



भारतीय सूचना प्रौद्योगिकी संस्थान धारवाड़  
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY DHARWAD

# DATABASE MANAGEMENT SYSTEM (CS310)

Report on  
Database design on Car vehicle insurance  
company

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**GITHUB REPOSITORY LINK :**

[https://github.com/vedant-jad99/DBMS\\_Group\\_Project](https://github.com/vedant-jad99/DBMS_Group_Project)

**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.

**ASSUMPTION:**

- The Foreign Key of office table (table 18) has been changed to (Department\_Name,Department\_ID,Company\_Name) Referencing the Primary Key of the Department Table(table 5).
- The Foreign Key of Department Table (table 5) has been changed to (Company\_Name) referencing the Primary Key of Insurance\_Company Table

**QUERY 1**

Retrieve Customer and Vehicle details who has been involved in an incident and claim status is pending

**SELECT**

\*

**FROM**

T5\_Customer,

T5\_Vehicle

**WHERE**

T5\_Customer.cust\_id = T5\_Vehicle.cust\_id

AND T5\_Customer.cust\_id IN (SELECT DISTINCT  
C.Cust\_Id

FROM

T5\_CLAIM C,

**T5\_INCIDENT\_REPORT IR**  
**WHERE**  
**C.Claim\_Status = 'pending'**  
**AND C.Cust\_Id = IR.Cust\_Id);**

```

22  -- query 1
23  •  SELECT
24      *
25  FROM
26      T5_Customer,
27      T5_Vehicle
28  WHERE
29      T5_Customer.cust_id = T5_Vehicle.cust_id
30      AND T5_Customer.cust_id IN (SELECT DISTINCT
31          C.Cust_Id
32      FROM
33          T5_CLAIM C,
34          T5_INCIDENT_REPORT IR
35      WHERE
36          C.Claim_Status = 'pending'
37          AND C.Cust_Id = IR.Cust_Id);

```

CUST_Id	CUST_FName	CUST_LName	CUST_DOB	CUST_Gender	CUST_Address	CUST_MOB_Number	CUST_Email	CUST_Passport_Number	CUST_Marital_Status	CUST_PPS_Number	Vehicle_Id	Policy
50212	Ronita	Chatterjee	1997-10-23	F	Kolkata	6607568394	18bcs0843@itdwd.ac.in	6696758364	Divorced	23	50708	55545
50217	Jayakanat	Kamble	2000-07-23	M	Pune	1107568394	18bcs0342182@itdwd.ac.in	7126758364	Divorced	20	50716	97961
50205	Ashish	Chancha	1999-04-23	M	Banglore	4007568394	18bcs081@itdwd.ac.in	7666658364	Divorced	21	50703	29898
50216	Jayakanat	Kamble	1999-10-23	M	Lucknow	2207568394	18bcs08s423@itdwd.ac.in	7196758364	Single	21	50709	54851

Continued..

Policy_Id	Vehicle_Registration_Number	Vehicle_Value	Vehicle_Type	Vehicle_Size	Vehicle_Number_Of_Seat	Vehicle_Manufacturer	Vehicle_Engine_Number	Vehicle_Chassis_Number	Vehicle_Number	Vehicle_Model_Number	C
5554515	KA 10 HS 2772	759999	4 wheeler	15	4	Skoda	51708	52708	991171	RTX-503452	5C
9796133	MH 07 EF 5555	1700000	4 wheeler	19	5	Ford	51716	52716	999901	RTX-2340100	5C
2989893	MH 11 CX 7227	750000	4 wheeler	13	4	TATA	51703	52703	320901	RTX-589900	5C
5485110	MH 17 IR 1881	920000	4 wheeler	15	4	Tata	51709	52709	2990101	RTX-340100	5C

## QUERY 2

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

**SELECT**  
**\***  
**FROM**  
**T5\_Customer**  
**WHERE**  
**cust\_id IN (SELECT**  
**Cust\_id**  
**FROM**

**T5\_Premium\_Payment**  
**WHERE**  
**Premium\_Payment\_Amount > (SELECT**  
**SUM(cust\_id)**  
**FROM**  
**T5\_Customer));**

```

39  -- query 2
40  •  SELECT
41      *
42  FROM
43      T5_Customer
44  WHERE
45      cust_id IN (SELECT
46          Cust_id
47      FROM
48          T5_Premium_Payment
49      WHERE
50          Premium_Payment_Amount > (SELECT
51              SUM(cust_id)
52          FROM
53              T5_Customer));

