DATABASE DESIGN FOR A VEHICLE INSURANCE COMPANY

CS301 , DBMS - V SEMESTER.

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Project title : A database for a Vehicle Insurance Company

Project Queries

Query 1 :

Retrieve customer and vehicle details who has been involved in an incident and claim status is pending.

Query : select distinct T1.T7_Cust_Id,concat(T1.T7_Cust_FName,T1.T7_Cust_LName) as T7_Cust_Name,T1.T7_Cust_MOB_Number,T2.T7_Vehicle_Id,T2.T7_Vehicle_Registration_Number,T2.T7_Vehicle_Manufacturer,T2.T7_Vehicle_Model_Number from T7_CUSTOMER as T1 INNER JOIN T7_VEHICLE as T2 on T2.T7_Cust_id = T1.T7_Cust_Id where T2.T7_Vehicle_Id not in (select T7_Vehicle_Id from T7_CLAIM_SETTLEMENT) and T1.T7_Cust_Id = ANY (select T7_Cust_Id from T7_CLAIM where T7_Incident_Id is not null);

Result :

```
6  select distinct T1.T7_Cust_Id,concat(T1.T7_Cust_FName,T1.T7_Cust_LName) as T7_Cust_Name,T1.T7_Cust_MOB_Number,
7     T2.T7_Vehicle_Id,T2.T7_Vehicle_Registration_Number,T2.T7_Vehicle_Manufacturer,T2.T7_Vehicle_Model_Number from T7_CUSTOMER
8     as T1 INNER JOIN T7_VEHICLE as T2 on T2.T7_Cust_id = T1.T7_Cust_Id where T2.T7_Vehicle_Id not in
9     (select T7_Vehicle_Id from T7_CLAIM_SETTLEMENT) and  T1.T7_Cust_Id = ANY (select T7_Cust_Id from T7_CLAIM
10    where T7_Incident_Id is not null);
11
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

T7_Cust_Id	T7_Cust_Name	T7_Cust_MOB_Number	T7_Vehicle_Id	T7_Vehicle_Registration_Number	T7_Vehicle_Manufacturer	T7_Vehicle_Model_Number
70101	ArunKumar	9000000001	70401	TN 01 AZ 9009	Skoda	RTX-500100
70102	Varun Kumar	8000010001	70403	MH 11 CX 7227	Tata	CD5433100
70102	Varun Kumar	8000010001	70405	MH 02 EV 5445	Maruti	GH848500
70103	Nidhi Agarwal	9000000002	70406	TS 29 FU 4554	Honda	IJ430100
70104	Sharukh Khan	8307468394	70408	TN 10 HS 2772	Activa	KL503452
70105	ShilpaShetty	9000000003	70410	DL 41 JQ 0990	BMW	MN450100
70111	Virat Kohli	9000000006	70418	TS 14 HI 7777	Skoda	UV430100

Query 2 :

Retrieve customer details who has premium payment amount greater than the sum of all customer ids in the database.

Query : select * from T7_CUSTOMER where T7_CUSTOMER.T7_Cust_Id in (select T7_Cust_Id from T7_PREMIUM_PAYMENT where T7_PREMIUM_PAYMENT.T7_Premium_Payment_Amount > (select sum(T7_Cust_Id) from T7_CUSTOMER));

Result :

```
13    -- query2
14    /* retrieve customer details who has premium payment amount greater than the sum of all customer ids in the database */
15    select * from T7_CUSTOMER where T7_CUSTOMER.T7_Cust_Id in ( select T7_Cust_Id from T7_PREMIUM_PAYMENT where
16          T7_PREMIUM_PAYMENT.T7_Premium_Payment_Amount > (select sum(T7_Cust_Id) from T7_CUSTOMER));
17
18
19    -- query3
20    /*retrieve company details whose number of products is greater than the departments, where the departments are located
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

T7_CUST_Id	T7_CUST_FName	T7_CUST_LName	T7_CUST_DOB	T7_CUST_Gender	T7_CUST_Address	T7_CUST_MOB_Number	T7_CUST_Email	T7_CUST_Passport_Number	T7_CUST_
70101	Arun	Kumar	1999-10-24	M	Chennai	9000000001	1@gmail.com	7X101	Single
70106	Rhea	Chakraborty	1998-05-07	F	Banglore	8005010001	6@gmail.com	7X106	Divorced
70107	Aamir	Khan	1997-06-08	M	Mumbai	9000000004	7@gmail.com	NULL	Single
70110	Anushka	Sharma	1994-09-27	F	Mumbai	8009010001	10@gmail.com	7X110	Married
70111	Virat	Kohli	1993-10-09	M	Hyderabad	9000000006	11@gmail.com	NULL	Single
70115	Nagarjuna	Akkineni	1991-03-30	M	Banglore	9000001008	15@gmail.com	7X115	Divorced
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Query 3 :

Retrieve company details whose number of products is greater than the departments, where the departments are located in more than one location.

