DATABASE MANAGEMENT SYSTEM (CS310)

PROJECT TITLE -

Database design on Car vehicle insurance company

Under the Guidance of -

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PROJECT TITLE

A database for a Vehicle Insurance Company.

PURPOSE

This module provides a comprehensive discussion of, and practical experience in, advanced entity modelling; normalisation; transactional relational database design; SQL coding; and generation of data backed management reports.

PROJECT BENEFITS

To make a good DB, that could be used with analytical tools and faster in delivering the right data at the right time for better decision making.

ABSTRACT

The Insurance management system is a complete solution for organizations, which need to manage insurance for their vehicles, equipment, buildings, and other resources. Organizes and tracks insurance vendors and the policies provided under different coverage.

Insurance policy administration system consists of a mathematical notation that captures the relationship between policies and objects and the entities that manage policies for those objects.

Hence there is a need for an automated system, which can efficiently manage the company, records, provides instant access and one that improves productivity. As a result of this automated system, the activities of the company are performed within the stipulated time and the reliable and efficient service is ensured to its users.

The insurance company needs to keep track of details of its target companies, agents, policyholders, their premium payments and the various products that are available with it. Hence it is under tremendous pressure maintaining their day-to-day activities, which is currently being done manually.

Entire records have to be updated timely, even a slight mistake could complicate things.. It is time consuming to summarize these details to produce the reports.

INTRODUCTION

Relational databases are logical collections of inter-related data in tabular form relational databases have always been core to any management system. Its relevance is profound and hence the need to incorporate new functionalities, utilities becomes important. These are currently the predominant choice in storing financial records manufacturing and logistical information, personnel data and much more.

Relational databases are used in huge management systems like Post Office, Banking, Railway, Defence Logistics. Databases pertaining to Educational Institutions and other large collection of related data.

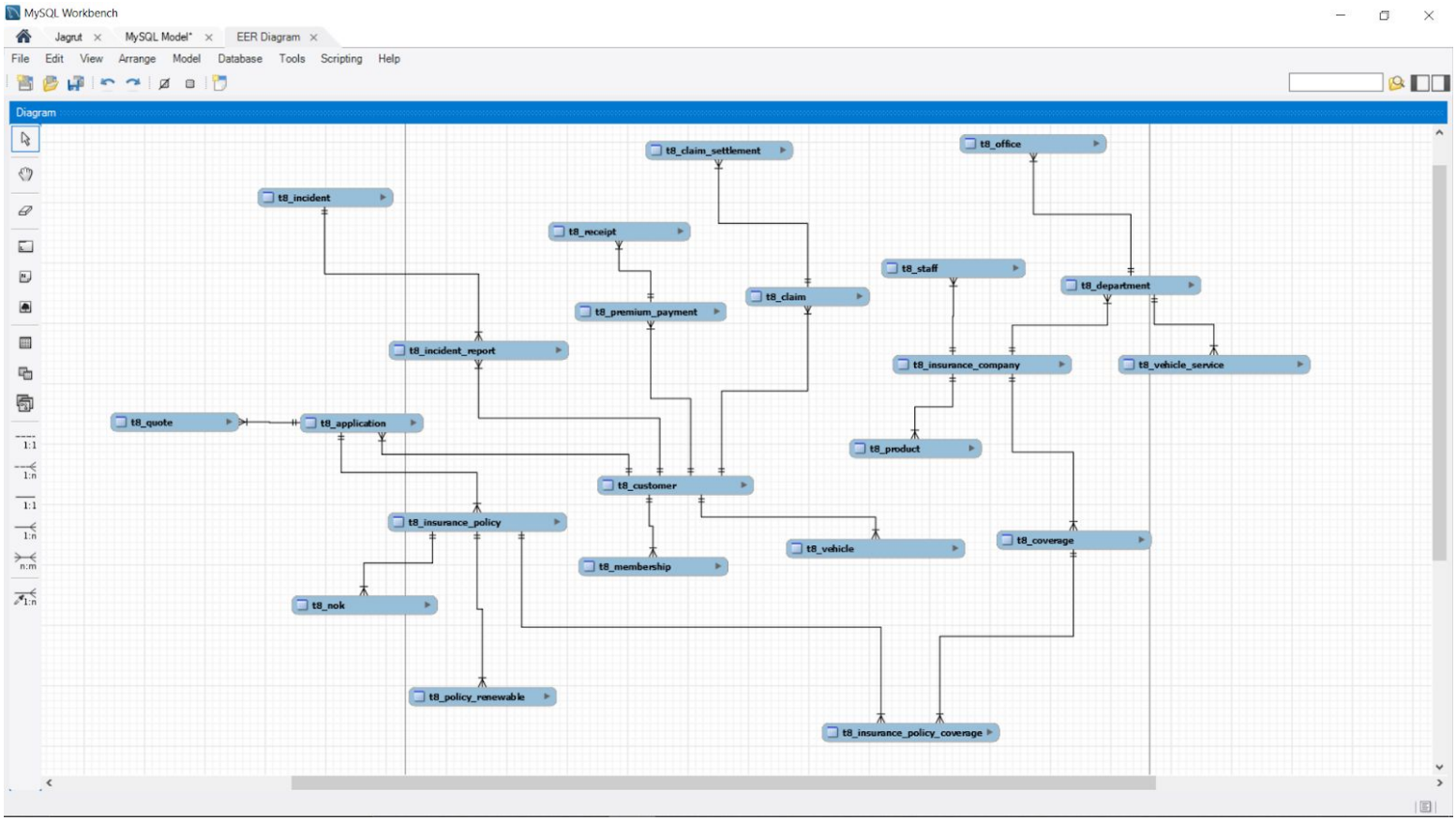
Relational databases have largely replaced hierarchical databases and network databases because they are easy to understand and use even though they are much less efficient.

The software components used in our project are as under:

MY SQL WORKBENCH

Conceptual Data Model (CDM)

The conceptual data model is a structured business view of the data required to support business processes, record business events, and track related performance measures. This model focuses on identifying the data used in the business but not its processing flow or physical characteristics. This model's perspective is independent of any underlying business applications.



The above diagram describes how each table is conceptually related to each other.

