README

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**概述**

此專案包含兩個Java程式：

* 裝有ResetAndInsertData.java是我們的資料庫程式碼
* 裝有DatabaseQueryGUI讓使用者透過登入MariaDB，查到那個帳號的資料庫內容(開啟後輸入411177010可查到我們的資料庫)
* 此檔，講解、說明
* 、本次的E-R圖與Relational Schema

**軟體需求**

* MariaDB資料庫
* MariaDB JDBC 驅動

**運行指南**

* 下載此專案。
* 在cmd中輸入：

javac -d "[mariadb-java-client-3.4.0.jar](https://github.com/An20040128/finalExam/blob/master/E-R/lib/mariadb-java-client-3.4.0.jar)檔的位子" "DatabaseQueryGUI.java檔的位子"

和

java -cp "...\GUI\JAVAGUI\bin;[mariadb-java-client-3.4.0.jar](https://github.com/An20040128/finalExam/blob/master/E-R/lib/mariadb-java-client-3.4.0.jar)檔的位子" DatabaseQueryGUI

以我的電腦為例，在VS CODE中的cmd輸入:

javac -d "D:\E-R期末\GUI\JAVAGUI\bin" "D:\E-R期末\GUI\JAVAGUI\src\DatabaseQueryGUI.java"

java -cp "D:\E-R期末\GUI\JAVAGUI\bin;D:\E-R期末\GUI\JAVAGUI\lib\mariadb-java-client-3.4.0.jar" DatabaseQueryGUI



可連線、執行GUI

同理，ResetAndInsertData也是這樣

EX:

javac -cp "D:\E-R期末\E-R\lib\mariadb-java-client-3.4.0.jar" -d "D:\E-R期末\E-R\bin" "D:\E-R期末\E-R\src\ResetAndInsertData.java"

java -cp "D:\E-R期末\E-R\bin;D:\E-R期末\E-R\lib\mariadb-java-client-3.4.0.jar" ResetAndInsertData

**使用指南**

**ResetAndInsertData**

此應用程式會連接到MariaDB資料庫，禁用外鍵約束，清除表格，重新創建表格，並插入預設資料。

**更改數據庫連接**

編輯ResetAndInsertData.java中的以下變數以匹配的MariaDB連接信息：

String url = "jdbc:mariadb://<YOUR\_DB\_URL>";

String user = "<YOUR\_DB\_USER>";

String password = "<YOUR\_DB\_PASSWORD>";

**執行應用程式**

運行ResetAndInsertData來重置並插入資料：

java ResetAndInsertData

**DatabaseQueryGUI**

此GUI，允許使用者檢視所有資料內容、輸入SQL查詢並顯示結果。

**使用圖形界面**

* 在“SQL輸入”文本框中輸入您的SQL查詢
* 點擊“查詢”
* 查詢結果將顯示在下方的文本區域中
* 點擊"查看所有資料"
* 點選想查看的資料後會出現此Table中的所有數據

**錯誤處理**

* 如果應用程式無法連接到資料庫，請檢查您的數據庫連接信息是否正確。
* 如果SQL查詢執行失敗，將顯示錯誤訊息。

**範例查詢結果**

1.開啟GUI，輸入USER:411177010

PASSWORD:411177010

按登入



2.輸入:

SELECT d.DealerName, SUM(s.SalePrice) AS TotalSales

FROM Sales s

JOIN Dealer d ON s.DealerID = d.DealerID

WHERE s.SaleDate >= CURDATE() - INTERVAL 1 YEAR

GROUP BY d.DealerID, d.DealerName

ORDER BY TotalSales DESC

LIMIT 1;

找過去一年內銷售金額最高的經銷商：

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"查看所有資料"的使用流程、結果:



* set of sample query results:

INSERT INTO Plant (PlantID, PlantName) VALUES (1, 'Plant A');

INSERT INTO Plant (PlantID, PlantName) VALUES (2, 'Plant B');

INSERT INTO Brand (BrandID, BrandName) VALUES (1, 'Toyota');

INSERT INTO Brand (BrandID, BrandName) VALUES (2, 'Honda');

INSERT INTO Brand (BrandID, BrandName) VALUES (3, 'Tesla');

INSERT INTO Brand (BrandID, BrandName) VALUES (4, 'Lexus');

INSERT INTO Brand (BrandID, BrandName) VALUES (5, 'Nissan');

INSERT INTO Model (ModelID, ModelName, BrandID, ModelType) VALUES (1, 'Camry', 1, 'Sedan');

INSERT INTO Model (ModelID, ModelName, BrandID, ModelType) VALUES (2, 'Civic', 2, 'Sedan');

INSERT INTO Model (ModelID, ModelName, BrandID, ModelType) VALUES (3, 'Model S', 3, 'Sedan');

INSERT INTO Model (ModelID, ModelName, BrandID, ModelType) VALUES (4, 'RX', 4, 'SUV');

INSERT INTO Model (ModelID, ModelName, BrandID, ModelType) VALUES (5, 'Altima', 5, 'Sedan');

INSERT INTO Customer (CustomerID, Name, Address, Phone, Gender, Income) VALUES (1, 'John Doe', '123 Elm St', '555-1234', 'M', 60000);

INSERT INTO Customer (CustomerID, Name, Address, Phone, Gender, Income) VALUES (2, 'Jane Smith', '456 Oak St', '555-5678', 'F', 75000);

INSERT INTO Customer (CustomerID, Name, Address, Phone, Gender, Income) VALUES (3, 'Alice Johnson', '789 Pine St', '555-6789', 'F', 80000);