```

CUST_Id	CUST_FName	CUST_LName	CUST_DOB	CUST_Gender	CUST_Address	CUST_MOB_Number	CUST_Email	CUST_Passport_Number	CUST_Marital_Status	CUST_PPS_Number
50202	Yashdeep	Shetty	1999-12-04	M	Mumbai	9696969696	18bcs092@iitdwd.ac.in	6583947362	Married	21
50210	Rutuja	shah	1998-09-23	F	Banglore	9907568394	18bcs074@iitdwd.ac.in	7496658364	Divorced	22
50214	Jayesh	Patel	1999-12-23	M	Banglore	4407568394	18bcs041@iitdwd.ac.in	7496765364	Divorced	21
50219	Ronit	jay	1967-07-23	M	Lucknow	1107568394	18bcs084322@iitdwd.ac.in	7496458364	Married	53

### QUERY 3

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

**SELECT \***  
**FROM**  
**T5\_Insurance\_Company**  
**WHERE**  
**Company\_Name IN (SELECT**  
**T5\_Office.Company\_Name**  
**FROM**  
**T5\_Office**  
**GROUP BY Company\_Name**  
**HAVING COUNT(DISTINCT (address)) > 1**  
**AND Company\_Name IN (SELECT**  
**T5\_Department.Company\_Name**

```

FROM
    T5_Product
    INNER JOIN
        T5_Department ON T5_Department.Company_Name =
T5_Product.Company_Name
    GROUP BY T5_Department.Company_Name
    HAVING COUNT(DISTINCT (Product_Type)) > COUNT(DISTINCT
(Department_Name)))));

```

```

15  -- query 3 |
16  SELECT *
17  FROM
18  T5_Insurance_Company
19  WHERE
20  Company_Name IN (SELECT
21  T5_Office.Company_Name
22  FROM
23  T5_Office
24  GROUP BY Company_Name
25  HAVING COUNT(DISTINCT (address)) > 1
26  AND Company_Name IN (SELECT
27  T5_Department.Company_Name
28  FROM
29  T5_Product
30  INNER JOIN
31  T5_Department ON T5_Department.Company_Name = T5_Product.Company_Name
32  GROUP BY T5_Department.Company_Name
33  HAVING COUNT(DISTINCT (Product_Type)) > COUNT(DISTINCT (Department_Name)))));

```

Company_Name	Company_Address	Company_Contact_Number	Company_Fax	Company_Email	Company_Website	Company_Location	Company_Department_Name	Company_...
SBI Vehicle Insurance Company Limited	SBI Vehicle Corporate Solutions. 7th ...	180571584020	5565871687	sbVehicle@help.com	sbVehicle.com	Mumbai	sbVehicleoffice	sbVehicleof

## 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

```

SELECT
    *
FROM
    T5_Customer
WHERE
    cust_id IN (SELECT
        cust_id

```

```

FROM
    T5_incident_report
WHERE
    cust_id IN (SELECT
        cust_id
    FROM
        T5_Vehicle
    GROUP BY cust_id
    HAVING COUNT(*) > 1));

```

```

95  -- query 4
96  SELECT
97  *
98  FROM
99  T5_Customer
100 WHERE
101 cust_id IN (SELECT
102 cust_id
103 FROM
104 T5_incident_report
105 WHERE
106 cust_id IN (SELECT
107 cust_id
108 FROM
109 T5_Vehicle
110 GROUP BY cust_id
111 HAVING COUNT(*) > 1));
112 -- query 5

```

CUST_Id	CUST_FName	CUST_LName	CUST_DOB	CUST_Gender	CUST_Address	CUST_MOB_Number	CUST_Email	CUST_Passport_Number	CUST_Marital_Status	CUST_PPS_Number
50208	Ramesh	Athe	1999-07-23	M	Banglore	9007568394	18bcs072@itdwd.ac.in	7496756564	Divorced	21
50210	Rutuja	shah	1998-09-23	F	Banglore	9907568394	18bcs074@itdwd.ac.in	7496658364	Divorced	22
50211	Rukhsana	khan	1999-07-23	F	Hyderabad	7707568394	18bcs045@itdwd.ac.in	6696658364	Single	21
50215	Jayakanat	Kamble	1999-07-23	M	Banglore	3307568394	18bcs0843@itdwd.ac.in	7396758364	Divorced	21

## ALTERNATIVELY

**ASSUMPTION:** If a customer\_id is present in the premium\_payment table, it means they have paid their premium.

```

SELECT
    *
FROM
    t5_customer
WHERE
    Cust_id IN (SELECT
        t1.Cust_Id