Customer owns **Vehicles**

Customer files for **Claim**

Customer applies for the **Application**

Customer holds the **Membership**

Customer having any **Incident report**

Incident details stored in **Incident report**

Claim approved claim settlement **Been settled**

Premium Payment has details shown in **Receipt**

Insurance Company has different number of **Products**

Insurance Company covers **Coverage**

Insurance Company has **Staff**

Insurance Company has different **Departments**

Department is in **Office**

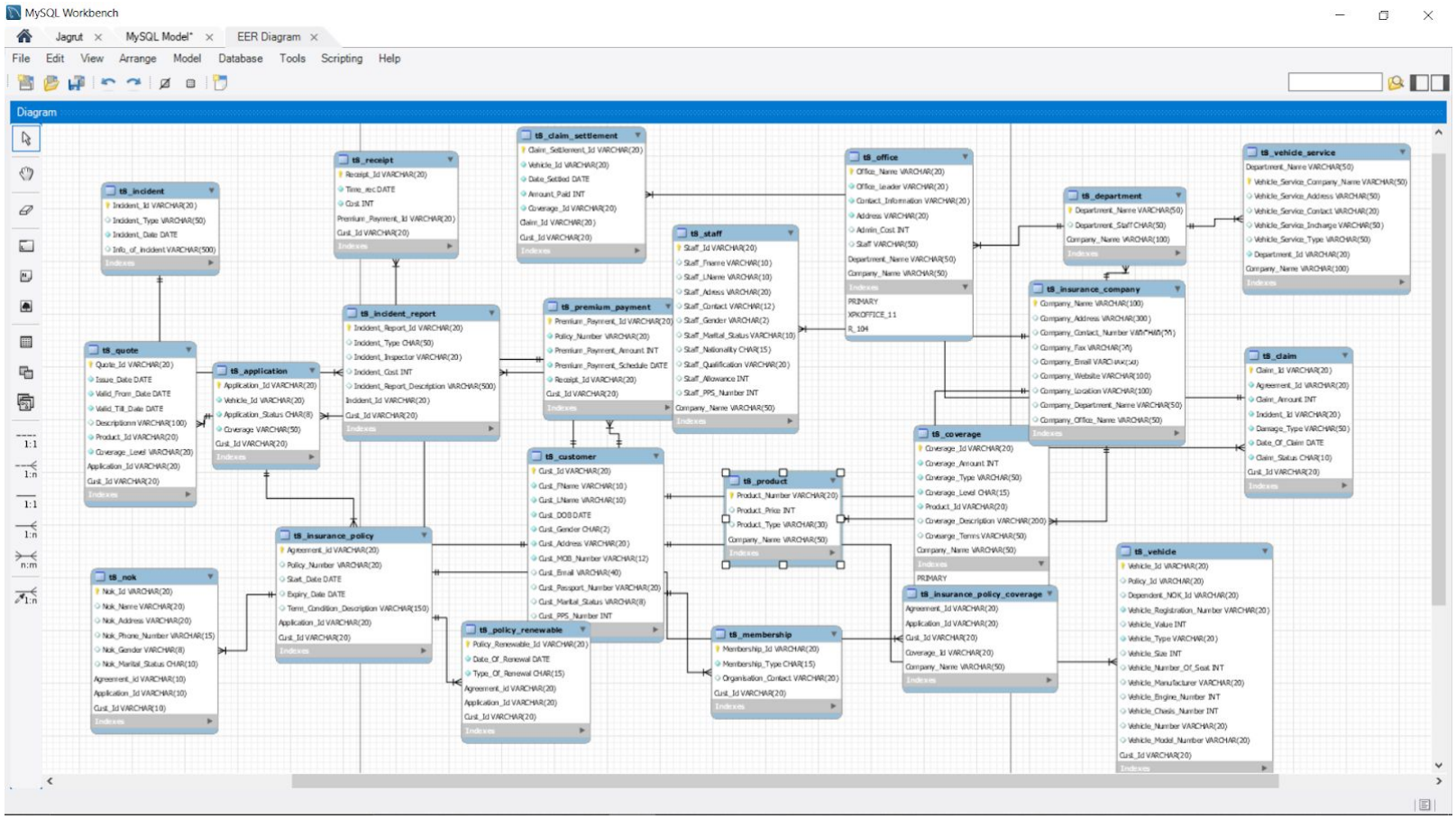
Application has **Quote**

Insurance Policy shows details **Insurance policy coverage**

Application customer applied **Insurance policy**

Application applies **Customer**

Logical Data Model (LDM)



Relationship of entities for car insurance database

Customer one to many **Claim**
Customer one to many **Vehicle**
Customer one to many **Premium payment**
Customer many to many **Membership**
Customer many to many **Incident**
Customer one to many **Incident report**
Customer one to many **Application**

Application one to many **Quote**
Application one to many **Insurance policy**

Insurance policy one to many **Insurance policy coverage**
Insurance policy one to many **Policy renewable**
Insurance policy one to many **Nok**

Premium_payment one to many **Receipt**

Claim one to many **Claim settlement**

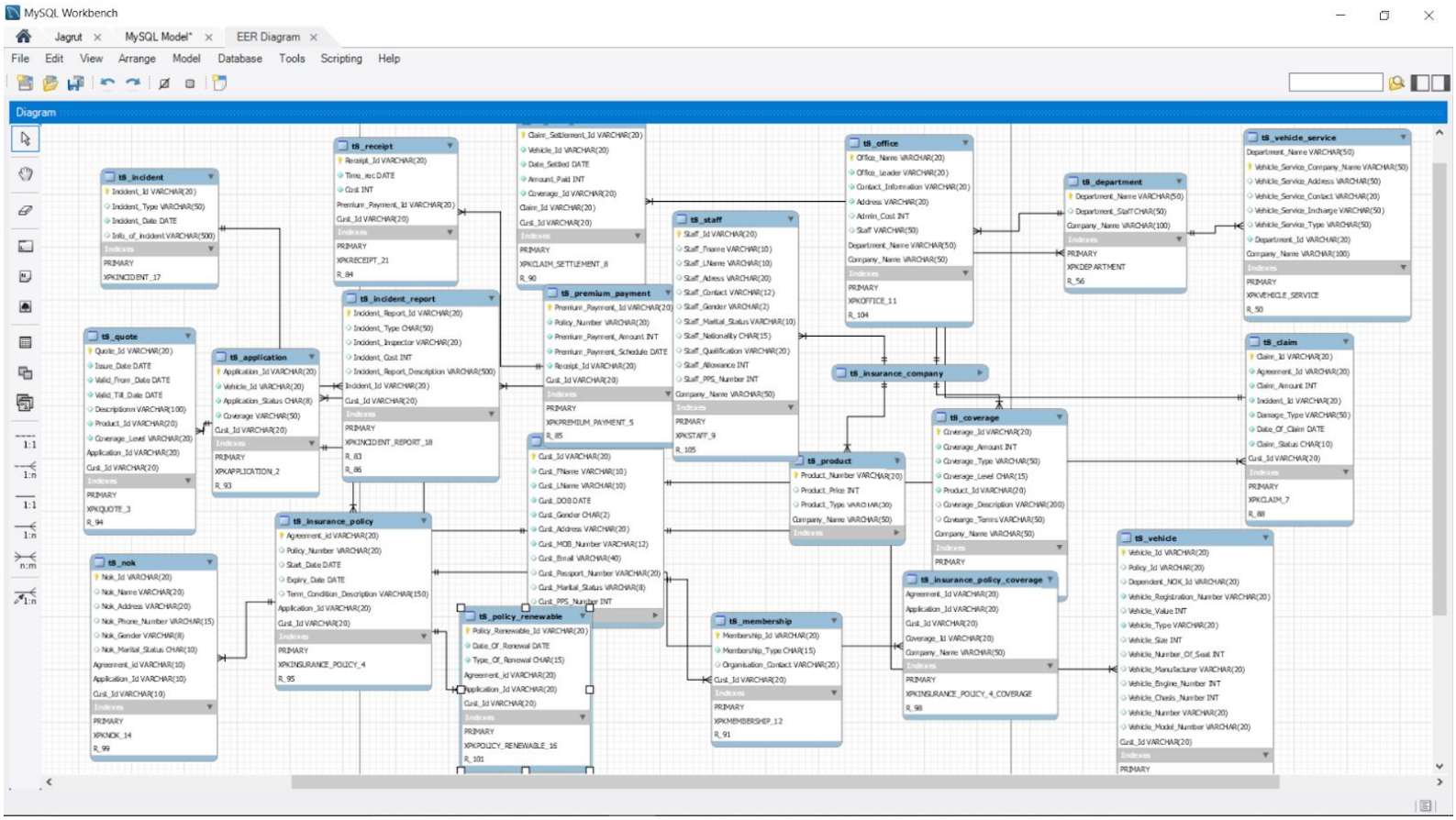
Insurance company one to many **Staff**
Insurance company one to many **Coverage**
Insurance company one to many **Product**
Insurance company one to many **Department**