Query : select * from T7_INSURANCE_COMPANY where T7_Company_Name in (select T7_Company_Name from T7_OFFICE group by T7_Company_Name having T7_Company_Name in (select T7_OFFICE.T7_Company_Name from T7_PRODUCT inner join T7_OFFICE on T7_OFFICE.T7_Company_Name=T7_PRODUCT.T7_Company_Name group by T7_OFFICE.T7_Company_Name having Count(distinct(T7_Product_Number))>Count(distinct(T7_Office_Name))) and count(distinct T7_Address)>1);

Result :

```
19    -- query3
20    /*retrieve company details whose number of products is greater than the departments, where the departments are located
21    in more than one location */
22    select * from T7_INSURANCE_COMPANY where T7_Company_Name in (select T7_Company_Name from T7_OFFICE group by T7_Company_Name
23       having T7_Company_Name in (select T7_OFFICE.T7_Company_Name from T7_PRODUCT inner join T7_OFFICE on
24       T7_OFFICE.T7_Company_Name=T7_PRODUCT.T7_Company_Name group by T7_OFFICE.T7_Company_Name having
25       Count(distinct(T7_Product_Number))>Count(distinct(T7_Office_Name))) and count(distinct T7_Address)>1 );
26
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

T7_Company_Name	T7_Company_Address	T7_Company_Contact_Number	T7_Company_Fax	T7_Company_Email	T7_Company_Website	T7_Company_Location
ABC ltd	HNo 17,LB Nagar,Hyderabad	1100272272	206026789	abc@gmail.com	https://www.abc.com	Hyderabad
CDE ltd	Hno 02, Patel Nagar, Delhi	1100264977	810823774664	cde@gmail.com	https://www.cde.com	Delhi
DEF ltd	Hno 12 , Shivaji Road,Mumbai	1160267766	8872456139	def@gmail.com	https://www.def.com	Mumbai
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Query 4 :

Select customers who have more than one vehicle , where the premium for one of the vehicles is not paid and it is involved in accident.

Query : select * from T7_CUSTOMER where T7_CUSTOMER.T7_Cust_id in (select T7_Cust_Id from T7_VEHICLE where T7_VEHICLE.T7_Policy_Number not in (select T7_Policy_Number from T7_PREMIUM_PAYMENT) and T7_VEHICLE.T7_Cust_Id in (select T7_Cust_Id from T7_VEHICLE GROUP BY T7_VEHICLE.T7_Cust_Id having count(T7_VEHICLE.T7_Cust_Id) > 1) and T7_VEHICLE.T7_Cust_Id in (select T7_Cust_Id from T7_INCIDENT_REPORT where T7_Incident_Type = 'Accident'));

Result :

```
27
28      -- query4
29      /*select customers who have more than one vehicle , where the premium for one of the vehicles is not paid and it is involved in accident*/
30 •    select * from T7_CUSTOMER where T7_CUSTOMER.T7_Cust_id in (select T7_Cust_Id from T7_VEHICLE where
31          T7_VEHICLE.T7_Policy_Number not in (select T7_Policy_Number from T7_PREMIUM_PAYMENT) and T7_VEHICLE.T7_Cust_Id in
32          (select T7_Cust_Id from T7_VEHICLE GROUP BY T7_VEHICLE.T7_Cust_Id having count(T7_VEHICLE.T7_Cust_Id) > 1) and
33          T7_VEHICLE.T7_Cust_Id in (select T7_Cust_Id from T7_INCIDENT_REPORT where T7_Incident_Type = 'Accident'));
34
```

esult Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

T7_CUST_Id	T7_CUST_FName	T7_CUST_LName	T7_CUST_DOB	T7_CUST_Gender	T7_CUST_Address	T7_CUST_MOB_Number	T7_CUST_Email	T7_CUST_Passport_Number	T7_CUST_
70103	Nidhi	Agarwal	1997-05-02	F	Hyderabad	9000000002	3@gmail.com	NULL	Divorced
70104	Sharukh	Khan	1998-07-13	M	Chennai	8307468394	4@gmail.com	7X104	Single
70115	Nagarjuna	Akkineni	1991-03-30	M	Banglore	9000001008	15@gmail.com	7X115	Divorced
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Query 5 :

Select all vehicles which have premium more than its vehicle number.

Query : select * from T7_VEHICLE where T7_VEHICLE.T7_Vehicle_Number < (select T7_Premium_Payment_Amount from T7_PREMIUM_PAYMENT where T7_Vehicle.T7_Policy_number=T7_Premium_Payment.T7_Policy_number);

Result :