```

```

FROM
    t5_vehicle AS t1
    INNER JOIN
    t5_incident_report AS t2 ON t1.Cust_Id = t2.Cust_Id
    LEFT JOIN
    t5_premium_payment AS t3 ON t2.Cust_Id = t3.Cust_Id
WHERE
    t3.Cust_Id IS NULL
GROUP BY t1.Cust_Id
HAVING COUNT(t1.Vehicle_Id) > 1);

```

```

51  -- query 4
52  • SELECT
53      *
54  FROM
55      t5_customer
56  WHERE
57      Cust_id IN (SELECT
58          t1.Cust_Id
59      FROM
60          t5_vehicle AS t1
61          INNER JOIN
62          t5_incident_report AS t2 ON t1.Cust_Id = t2.Cust_Id
63          LEFT JOIN
64          t5_premium_payment AS t3 ON t2.Cust_Id = t3.Cust_Id
65      WHERE
66          t3.Cust_Id IS NULL
67      GROUP BY t1.Cust_Id
68      HAVING COUNT(t1.Vehicle_Id) > 1);

```

CUST_Id	CUST_FName	CUST_LName	CUST_DOB	CUST_Gender	CUST_Address	CUST_MOB_Number	CUST_Email	CUST_Passport_Number	CUST_Marital_Status	CUST_PPS_Number
50208	Ramesh	Athe	1999-07-23	M	Banglore	9007568394	18bcs072@itdwd.ac.in	7496756564	Divorced	21

OR

```

SELECT
    *
FROM
    T5_Customer
WHERE
    cust_id NOT IN (SELECT
        cust_id
    FROM
        T5_Premium_Payment)

```

```

AND cust_id IN (SELECT
    cust_id
FROM
    T5_incident_report
WHERE
    cust_id IN (SELECT
        cust_id
FROM
    T5_Vehicle
GROUP BY cust_id
HAVING COUNT(*) > 1));

```

70 • SELECT  
71 \*  
72 FROM  
73 T5\_Customer  
74 WHERE  
75 cust\_id NOT IN (SELECT  
76 cust\_id  
77 FROM  
78 T5\_Premium\_Payment)  
79 AND cust\_id IN (SELECT  
80 cust\_id  
81 FROM  
82 T5\_incident\_report  
83 WHERE  
84 cust\_id IN (SELECT  
85 cust\_id  
86 FROM  
87 T5\_Vehicle  
88 GROUP BY cust\_id  
89 HAVING COUNT(\*) > 1));

CUST_Id	CUST_FName	CUST_LName	CUST_DOB	CUST_Gender	CUST_Address	CUST_MOB_Number	CUST_Email	CUST_Passport_Number	CUST_Marital_Status	CUST_PPS_Number
50208	Ramesh	Athe	1999-07-23	M	Banglore	9007568394	18bcs072@itdwd.ac.in	7496756564	Divorced	21

NOTE: For the purposes of showing output of the above queries, one customer\_id was deleted from premium\_payment table to show they have not paid their premium.

## QUERY 5

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

(SELECT

\*

FROM



**T5\_Vehicle AS V,**  
**T5\_Premium\_Payment AS PP**  
**WHERE**  
**V.cust\_id = PP.cust\_id**  
**AND PP.Premium\_Payment\_Amount > V.Vehicle\_Number);**

```

112  -- query 5
113  (SELECT
114  *
115  FROM
116  T5_Vehicle AS V,
117  T5_Premium_Payment AS PP
118  WHERE
119  V.cust_id = PP.cust_id
120  AND PP.Premium_Payment_Amount > V.Vehicle_Number);
121

```

Vehicle_Id	Policy_Id	Vehicle_Registration_Number	Vehicle_Value	Vehicle_Type	Vehicle_Size	Vehicle_Number_Of_Seat	Vehicle_Manufacturer	Vehicle_Engine_Number	Vehicle_Chassis_Number	Vehicle_Number	Vehicle_Model_Nu
50703	2989893	MH 11 CX 7227	750000	4 wheeler	13	4	TATA	51703	52703	320901	RTX-589900
50704	3203290	MH 35 DW 6336	1200000	4 wheeler	19	6	Mercedes	51704	52704	549101	RTX-487100
50705	7609208	GA 02 EV 5445	1690000	4 wheeler	25	8	Mahindra	51705	52705	994100	RTX-848500
50712	1787318	MP 27 LO 1111	1699990	4 wheeler	19	6	Skoda	51712	52712	998641	RTX-3450100
50715	3547518	KA 11 CD 4444	1100000	4 wheeler	15	4	Ford	51715	52715	978101	RTX-5002300
50717	5454545	MH 34 GH 6666	800000	4 wheeler	12	4	Volkswagon	51717	52717	279101	RTX-000100
50718	3434329	HP 14 HI 7777	900000	4 wheeler	15	4	Skoda	51718	52718	191877	RTX-430100
50720	7846844	MH 12 LM 9999	1200000	4 wheeler	19	6	BMW	51720	52720	485631	RTX-940100

Continued..

