CSCI 5408

DATA MANAGEMENT AND  
WAREHOUSING

LAB ASSIGNMENT - 4

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Git Assignment Link : https://git.cs.dal.ca/sukumaran/csci5408\_f23\_b00948977\_balaji\_sukumaran

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| --- |
| **Table of contents** |

|  |  |
| --- | --- |
| **Problem Statement 1:** Create a local database………………………..…………………………………………………………. | **1** |
| **Problem Statement 2:** Create a remote database in GCP……………………………………………………………………… | **2** |
| **Problem Statement 3:** Write a Java program to use both local and remote database..……………………………………... | **4** |
| **Problem Statement 4:** Print query execution time at every step………………………...……………………………………... | **7** |

**Problem Statement 1: Create a local database with –**

**User table (attributes – id, name, email, phone, address)**

Created the User table in local database.

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Figure 1: create statement for user in local database

Inserted sample data in user table

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Figure 2: Sample data for users table

**Order\_info table (order\_id, user\_id,item\_name, quantity, order\_date)**

Created the order info table in local database

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Figure 3: create statment for order\_info table in local database

**Problem Statement 2: Create a remote database in G C P with Inventory table (item\_id,item\_name, available\_quantity)**

Created a GCP MySql instance

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Figure 4: Screenshot of GCP MySql instance

Created an Inventory table in the remote MySql instance and inserted sample data

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Figure 5: Create and insert commands for inventory table

**Problem Statement 3: Write a Java program that –**

**• Fetches item details from the remote database**

**• Creates an order in local database**

**• Writes the updated quantity back to the remote database**

Created a Java program

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Figure 6: java program main method

Turned the profiling on and used show profiles to get the intermediate durations

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Figure 7: method to print the SQL execution duration

Which executes the following business logic in order:

1. Get the inventory details – touches the remote DB

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Figure 8: method to get the remote inventory details

1. Create the order – touches the local DB

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Figure 9: method to create the order

1. Update the inventory – touches the remote DB

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Figure 10: method to update the remote inventory

1. Get the order details - touches the local DB

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Figure 11: Method to get the order details

**Problem Statement 4: Print query execution time at every step.**

**(try to deduce the reason behind the time differences)**

**Note: converted the duration to X1000 for readability**

As we can see here the time taken to insert into the local DB table order\_info took only 1.4605 whereas the updating the remote inventory took 5.70075 which is significantly higher than the local,

reason could be the following,

Since the remote DB is in different geographical location than the local, delay could be due to the network latency to fetch from different geographical location or Network setup in the local works best for the locally executed java program than the network setup of remote Database

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Figure 12: Java program output