```
37
38      -- query5
39      /* select all vehicles which have premium more than its vehicle number */
40 •    select * from T7_VEHICLE where T7_VEHICLE.T7_Vehicle_Number < (select T7_Premium_Payment_Amount from T7_PREMIUM_PAYMENT
41          where T7_Vehicle.T7_Policy_number=T7_Premium_Payment.T7_Policy_number);
42
```

Limit to 1000 rows

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

T7_Vehicle_Id	T7_Policy_Number	T7_Vehicle_Registration_Number	T7_Vehicle_Value	T7_Vehicle_Type	T7_Vehicle_Size	T7_Vehicle_Number_Of_Seat	T7_Vehicle_Manufacturer	T7_Vehic
70401	700001	TN 01 AZ 9009	200000	4 wheeler	14	4	Skoda	51701
70402	700002	TN 09 BY 8118	500000	4 wheeler	15	8	Suzuki	70425
70411	700011	KA 35 KP 0000	2500000	4 wheeler	26	8	Audi	70434
70412	700012	MH 27 LO 1111	1600000	4 wheeler	19	6	Audi	70435
70416	700016	MH 07 EF 5555	700000	4 wheeler	19	5	Ford	70439
70417	700017	MH 34 GH 6666	810000	4 wheeler	12	4	Volkswagon	70440
70418	700018	TS 14 HI 7777	920000	4 wheeler	15	6	Skoda	70441
70421	700021	MH 02 LM 9998	75000	2 wheeler	19	4	Maestro	70444
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types | Query Stats

Query 6 :

Retrieve customer details whose claim amount is less than coverage amount and claim amount is greater than sum of Claim_settlement_id , vehicle_id, claim_id, cust_id .

Query :

select * from T7_CUSTOMER where T7_CUSTOMER.T7_Cust_Id in (select T7_Cust_Id from T7_CLAIM where T7_CLAIM.T7_Claim_Amount < (select T7_COVERAGE.T7_Coverage_Amount from T7_COVERAGE where T7_CLAIM.T7_Agreement_id in (select T7_INSURANCE_POLICY_COVERAGE.T7_Agreement_id from T7_INSURANCE_POLICY_COVERAGE where

T7_INSURANCE_POLICY_COVERAGE.T7_Coverage_Id = T7_COVERAGE.T7_Coverage_Id)) and

T7_CLAIM.T7_Claim_Amount > (select T7_Claim_Settlement_Id+T7_Claim_Id+T7_Vehicle_Id+T7_Cust_Id from T7_CLAIM_SETTLEMENT where T7_CLAIM_SETTLEMENT.T7_Claim_id = T7_CLAIM.T7_Claim_Id));

Result :

```
45    -- query6
46    /*retreive customer details whose claim amount is less than coverage amount and claim amount is greater than
47    sum of (Claim_settlement_id,vehicle_id,claim_id,cust_id) */
48
49    select * from T7_CUSTOMER where T7_CUSTOMER.T7_Cust_Id in (select T7_Cust_Id from T7_CLAIM where
50        T7_CLAIM.T7_Claim_Amount < (select T7_COVERAGE.T7_Coverage_Amount from T7_COVERAGE where T7_CLAIM.T7_Agreement_id in
51        (select T7_INSURANCE_POLICY_COVERAGE.T7_Agreement_id from T7_INSURANCE_POLICY_COVERAGE where
52        T7_INSURANCE_POLICY_COVERAGE.T7_Coverage_Id = T7_COVERAGE.T7_Coverage_Id))  and
53        T7_CLAIM.T7_Claim_Amount > (select T7_Claim_Settlement_Id+T7_Claim_Id+T7_Vehicle_Id+T7_Cust_Id
54        from T7_CLAIM_SETTLEMENT where T7_CLAIM_SETTLEMENT.T7_Claim_id = T7_CLAIM.T7_Claim_Id));
55
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