Department one to many **Vehicle service**

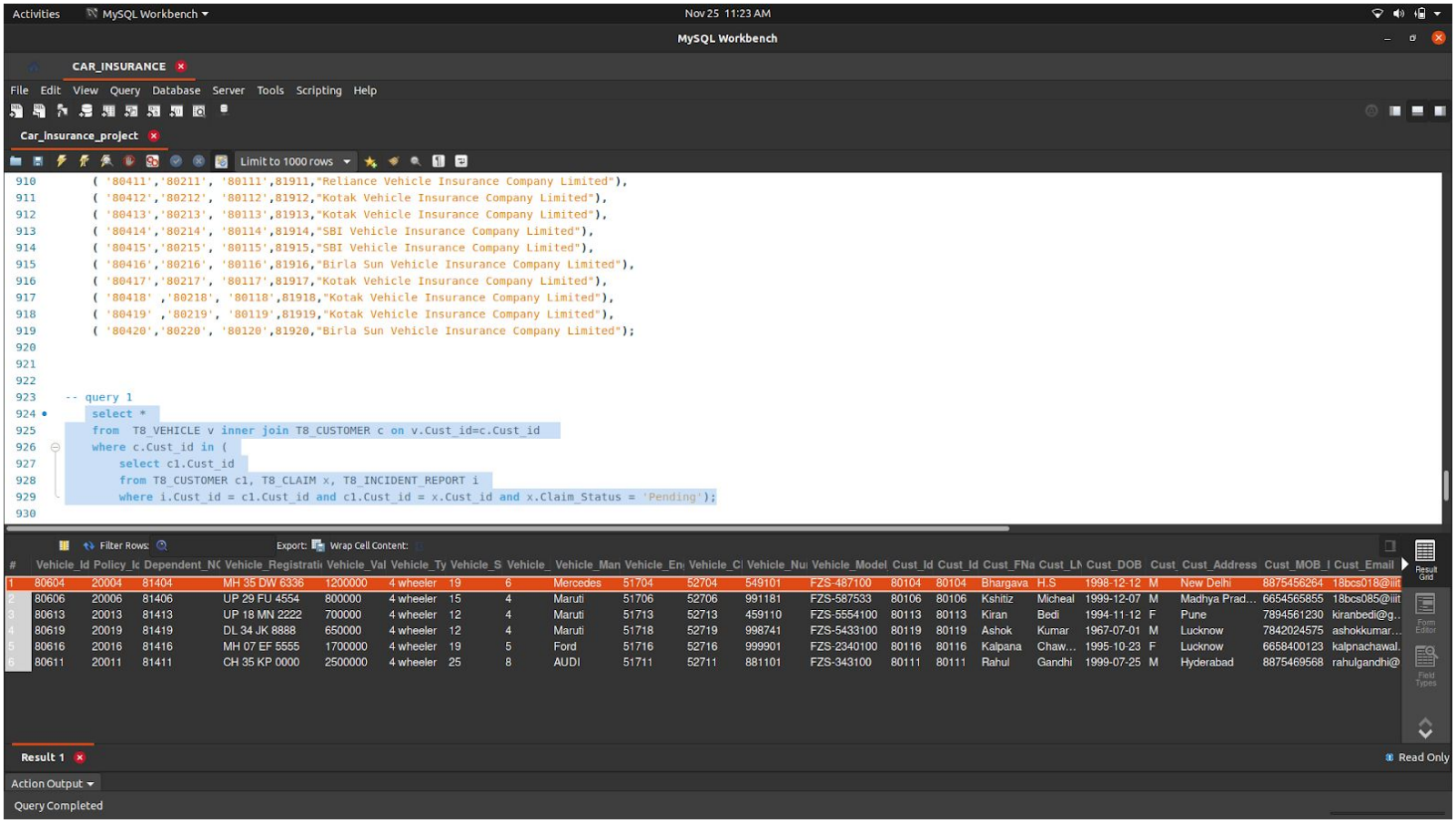
Office many to many **Department**

Coverage one to many **Insurance policy coverage**

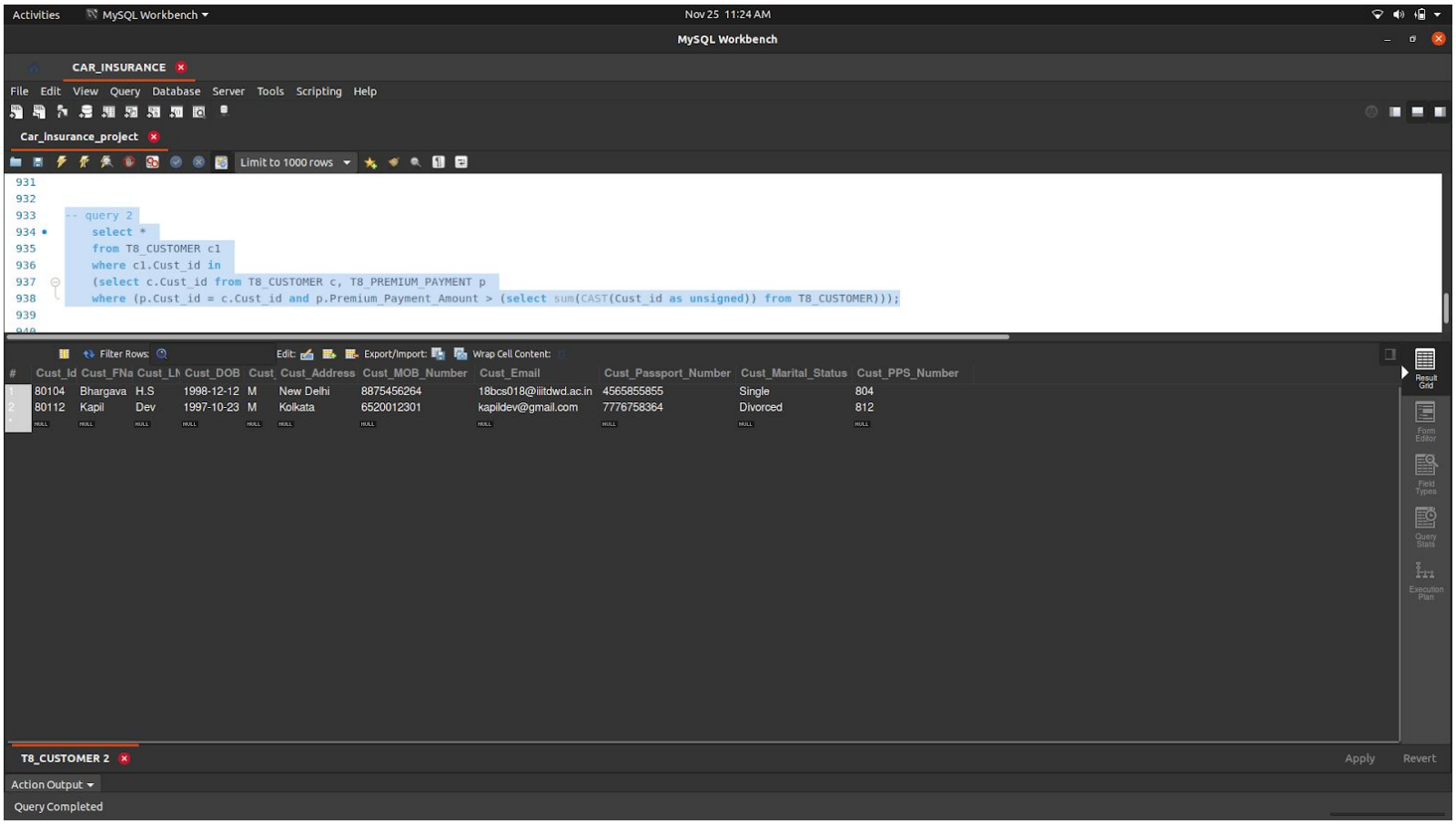
Physical Data Model (PDM)