Manufacturer	Vehicle_Engine_Number	Vehicle_Chassis_Number	Vehicle_Number	Vehicle_Model_Number	Cust_Id	Premium_Payment_Id	Policy_Number	Premium_Payment_Amount	Premium_Payment_Schedule	Receipt_Id	Cust_Id
	51703	52703	320901	RTX-589900	50205	50805	3434235	520000	2018-04-13	50905	50205
	51704	52704	549101	RTX-487100	50202	50802	34423423	5200000	2019-11-20	50902	50202
	51705	52705	994100	RTX-848500	50210	50810	534324	2800000	2019-01-23	50910	50210
	51712	52712	998641	RTX-3450100	50219	50819	8547546	3800000	2019-02-19	50919	50219
	51715	52715	978101	RTX-5002300	50214	50814	6547554	4000000	2019-10-09	50914	50214
	51717	52717	279101	RTX-000100	50215	50815	84567546	350000	2018-05-02	50915	50215
	51718	52718	191877	RTX-430100	50203	50803	342355325	520000	2018-02-25	50903	50203
	51720	52720	485631	RTX-940100	50210	50810	534324	2800000	2019-01-23	50910	50210

## 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 )

**SELECT**  
  
**\***  
  
**FROM**  
**T5\_Customer**  
**WHERE**

```

cust_id IN (SELECT DISTINCT
            (T5_Claim.cust_id)
FROM
            T5_Claim,
            T5_Claim_Settlement,
            T5_Coverage
WHERE
            claim_amount > claim_settlement_id + vehicle_id + T5_Claim.claim_id
+ T5_Claim.cust_id
            AND claim_amount < coverage_amount);

```

```

123  -- query 6
124  •   SELECT
125      *
126  FROM
127      T5_Customer
128  WHERE
129      cust_id IN (SELECT DISTINCT
130                  (T5_Claim.cust_id)
131                FROM
132                  T5_Claim,
133                  T5_Claim_Settlement,
134                  T5_Coverage
135                WHERE
136                  claim_amount > claim_settlement_id + vehicle_id + T5_Claim.claim_id + T5_Claim.cust_id
137                  AND claim_amount < coverage_amount);

```

CUST_Id	CUST_FName	CUST_LName	CUST_DOB	CUST_Gender	CUST_Address	CUST_MOB_Number	CUST_Email	CUST_Passport_Number	CUST_Marital_Status	CUST_PPS_Number
50202	Yashdeep	Shetty	1999-12-04	M	Mumbai	9696969696	18bcs092@itdwd.ac.in	6583947362	Married	21
50208	Ramesh	Athe	1999-07-23	M	Banglore	9007568394	18bcs072@itdwd.ac.in	7496756564	Divorced	21
50214	Jayesh	Patel	1999-12-23	M	Banglore	4407568394	18bcs041@itdwd.ac.in	7496765364	Divorced	21
50216	Jayakanat	Kamble	1999-10-23	M	Lucknow	2207568394	18bcs08s423@itdwd.ac.in	7196758364	Single	21
50217	Jayakanat	Kamble	2000-07-23	M	Pune	1107568394	18bcs0342182@itdwd.ac.in	7126758364	Divorced	20
50219	Ronit	Jay	1967-07-23	M	Lucknow	1107568394	18bcs084322@itdwd.ac.in	7496458364	Married	53

## CONTRIBUTION:

**PHASE -1:** Creating tables

**PHASE -2:** Inserting and testing the data and removing insertion, deletion and updation anomalies.

**PHASE -3:** Creating and executing queries and modification of data

Table distribution:

1, 2 - Aakash Tiwari

3, 4 - Saicharan

5, 6 - Shubham Shinde  
7, 13 - Vedant Jadhav  
8, 9 - Tej Arvind Sapram  
10, 14 - Bhavya Tripathi  
11, 12 - Yashdeep Shetty  
15, 22 - Vishal Kotwal  
16, 17 - Rutvik Yamkanmardi  
18, 19 - S Namratha  
20, 21 - Pravalika

Groups for query:

1- Namratha, Aakash  
2-Rutvik,Vedant  
3-Yashdeep  
4-Bhavya, Pravalika  
5-Sigiri, Teja  
6-Vishal, Shinde