T7_CUST_Id	T7_CUST_FName	T7_CUST_LName	T7_CUST_DOB	T7_CUST_Gender	T7_CUST_Address	T7_CUST_MOB_Number	T7_CUST_Email	T7_CUST_Passport_Number	T7_CUST_
70101	Arun	Kumar	1999-10-24	M	Chennai	9000000001	1@gmail.com	7X101	Single
70103	Nidhi	Agarwal	1997-05-02	F	Hyderabad	9000000002	3@gmail.com	NULL	Divorced
70109	Kareena	Kapoor	1995-08-21	F	Banglore	9000000005	9@gmail.com	NULL	Single
70110	Anushka	Sharma	1994-09-27	F	Mumbai	8009010001	10@gmail.com	7X110	Married
70113	Himanshu	Singh	1993-12-03	M	Hyderabad	9000000007	13@gmail.com	7X113	Single
70115	Nagarjuna	Akkineni	1991-03-30	M	Banglore	9000001008	15@gmail.com	7X115	Divorced
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Extra Queries

1.Case Statements :

Order Male Customers by Customer_Id and Female Customers by Date of Birth.

Query :

select T7_Cust_id,concat(T7_CUST_FName , T7_CUST_LName) as T7_Cust_Name,T7_CUST_Gender,T7_CUST_DOB from T7_CUSTOMER order by

(CASE when T7_CUST_Gender = 'M' then T7_Cust_Id

when T7_CUST_Gender = 'F' then T7_CUST_DOB

END);

Result :

```
30  select T7_Cust_id,concat(T7_CUST_FName , T7_CUST_LName) as T7_Cust_Name,T7_CUST_Gender,T7_CUST_DOB from T7_CUSTOMER order by
31  ( CASE when T7_CUST_Gender = 'M' then T7_Cust_Id
32        when T7_CUST_Gender = 'F' then T7_CUST_DOB
33        END);
34
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

T7_Cust_id	T7_Cust_Name	T7_CUST_Gender	T7_CUST_DOB
70110	Anushka Sharma	F	1994-09-27
70109	Kareena Kapoor	F	1995-08-21
70103	Nidhi Agarwal	F	1997-05-02
70106	Rhea Chakraborty	F	1998-05-07
70105	ShilpaShetty	F	1999-02-20
70101	ArunKumar	M	1999-10-24
70102	Varun Kumar	M	1999-07-25
70104	Sharukh Khan	M	1998-07-13
70107	Aamir Khan	M	1997-06-08
70108	Ayushmann Khurana	M	1996-07-06
70111	Virat Kohli	M	1993-10-09
70112	Rohit Sharma	M	1992-11-01
70113	Himanshu Singh	M	1993-12-03
70114	Abhijeet Patel	M	1991-12-31
70115	Nagarjuna Akkineni	M	1991-03-30

2.Stored Procedures :

A stored procedure to select data from customers based on their Marital Status.

Code :

```
create procedure selectcustomersonmaritalstatus(M_Status varchar(20))
BEGIN
select * from T7_CUSTOMER where T7_CUST_Marital_Status = M_Status;
END //
```

Result : call selectcustomersonmaritalstatus('Married');

```
107  -- stored procedure having parameters
108  DELIMITER //
109  create procedure selectcustomersonmaritalstatus(M_Status varchar(20))
110  BEGIN
111  select * from T7_CUSTOMER where T7_CUST_Marital_Status = M_Status;
112  END //
113  DELIMITER ;
114
115  /* customer details based on Marital Status */
116  call selectcustomersonmaritalstatus('Married');
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

T7_CUST_Id	T7_CUST_FName	T7_CUST_LName	T7_CUST_DOB	T7_CUST_Gender	T7_CUST_Address	T7_CUST_MOB_Number	T7_CUST_Email	T7_CUST_Passport_Number	T7_CUST_
70102	Varun	Kumar	1999-07-25	M	Mumbai	8000010001	2@gmail.com	7X102	Married
70105	Shilpa	Shetty	1999-02-20	F	Delhi	9000000003	5@gmail.com	NULL	Married
70108	Ayushmann	Khurana	1996-07-06	M	Hyderabad	9007568394	8@gmail.com	7X108	Married
70110	Anushka	Sharma	1994-09-27	F	Mumbai	8009010001	10@gmail.com	7X110	Married
70114	Abhijeet	Patel	1991-12-31	M	Delhi	8000010781	14@gmail.com	7X114	Married