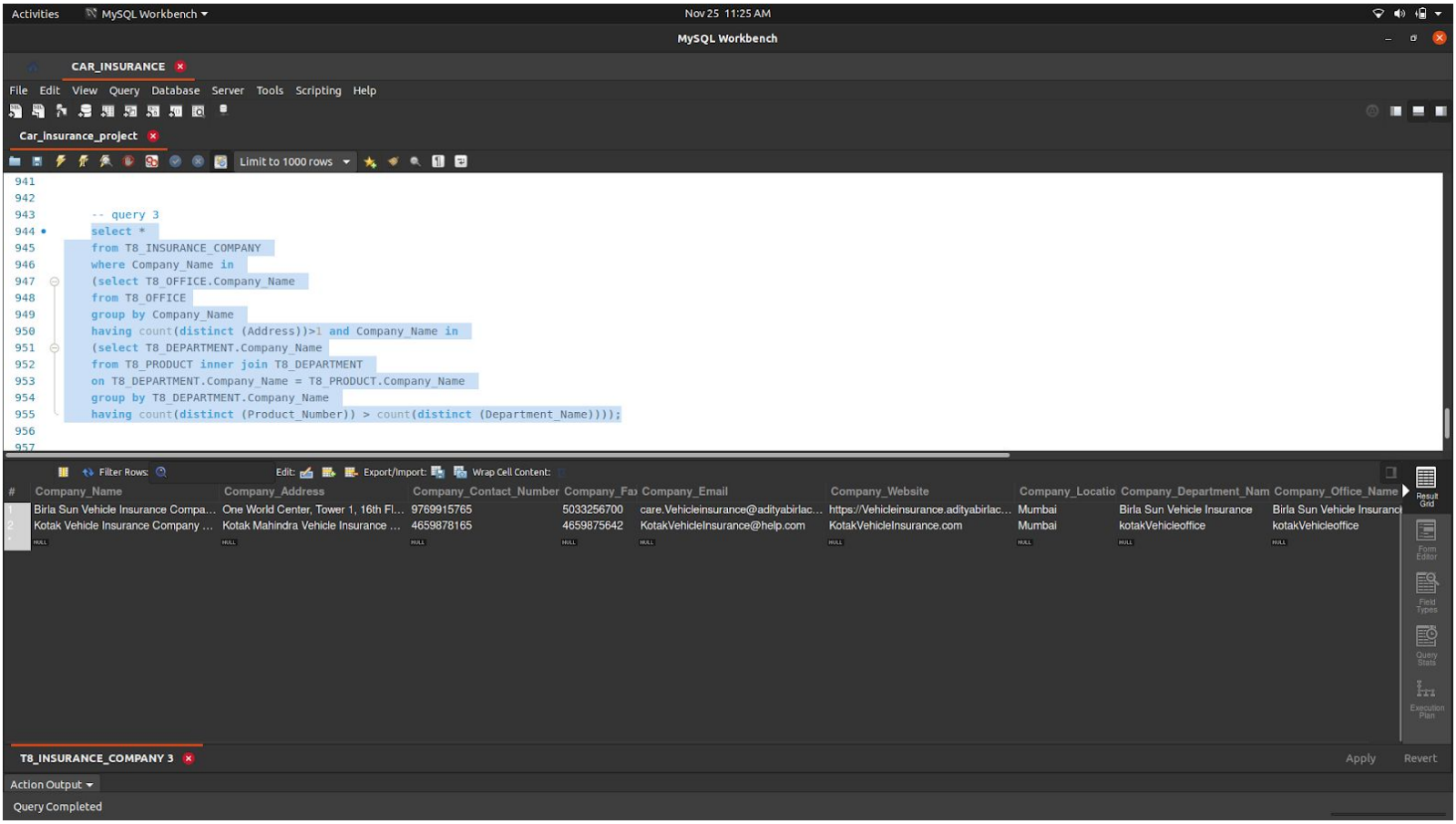
The above diagram shows the physical data model of the vehicle insurance company DBM**S.**



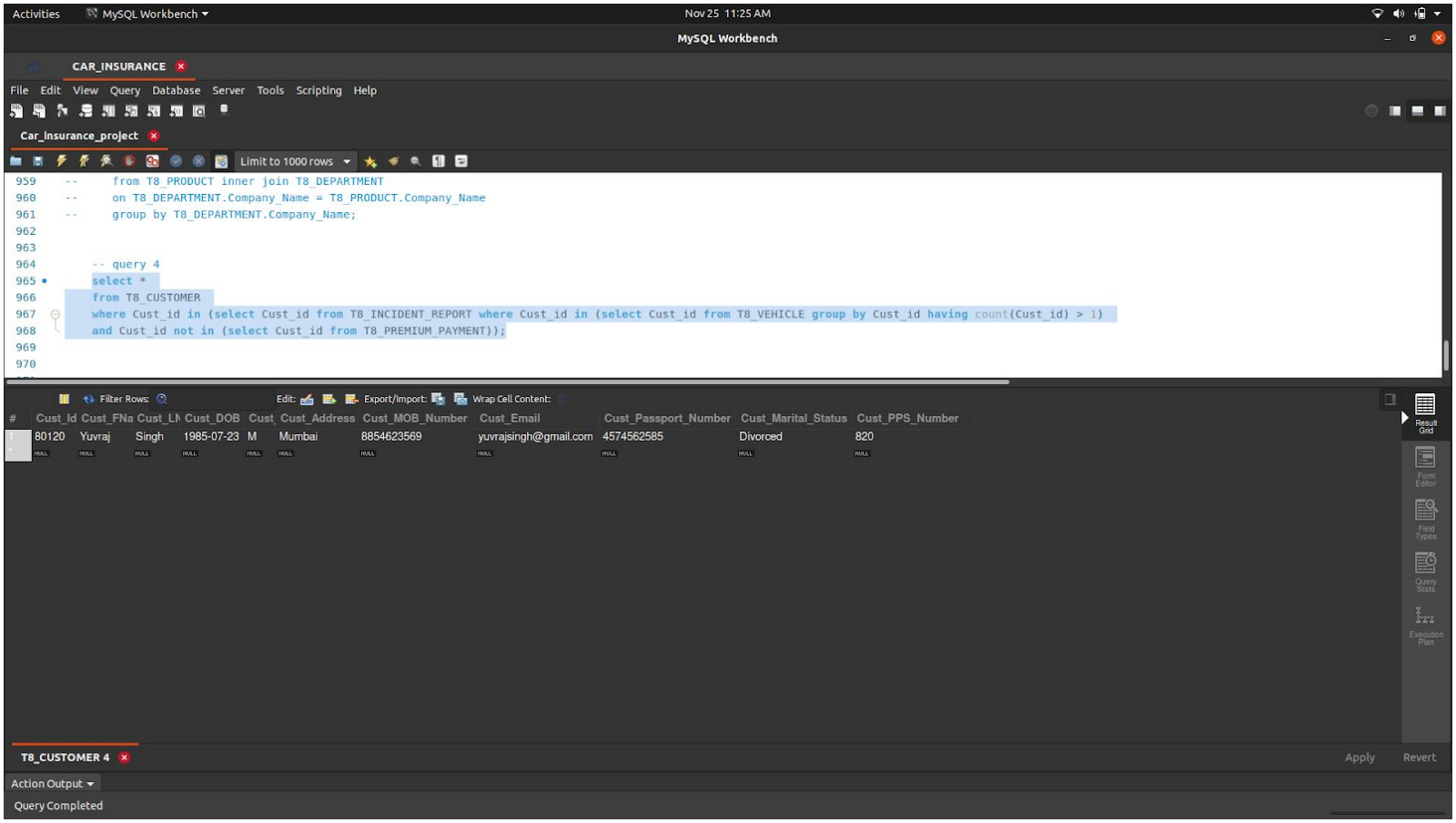

```
select *
from T8_VEHICLE v inner join T8_CUSTOMER c on v.Cust_id = c.Cust_id
where c.Cust_id in (
        select c1.Cust_id
        from T8_CUSTOMER c1, T8_CLAIM x, T8_INCIDENT_REPORT i
        where i.Cust_id = c1.Cust_id and c1.Cust_id =      x.Cust_id and
        x.Claim_Status='Pending');
```



