

EXTRA CREDIT PROJECT- REDIS - DUE DATE: July 12th, 2016

In this project you will map a relational schema and records to REDIS. Send me email if you intent to do it, so I can delay announcing grades.

1. Download and install Redis at your PC
2. A relation's schema and its contents will always be given in a text file in a specific format according to the following rules:
 - first line contains only table's name
 - second line contains the primary key's name - assume a single attribute
 - the rest of the attributes are in a single line each
 - a line containing the character ';'
 - one or more lines, representing records, delimited by the character ";"
 - assume all attributes are of type string

Example relation: Student (SSN, FName, LName, Address, Age)

File contents:

```
Student
SSN
FName
LName
Address
Age
;
12938;Nikos;Papadopoulos;Hydras 28, Athens;42
18298;Maria;Nikolaou;Kifisias 33, Marousi;34
81129;Dimitris;Panagiotou;Alamanas 44, Petralona;29
```

3. Write a Java program that gets as input (in the command line) the name of a relation's specification file and inserts relation's data into Redis in an appropriate format.
4. A query will be given as a text file containing three lines:

first line (SELECT): a list of relation_name.attribute_name, delimited by the character ","

second line (FROM): a list of relation names, delimited by the character ","
third line (WHERE): a very simple condition, consisting only of AND, OR, =, <>, > and <

Example:

```
Student.FName, Student.LName, Grade.Mark  
Student, Grade  
Student.SSN=Grade.SSN
```

5. Write a Java program that gets as input (in the command line) the name of a query's specification file and prints out the results, separated by ","

Useful tips and links:

- * How to download and install Redis:

Windows: <https://github.com/MSOpenTech/redis/releases> (also, search Google)
Linux: <http://redis.io/download>

- * Using Redis within Java (Jedis package):

download some recent version of the jar file for Jedis
(e.g. <http://www.java2s.com/Code/Jar/j/Downloadjedis130jar.htm>)
put it in your path so java can find it
I am attaching the one that I am using (jedis-2.5.1.jar)
I am also attaching a simple Java program that uses Jedis (testJedis.java)

- * How to read/write a Java file:

http://www.homeandlearn.co.uk/java/read_a_textfile_in_java.html
<http://www.mkyong.com/java/how-to-read-file-from-java-bufferedreader-example/>
(but you can find several resources in the web)

- * How to split a Java's string using a delimiter:

use the split java method: <http://www.mkyong.com/java/java-how-to-split-a-string/>
the delimiter can be a regular expression - most likely you don't know regular expressions
the first example of the above link should be fine for you - just replace "-" with ";"

- * Replacing strings within a string with another string:

use the replace java method: <http://www.homeandlearn.co.uk/java/replace.html>

- * In Redis, you can find all keys that start from a specific string by using the command KEYS