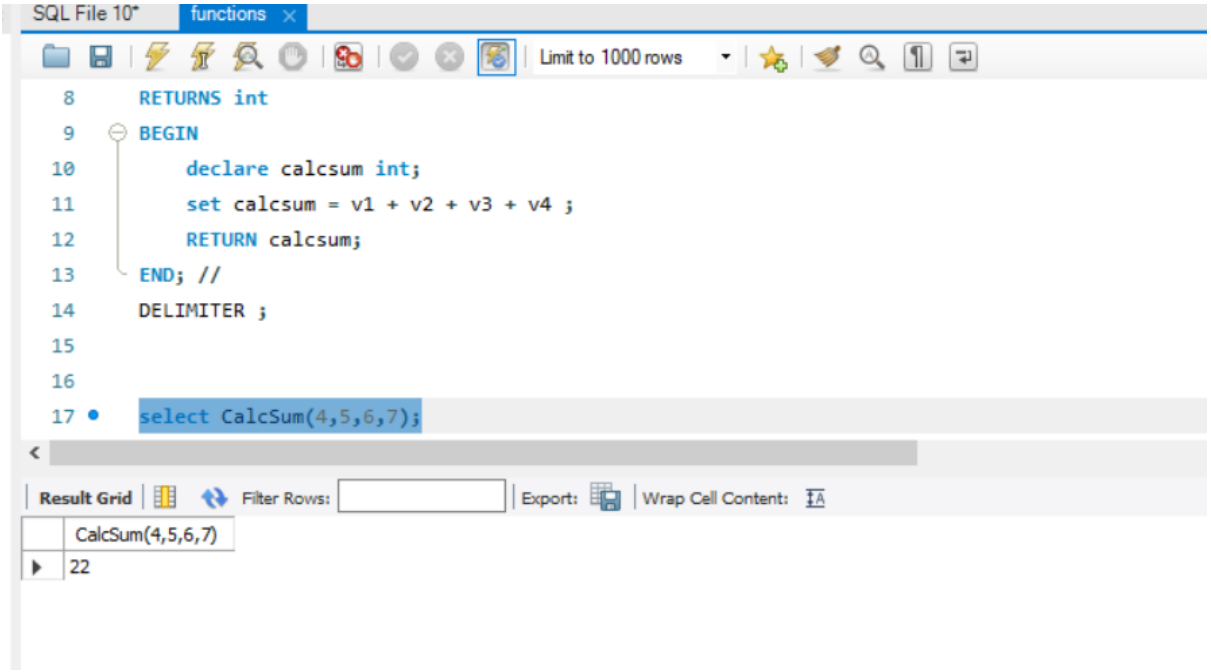
3. Functions :

A function to calculate sum of 4 integers.

Code :

```
create function CalcSum(v1 int,v2 int,v3 int,v4 int)
RETURNS int
BEGIN
    declare calcsum int;
  set calcsum = v1 + v2 + v3 + v4 ;
  RETURN calcsum;
END;
```

Result : CalcSum(4,5,6,7)



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4. Views :

A view that selects all the vehicles from a state using regex.(Ex :Maharashtra)

Code :

```
create view Maharashtra_Vehicles as select
T7_Vehicle_Id,T7_Vehicle_Registration_Number,T7_Vehicle_Type,T7_Vehicle_Manufacturer,T7_
Vehicle_Engine_Number,T7_Cust_Id from T7_VEHICLE where T7_Vehicle_Registration_Number
like 'MH%' ;
```

Result :

```
33    -- ____________________________________________________________________________
34
35    /* a view that selects all the vehicles from Maharshtra using regex*/
36    create view Maharashtra_Vehicles as select T7_Vehicle_Id,T7_Vehicle_Registration_Number,T7_Vehicle_Type,
37        T7_Vehicle_Manufacturer,T7_Vehicle_Engine_Number,T7_Cust_Id from T7_VEHICLE where T7_Vehicle_Registration_Number like 'MH%' ;
38
39    select * from T7_VEHICLE;
40    select * from Maharashtra_Vehicles;
41
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

T7_Vehicle_Id	T7_Vehicle_Registration_Number	T7_Vehicle_Type	T7_Vehicle_Manufacturer	T7_Vehicle_Engine_Number	T7_Cust_Id
70405	MH 02 EV 5445	4 wheeler	Maruti	70428	70102
70421	MH 02 LM 9998	2 wheeler	Maestro	70444	70115
70422	MH 03 LM 9998	4 wheeler	Innova	70445	70113
70416	MH 07 EF 5555	4 wheeler	Ford	70439	70110
70403	MH 11 CX 7227	4 wheeler	Tata	70426	70102
70420	MH 12 LM 9999	4 wheeler	BMW	70443	70115
70412	MH 27 LO 1111	4 wheeler	Audi	70435	70107
70417	MH 34 GH 6666	4 wheeler	Volkswagon	70440	70110
70404	MH 35 DW 6336	4 wheeler	Benz	70427	70102