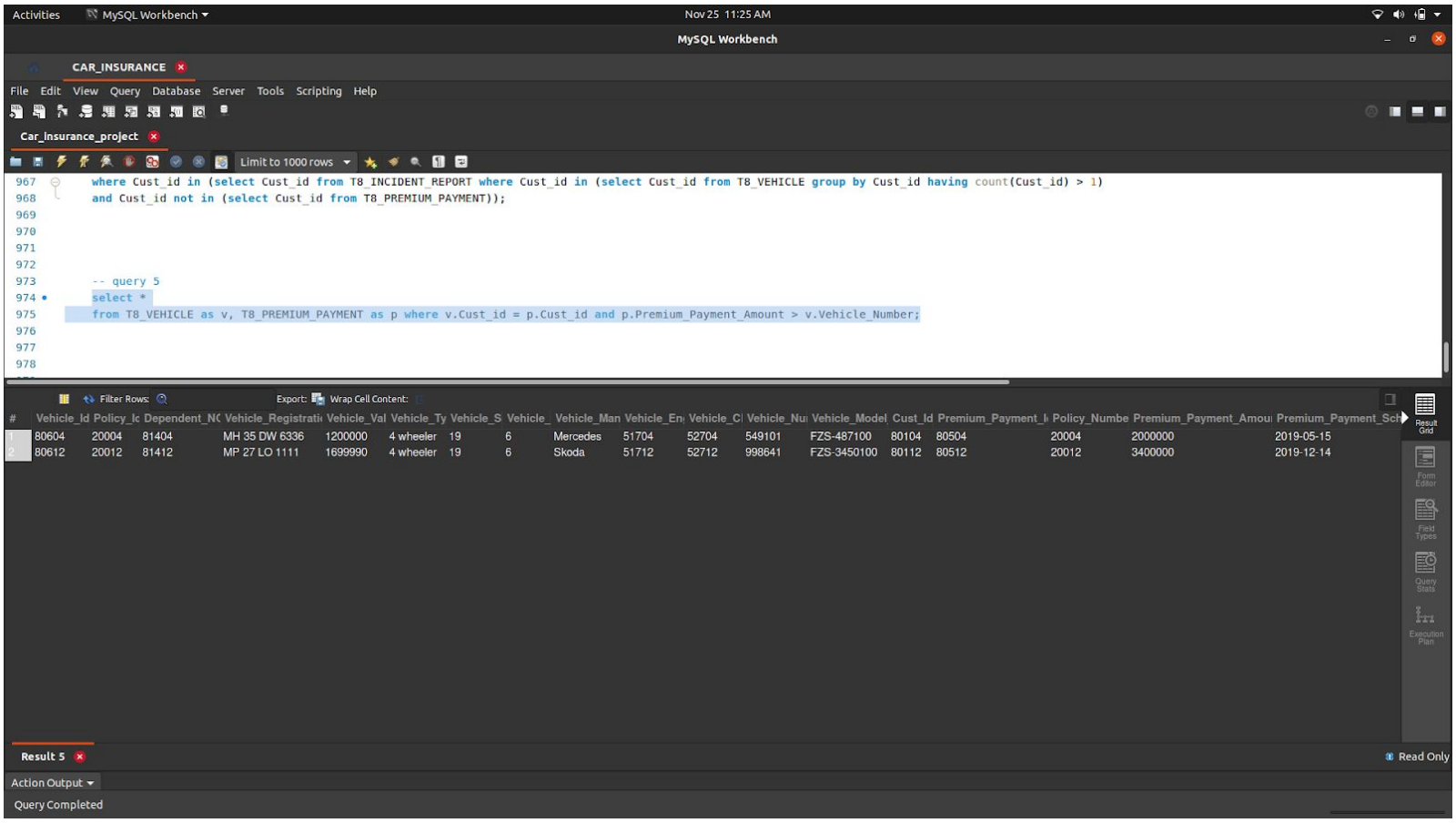

```
select *
from T8_CUSTOMER c1
where c1.Cust_id in
(select c.Cust_id from T8_CUSTOMER c,  T8_PREMIUM_PAYMENT p
where (p.Cust_id = c.Cust_id and p.Premium_Payment_Amount > (select
sum(CAST(Cust_id as unsigned)) from T8_CUSTOMER)));
```




```
select *
from T8_INSURANCE_COMPANY
where Company_Name in
(select T8_OFFICE.Company_Name
from T8_OFFICE
group by Company_Name
having count(distinct(Address))>1 and Company_Name in
(select T8_DEPARTMENT.Company_Name
from T8_PRODUCT inner join T8_DEPARTMENT
on T8_DEPARTMENT.Company_Name =  T8_PRODUCT.Company_Name
group by T8_DEPARTMENT.Company_Name
having count(distinct(Product_Number)) > count(distinct(Department_Name))));
```

