODB COLLECTIONS USING MAPREDUCE FUNCTIONS

In order to build the Redis database, we need to retrieve necessary information from MongoDB database. To achieve this, write map and reduce functions to build new collections to be exported as json files.

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

2.2 PYTHON IMPLEMENTATION

Write in python the code which:

- read json files 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.³

³<https://pypi.org/project/geopy/>