

Homework Three

Theory of Computation

2014

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Important Note:

Please remember to send your homework before **final exam (6/26)**.

You are **not allowed** to revise the file after **final exam**.

Please upload your program complying with these rules:

1. We will pull your project, TOC_HW3, from your github account.
2. Note that your code will be ran at ubuntu 12.04.2 LTS
 1. 140.116.86.90 port:10122
 2. python 2.7.3
 3. java version 1.7.0_51
 4. For other programming languages, please specify your requirement to TA (bohengorz@gmail.com)
3. **For Java, please put the main function in "ToCHW3" file.**
 - Please put "all" your **source file** at the "HW3" directory (you should create the directory at first). **Note that TA will execute a clean build and remove all .class files before execution.**
 - Make sure your code can be successfully compiled by the ANT build file located in **/home/TOC/ANT/toc3/build.xml**.
 - Execute the make process by ant, and you should find a "ToCHW3.jar" created. Try to execute "java -jar ToCHW3.jar" and check if the result follows your expectation.
 - Usage: **"ant -f /home/TOC/ANT/toc3/build.xml build"** for creating the ToCHW3.jar file in the HW3 directory.
4. **For Python, please put the main function in "ToCHW3.py" file.**
5. Your program must accept three arguments, which are **"URL 鄉鎮市區 Road_Name year"**.
If no input is given, please show messages and reject the execution.
 - "java -jar ToCHW3.jar URL 鄉鎮市區 Road_Name Year" for running your code.
6. **Write your basic information in the start of the java source code, including your name, your student number and brief description of your code.**
7. If you have questions, please email to the TA at bohengorz@gmail.com.

Data Input:

We use real-price housing information in our country. You can find the data schema here:

<http://www.datagarage.io/datasets/ktchuang/realprice/A>

*You can try to use "select fields" function provided in the platform to accomplish the data access in

an easy way.

*For general use, please download the full data in the JSON format:

<http://www.datagarage.io/api/5365dee31bc6e9d9463a0057>

Homework 3: We use real-price housing information in our country, and find the average of all sale prices matching the condition as the arguments(鄉鎮市區, Road_Name, Year).

Output: average sale price (1 line) in the column '總價元'. Please just print out the integral part (Use "(int)avg_price" in you code).

Arguments:

1. URL, such as <http://www.datagarage.io/api/5365dee31bc6e9d9463a0057>
2. 鄉鎮市區: Specify the name in the column '鄉鎮市區'. For example, "文山區".
3. Road_Name: Specify the road name in the column '土地區段位置或建物區門牌'. For example, "中壢市環西路" means we would like to check 中壢市環西路x段 or 中壢市環西路x巷 or any road name containing 中壢市環西路.
4. Year: Specify the "year" in the column '交易年月'. You should retrieve all houses sold at/after the "Year".

For example: 101, which means that we will need to check all houses which were sold between 101 and 103.

Running Examples 1:

Input: java -jar ToCHW3.jar <http://www.datagarage.io/api/5365dee31bc6e9d9463a0057> 文山區 辛亥路 103

You will see the following data matched:

文山區	臺北市文山區辛亥路六段91~120號	10302	2470000
文山區	臺北市文山區辛亥路四段77巷92弄1~30號	10301	19980000
文山區	臺北市文山區辛亥路五段61~90號	10301	10450000
文山區	臺北市文山區辛亥路四段222巷19弄1~30號	10301	16500000
文山區	臺北市文山區辛亥路四段222巷1~30號	10301	14900000
文山區	臺北市文山區辛亥路七段69巷31~60號	10302	43800000
文山區	臺北市文山區辛亥路四段77巷91~120號	10302	15100000

Output:

17600000

Running Examples 1:

Input: java -jar ToCHW3.jar <http://www.datagarage.io/api/5365dee31bc6e9d9463a0057> 大安區 復興南路 103

You will see the following data matched:

大安區	臺北市大安區復興南路二段1~30號	10302	9290000
大安區	臺北市大安區復興南路二段148巷1~30號	10302	25000000
大安區	臺北市大安區復興南路一段79巷4弄1~30號	10302	10000000

大安區	臺北市大安區復興南路一段107巷1~30號	10302	44000000
大安區	臺北市大安區復興南路二段125巷20弄1~30號	10301	22050000
大安區	臺北市大安區復興南路一段253巷31~60號	10302	18686000
大安區	臺北市大安區復興南路一段61~90號	10301	28800000

Output:

22546571

Finally:

Please check if your code is also correct in the linux environment.

When you cannot compile your code by our ant build name and you know the reason (for example, you use some external system library), please inform TA for asking the instruction.

Good luck!