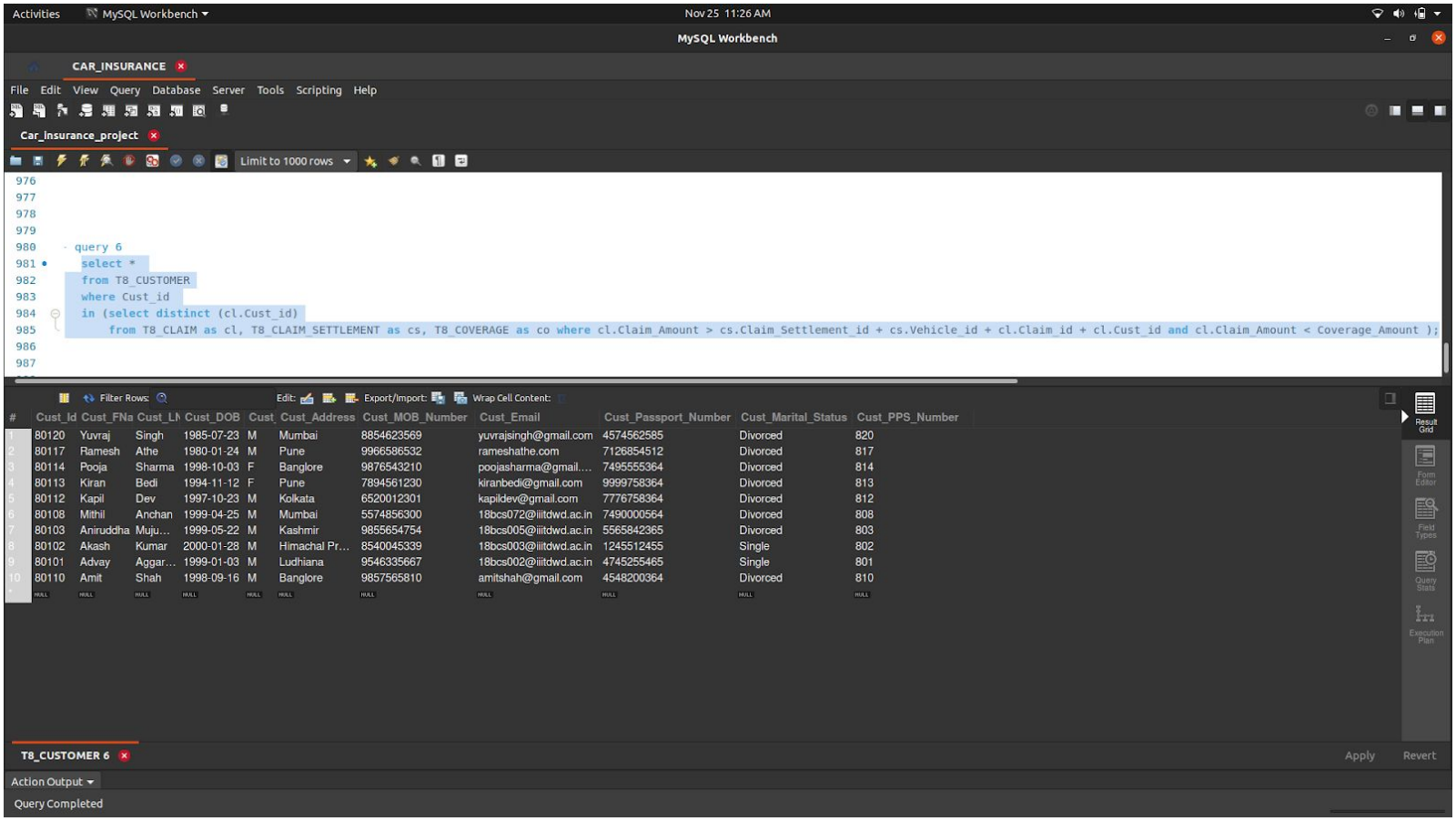



```
select *
from T8_CUSTOMER
where Cust_id in (select Cust_id from T8_INCIDENT_REPORT where Cust_id in
(select Cust_id from T8_VEHICLE group by Cust_id having count(Cust_id) > 1)
and Cust_id not in (Select Cust_id from T8_PREMIUM_PAYMENT));
```



#	Vehicle_Id	Policy_Ic	Dependent_NC	Vehicle_Registrati	Vehicle_Val	Vehicle_Ty	Vehicle_S	Vehicle_	Vehicle_Man	Vehicle_En	Vehicle_Cl	Vehicle_Nu	Vehicle_Model	Cust_Id	Premium_Payment_I	Policy_Numbe	Premium_Payment_Amou	Premium_Payment_Sch
1	80604	20004	81404	MH 35 DW 6336	1200000	4 wheeler	19	6	Mercedes	51704	52704	549101	FZS-487100	80104	80504	20004	2000000	2019-05-15
2	80612	20012	81412	MP 27 LO 1111	1699990	4 wheeler	19	6	Skoda	51712	52712	998641	FZS-3450100	80112	80512	20012	3400000	2019-12-14

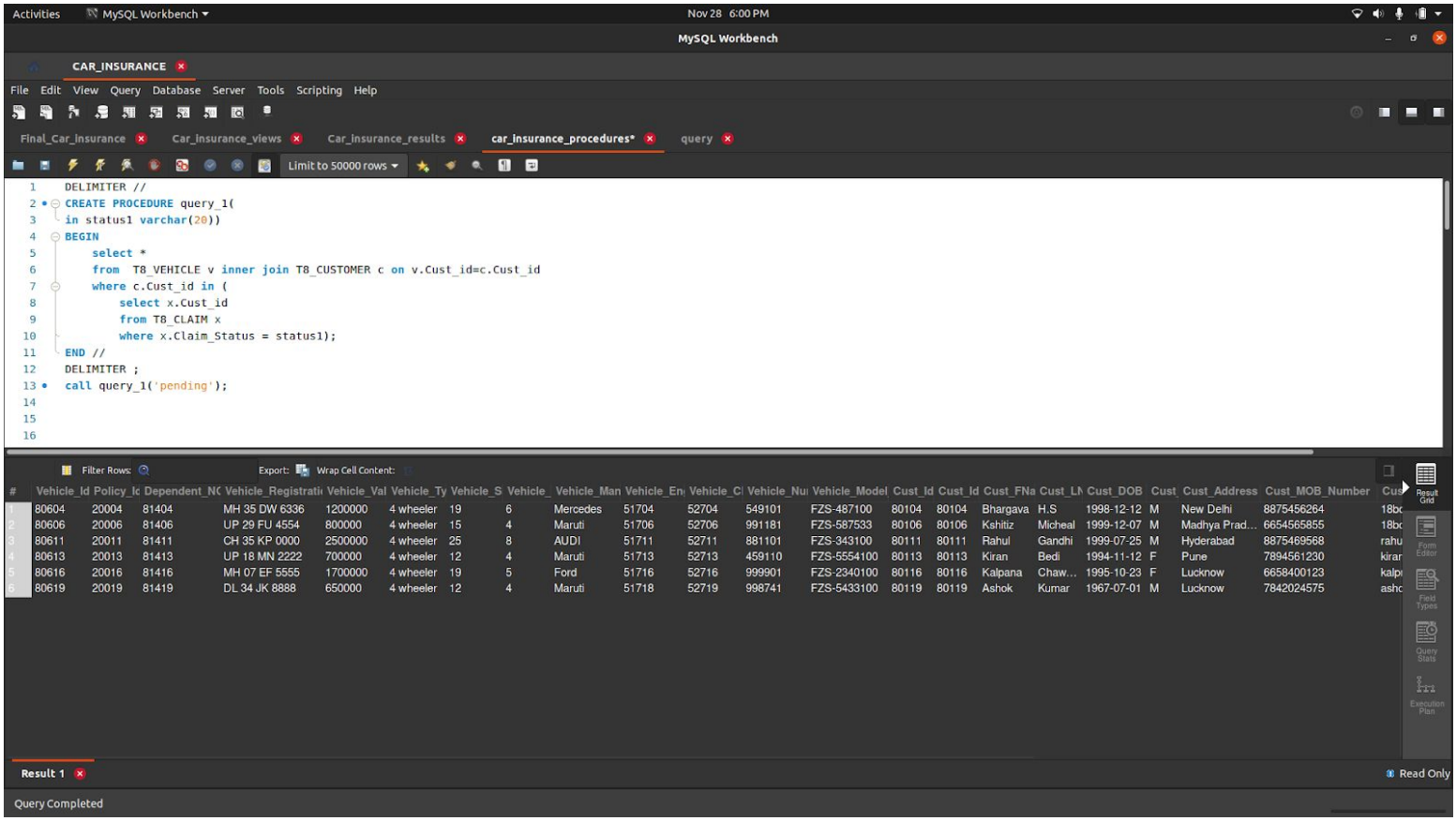
select *
from T8_VEHICLE as v, T8_PREMIUM_PAYMNET as p where v.Cust_id =
p.Cust_id and p.Premium_Payment_Amount > v.Vehicle_Number;