INSERT INTO Customer (CustomerID, Name, Address, Phone, Gender, Income) VALUES (4, 'Bob Brown', '101 Maple St', '555-9876', 'M', 55000);

INSERT INTO Customer (CustomerID, Name, Address, Phone, Gender, Income) VALUES (5, 'Michael White', '102 Cedar St', '555-4321', 'M', 70000);

INSERT INTO Dealer (DealerID, DealerName, Address, DealerPhone) VALUES (1, 'Best Motors', '123 Main St', '555-7890');

INSERT INTO Dealer (DealerID, DealerName, Address, DealerPhone) VALUES (2, 'Super Cars', '456 Elm St', '555-9876');

INSERT INTO Dealer (DealerID, DealerName, Address, DealerPhone) VALUES (3, 'Top Vehicles', '789 Maple St', '555-6543');

INSERT INTO Dealer (DealerID, DealerName, Address, DealerPhone) VALUES (4, 'Auto World', '321 Oak St', '555-1234');

INSERT INTO Transmission (TransmissionID, SupplierName, ManufactureDate, PlantID) VALUES (1, 'Getrag', '2023-01-01', 1);

INSERT INTO Transmission (TransmissionID, SupplierName, ManufactureDate, PlantID) VALUES (2, 'Aisin', '2023-02-01', 2);

INSERT INTO Transmission (TransmissionID, SupplierName, ManufactureDate, PlantID) VALUES (3, 'BorgWarner', '2023-03-01', 1);

INSERT INTO Vehicle (VIN, ModelID, TransmissionID, CustomerID, DealerID, SaleDate, Color, Transmission) VALUES ('VIN001', 1, 1, 1, 1, '2023-05-01', 'Red', 'Automatic');

INSERT INTO Vehicle (VIN, ModelID, TransmissionID, CustomerID, DealerID, SaleDate, Color, Transmission) VALUES ('VIN002', 2, 2, 2, 2, '2023-06-01', 'Blue', 'Manual');

INSERT INTO Vehicle (VIN, ModelID, TransmissionID, CustomerID, DealerID, SaleDate, Color, Transmission) VALUES ('VIN003', 3, 1, 3, 3, '2023-07-01', 'White', 'Automatic');

INSERT INTO Vehicle (VIN, ModelID, TransmissionID, CustomerID, DealerID, SaleDate, Color, Transmission) VALUES ('VIN004', 4, 2, 4, 1, '2023-08-01', 'Black', 'Automatic');

INSERT INTO Vehicle (VIN, ModelID, TransmissionID, CustomerID, DealerID, SaleDate, Color, Transmission) VALUES ('VIN005', 3, 1, 1, 2, '2023-09-01', 'Gray', 'Manual');

INSERT INTO Vehicle (VIN, ModelID, TransmissionID, CustomerID, DealerID, SaleDate, Color, Transmission) VALUES ('VIN006', 4, 2, 2, 3, '2023-10-01', 'Silver', 'Automatic');

INSERT INTO Vehicle (VIN, ModelID, TransmissionID, CustomerID, DealerID, SaleDate, Color, Transmission) VALUES ('VIN007', 5, 3, 5, 4, '2023-11-01', 'Blue', 'Automatic');

INSERT INTO Sales (SaleID, VIN, SaleDate, SalePrice, DealerID) VALUES (1, 'VIN001', '2023-05-01', 30000, 1);

INSERT INTO Sales (SaleID, VIN, SaleDate, SalePrice, DealerID) VALUES (2, 'VIN002', '2023-06-01', 28000, 2);

INSERT INTO Sales (SaleID, VIN, SaleDate, SalePrice, DealerID) VALUES (3, 'VIN003', '2023-07-01', 32000, 3);

INSERT INTO Sales (SaleID, VIN, SaleDate, SalePrice, DealerID) VALUES (4, 'VIN004', '2023-08-01', 31000, 1);

INSERT INTO Sales (SaleID, VIN, SaleDate, SalePrice, DealerID) VALUES (5, 'VIN005', '2023-09-01', 29000, 2);

INSERT INTO Sales (SaleID, VIN, SaleDate, SalePrice, DealerID) VALUES (6, 'VIN006', '2023-10-01', 33000, 3);

INSERT INTO Sales (SaleID, VIN, SaleDate, SalePrice, DealerID) VALUES (7, 'VIN007', '2023-11-01', 35000, 4);

INSERT INTO Inventory (inventory\_id, VIN, DealerID, inventory\_date) VALUES (1, 'VIN001', 1, '2023-04-01');

INSERT INTO Inventory (inventory\_id, VIN, DealerID, inventory\_date) VALUES (2, 'VIN002', 2, '2023-05-01');

INSERT INTO Inventory (inventory\_id, VIN, DealerID, inventory\_date) VALUES (3, 'VIN003', 3, '2023-06-01');

INSERT INTO Inventory (inventory\_id, VIN, DealerID, inventory\_date) VALUES (4, 'VIN004', 1, '2023-07-01');

INSERT INTO Inventory (inventory\_id, VIN, DealerID, inventory\_date) VALUES (5, 'VIN005', 2, '2023-08-01');

INSERT INTO Inventory (inventory\_id, VIN, DealerID, inventory\_date) VALUES (6, 'VIN006', 3, '2023-09-01');

INSERT INTO Inventory (inventory\_id, VIN, DealerID, inventory\_date) VALUES (7, 'VIN007', 4, '2023-10-01');