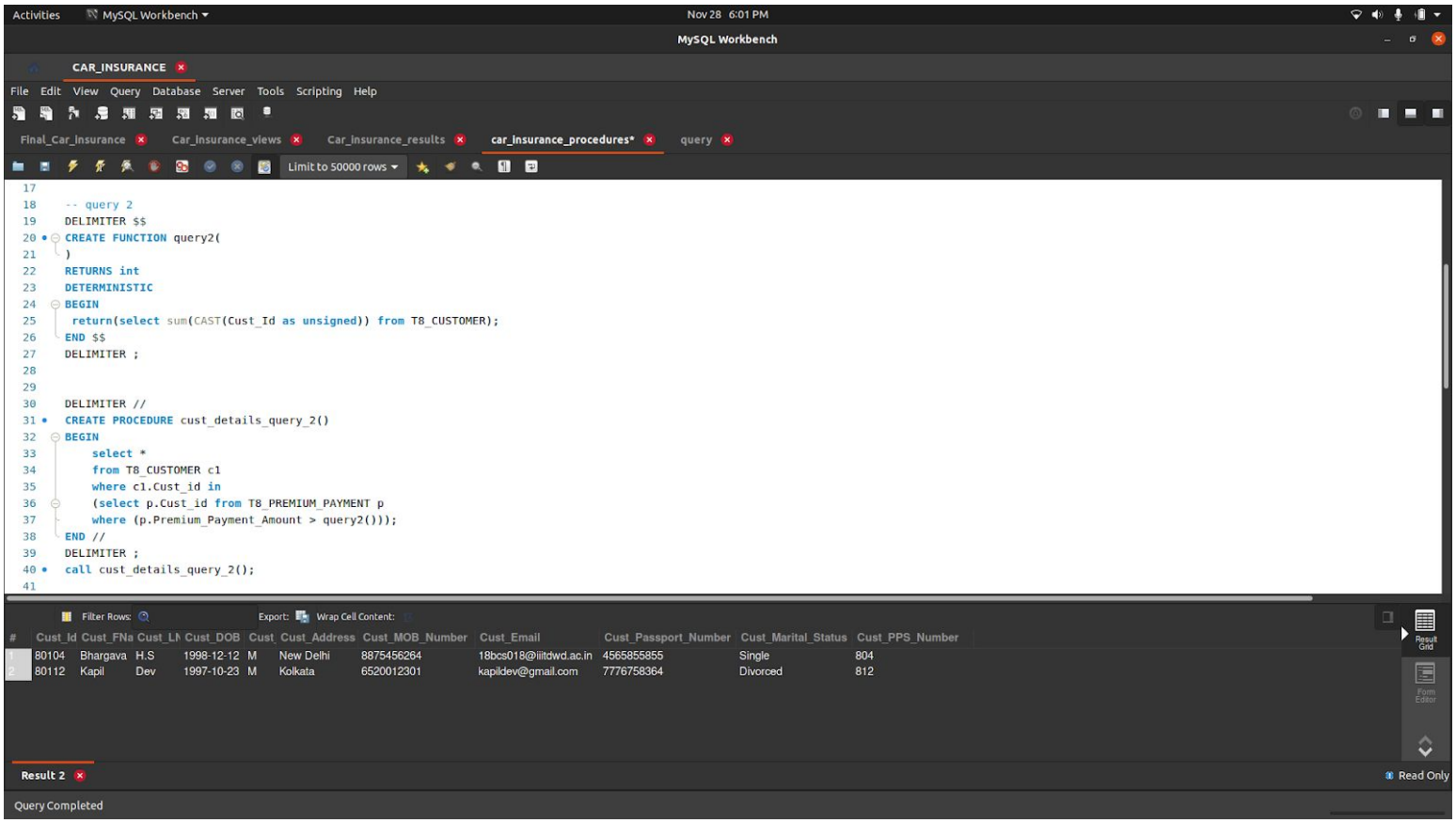
#	Cust_Id	Cust_FNa	Cust_LN	Cust_DOB	Cust	Cust_Address	Cust_MOB_Number	Cust_Email	Cust_Passport_Number	Cust_Marital_Status	Cust_PPS_Number
1	80120	Yuvraj	Singh	1985-07-23	M	Mumbai	8854623569	yuvrajsingh@gmail.com	4574562585	Divorced	820
2	80117	Ramesh	Athe	1980-01-24	M	Pune	9966586532	rameshathe.com	7126854512	Divorced	817
3	80114	Pooja	Sharma	1998-10-03	F	Banglore	9876543210	poojasharma@gmail....	7495555364	Divorced	814
4	80113	Kiran	Bedi	1994-11-12	F	Pune	7894561230	kiranbedi@gmail.com	9999758364	Divorced	813
5	80112	Kapil	Dev	1997-10-23	M	Kolkata	6520012301	kapildev@gmail.com	7776758364	Divorced	812
6	80108	Mithil	Anchan	1999-04-25	M	Mumbai	5574856300	18bcs072@iiitdwd.ac.in	7490000564	Divorced	808
7	80103	Aniruddha	Muju...	1999-05-22	M	Kashmir	9855654754	18bcs005@iiitdwd.ac.in	5565842365	Divorced	803
8	80102	Akash	Kumar	2000-01-28	M	Himachal Pr...	8540045339	18bcs003@iiitdwd.ac.in	1245512455	Single	802
9	80101	Advay	Aggar...	1999-01-03	M	Ludhiana	9546335667	18bcs002@iiitdwd.ac.in	4745255465	Single	801
10	80110	Amit	Shah	1998-09-16	M	Banglore	9857565810	amitshah@gmail.com	4548200364	Divorced	810

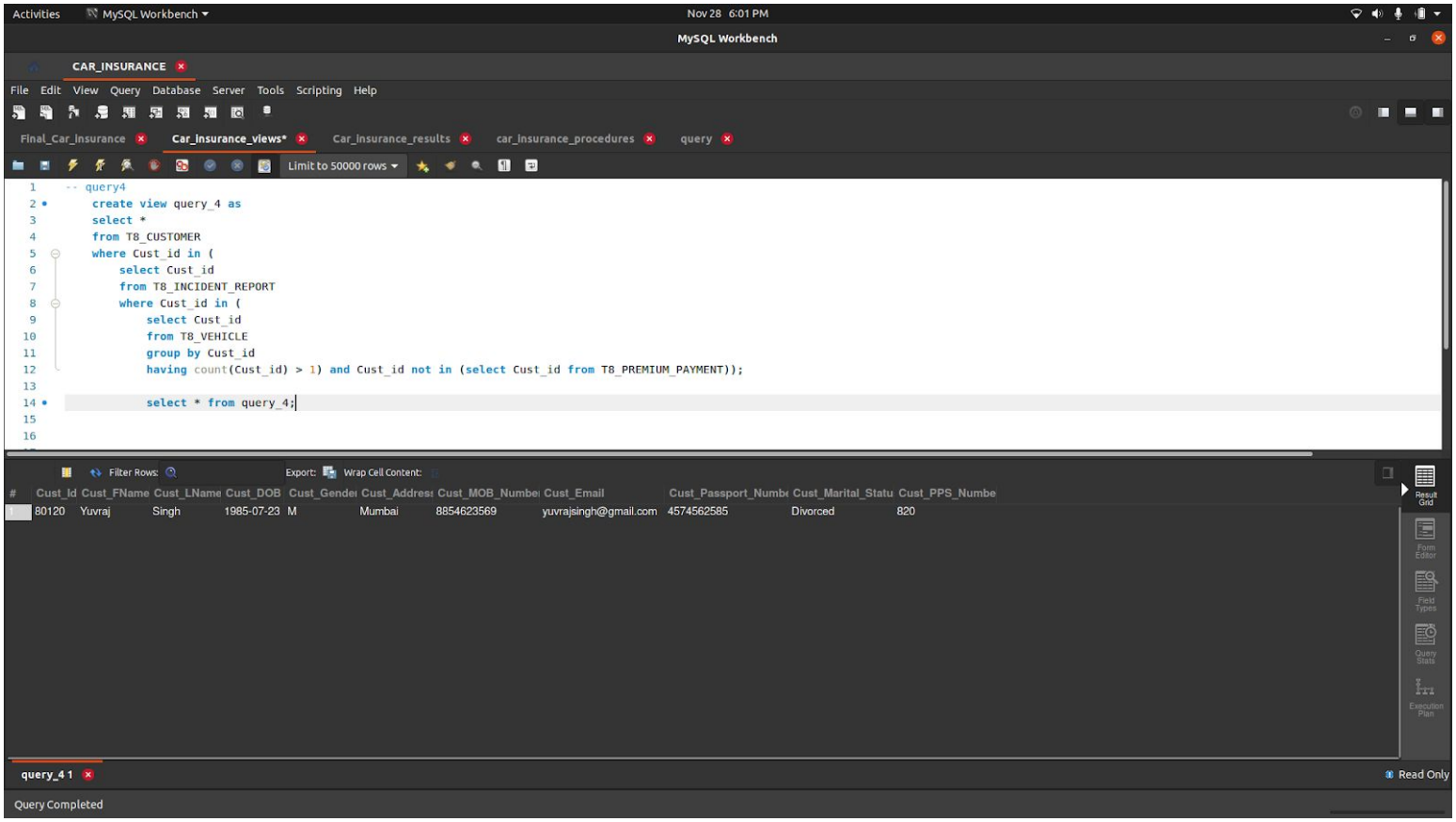
```
select*
from T8_CUSTOMER
where Cust_id
in (select distinct(c1.Cust_id)
from T8_CLAIM as c1, T8_CLAIM_SETTLEMENT as cs, T8_COVERAGE as c0
where c1.Claim_Amount > cs.Claim_Settlement_id + cs.Vehicle_id + c1.Claim_id
+ c1.Cust_id and c1.Claim_Amount < Coverage_Amount);
```

PROCEDURES and VIEWS



#	Vehicle_Id	Policy_Id	Dependent_NO	Vehicle_Registrati	Vehicle_Val	Vehicle_Ty	Vehicle_S	Vehicle_	Vehicle_Man	Vehicle_En	Vehicle_Cl	Vehicle_Nu	Vehicle_Model	Cust_Id	Cust_Id	Cust_FNa	Cust_LN	Cust_DOB	Cust_	Cust_Address	Cust_MOB_Number	Cus
1	80604	20004	81404	MH 35 DW 6336	1200000	4 wheeler	19	6	Mercedes	51704	52704	549101	FZS-487100	80104	80104	Bhargava	H.S	1998-12-12	M	New Delhi	8875456264	18bc
2	80606	20006	81406	UP 29 FU 4554	800000	4 wheeler	15	4	Maruti	51706	52706	991181	FZS-587533	80106	80106	Kshitiz	Micheal	1999-12-07	M	Madhya Prad...	6654565855	18bc
3	80611	20011	81411	CH 35 KP 0000	2500000	4 wheeler	25	8	AUDI	51711	52711	881101	FZS-343100	80111	80111	Rahul	Gandhi	1999-07-25	M	Hyderabad	8875469568	rahu
4	80613	20013	81413	UP 18 MN 2222	700000	4 wheeler	12	4	Maruti	51713	52713	459110	FZS-5554100	80113	80113	Kiran	Bedi	1994-11-12	F	Pune	7894561230	kirar
5	80616	20016	81416	MH 07 EF 5555	1700000	4 wheeler	19	5	Ford	51716	52716	999901	FZS-2340100	80116	80116	Kalpana	Chaw...	1995-10-23	F	Lucknow	6658400123	kalp
6	80619	20019	81419	DL 34 JK 8888	650000	4 wheeler	12	4	Maruti	51718	52719	998741	FZS-5433100	80119	80119	Ashok	Kumar	1967-07-01	M	Lucknow	7842024575	ashc


Activities
MySQL Workbench
Nov 28 6:01 PM
MySQL Workbench
CAR_INSURANCE
File Edit View Query Database Server Tools Scripting Help
Final_Car_Insurance
Car_Insurance_views
Car_Insurance_results
car_insurance_procedures*
query
Limit to 50000 rows
-- query 2
DELIMITER $$
CREATE FUNCTION query2(
)
RETURNS int
DETERMINISTIC
BEGIN
return(select sum(CAST(Cust_Id as unsigned)) from T8_CUSTOMER);
END $$
DELIMITER ;
DELIMITER //
CREATE PROCEDURE cust_details_query_2()
BEGIN
select *
from T8_CUSTOMER c1
where c1.Cust_id in
(select p.Cust_id from T8_PREMIUM_PAYMENT p
where (p.Premium_Payment_Amount > query2()));
END //
DELIMITER ;
call cust_details_query_2();
Filter Rows:
Export:
Wrap Cell Content:
Cust_Id Cust_FNa Cust_LN Cust_DOB Cust_ Cust_Address Cust_MOB_Number Cust_Email Cust_Passport_Number Cust_Marital_Status Cust_PPS_Number
80104 Bhargava H.S 1998-12-12 M New Delhi 8875456264 18bcs018@iiitdwd.ac.in 4565855855 Single 804
80112 Kapil Dev 1997-10-23 M Kolkata 6520012301 kapildev@gmail.com 7776758364 Divorced 812
Result Grid
Form Editor
Result 2
Read Only
Query Completed


Activities
MySQL Workbench
Nov 28 6:01 PM
MySQL Workbench
CAR_INSURANCE
File Edit View Query Database Server Tools Scripting Help
Final_Car_Insurance
Car_Insurance_views*
Car_Insurance_results
car_insurance_procedures
query
Limit to 50000 rows
-- query4
create view query_4 as
select *
from T8_CUSTOMER
where Cust_id in (
select Cust_id
from T8_INCIDENT_REPORT
where Cust_id in (
select Cust_id
from T8_VEHICLE
group by Cust_id
having count(Cust_id) > 1) and Cust_id not in (select Cust_id from T8_PREMIUM_PAYMENT));
select * from query_4;
Filter Rows:
Export:
Wrap Cell Content:
Cust_Id Cust_FName Cust_LName Cust_DOB Cust_Gender Cust_Address Cust_MOB_Number Cust_Email Cust_Passport_Numb Cust_Marital_Statu Cust_PPS_Numbe
80120 Yuvraj Singh 1985-07-23 M Mumbai 8854623569 yuvrajsingh@gmail.com 4574562585 Divorced 820
Result Grid
Form Editor
Field Types
Query Stats
Execution Plan
query_4 1
Read Only
Query Completed