Exercises

**Q1. Consider a database LOANS with the following tuples:**



1. Create the table Loans and insert tuples in it.

create table LOANS(AccNoo integer,Cust\_Name varchar(15),Loan\_Amount integer,Insatllment number,int\_Rate decimal(10,2),Start\_Date date,interest integer);

insert into LOANS values(1,'R.k.Gupta',300000,36,12.00,'19-jul-09',1200);

insert into LOANS values(2,'S.P.Gupta',500000,48,10.00,'22-mar-08',1800);

insert into LOANS values(3,'K.P.Jain',300000,36,NULL,'08-mar-07',1600);

insert into LOANS values(4,'M.P.Yadav',800000,60,10.00,'16-dec-08',2250);

insert into LOANS values(5,'S.P.Sinha',200000,36,12.50,'03-jan-10',4500);

insert into LOANS values(6,'P.Sharma',700000,60,12.50,'05-jun-08',3500);

insert into LOANS values(7,'K.S.Dhall',500000,48,NULL,'05-mar-08',3800);

1. Display the details of all the loans.

select \* from LOANS;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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1 R.k.Gupta 300000 36 12 19-JUL-09 1200

2 S.P.Gupta 500000 48 10 22-MAR-08 1800

3 K.P.Jain 300000 36 08-MAR-07 1600

4 M.P.Yadav 800000 60 10 16-DEC-08 2250

5 S.P.Sinha 200000 36 12.5 03-JAN-10 4500

6 P.Sharma 700000 60 12.5 05-JUN-08 3500

7 K.S.Dhall 500000 48 05-MAR-08 3800

3) Display the AccNo, Cust\_Name, and Loan\_Amount of all the loans.

select ACCNOO,Loan\_Amount,Cust\_Name from Loans;

ACCNOO LOAN\_AMOUNT CUST\_NAME

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1 300000 R.k.Gupta

2 500000 S.P.Gupta

3 300000 K.P.Jain

4 800000 M.P.Yadav

5 200000 S.P.Sinha

6 700000 P.Sharma

7 500000 K.S.Dhall

Conditional Select using Where Clause

1. Display the details of all the loans with less than 40 instalments.

select \* from LOANS where Insatllment<40;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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1 R.k.Gupta 300000 36 12 19-JUL-09 1200

3 K.P.Jain 300000 36 08-MAR-07 1600

5 S.P.Sinha 200000 36 12.5 03-JAN-10 4500

1. Display the AccNo and Loan\_Amount of all the loans started before 01-04-2009.

select ACCNOO,Loan\_Amount from LOANS where Start\_Date<'01-apr-09';

ACCNOO LOAN\_AMOUNT

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2 500000

3 300000

4 800000

6 700000

7 500000

1. Display the Int\_Rate of all the loans started after 01-04-2009.

select Int\_Rate from LOANS where Start\_Date>'01-apr-09';

INT\_RATE

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12

12.5

Using NULL

1. Display the details of all the loans whose rate of interest is NULL.

select \* from LOANS where Int\_Rate is NULL;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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3 K.P.Jain 300000 36 08-MAR-07 1600

7 K.S.Dhall 500000 48 05-MAR-08 3800

1. Display the details of all the loans whose rate of interest is not NULL.

select \* from LOANS where Int\_Rate is not NULL;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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1 R.k.Gupta 300000 36 12 19-JUL-09 1200

2 S.P.Gupta 500000 48 10 22-MAR-08 1800

4 M.P.Yadav 800000 60 10 16-DEC-08 2250

5 S.P.Sinha 200000 36 12.5 03-JAN-10 4500

6 P.Sharma 700000 60 12.5 05-JUN-08 3500

Using DISTINCT Clause

1. Display the amounts of various loans from the table LOANS. A loan amount should appear only once.

select distinct(Loan\_Amount) from LOANS;

LOAN\_AMOUNT

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300000

200000

700000

800000

500000

1. Display the number of installments of various loans from the table LOANS. An instalment should appear only once.

select distinct(Insatllment) from LOANS;

INSATLLMENT

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48

36

60

Using Logical Operators (NOT, AND, OR) and Between

1. Display the details of all the loans started after 31-12-2008 for which the number of instalments are more than 36.

select \*from LOANS where Start\_Date>'31-dec-08' and Insatllment>36;

no rows selected

1. Display the Cust\_Name and Loan\_Amount for all the loans which do not have number of instalments 36.

select Cust\_Name,Loan\_Amount from LOANS where Insatllment!=36;

CUST\_NAME LOAN\_AMOUNT

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S.P.Gupta 500000

M.P.Yadav 800000

P.Sharma 700000

K.S.Dhall 500000

1. Display the Cust\_Name and Loan\_Amount for all the loans for which the loan amount is less than 500000 or int\_rate is more than 12.

select Cust\_Name,Loan\_Amount from LOANS where Loan\_Amount<500000 or Int\_Rate>12;

CUST\_NAME LOAN\_AMOUNT

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R.k.Gupta 300000

K.P.Jain 300000

S.P.Sinha 200000

P.Sharma 700000

1. Display the details of all the loans whose Loan\_Amount is in the range 400000 to 500000.

select \* from LOANS where Loan\_Amount between 400000 and 500000;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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2 S.P.Gupta 500000 48 10 22-MAR-08 1800

7 K.S.Dhall 500000 48 05-MAR-08 3800

1. Display the details of all the loans whose rate of interest is in the range 11% to 12%.

select \* from LOANS where Int\_Rate between 11 and 12;

Using IN Operator

1. Display the Cust\_Name and Loan\_Amount for all the loans for which the number of installments are 24, 36, or 48. (Using IN operator)

select Cust\_Name,Loan\_Amount From LOANS where Insatllment in(24,36,48);

CUST\_NAME LOAN\_AMOUNT

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R.k.Gupta 300000

S.P.Gupta 500000

K.P.Jain 300000

S.P.Sinha 200000

K.S.Dhall 500000

Using LIKE Operator

1. Display the AccNo, Cust\_Name, and Loan\_Amount for all the loans for which the Cust\_Name ends with 'Sharma'.

select ACCNOO,Cust\_Name,Loan\_Amount from LOANS where Cust\_Name like '%Sharma';

ACCNOO CUST\_NAME LOAN\_AMOUNT

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6 P.Sharma 700000

1. Display the AccNo, Cust\_Name, and Loan\_Amount for all the loans for which the Cust\_Name ends with 'a'.

select ACCNOO,Cust\_Name,Loan\_Amount from LOANS where Cust\_Name like '%a';

ACCNOO CUST\_NAME LOAN\_AMOUNT

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1 R.k.Gupta 300000

2 S.P.Gupta 500000

5 S.P.Sinha 200000

6 P.Sharma 700000

1. Display the AccNo, Cust\_Name, and Loan\_Amount for all the loans for which the Cust\_Name contains 'a'.

select ACCNOO,Cust\_Name,Loan\_Amount from LOANS where Cust\_Name like '%a%';

ACCNOO CUST\_NAME LOAN\_AMOUNT

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1 R.k.Gupta 300000

2 S.P.Gupta 500000

3 K.P.Jain 300000

4 M.P.Yadav 800000

5 S.P.Sinha 200000

6 P.Sharma 700000

7 K.S.Dhall 500000

1. Display the AccNo, Cust\_Name, and Loan\_Amount for all the loans for which the Cust\_Name does not contain 'P'.

select ACCNOO,Cust\_Name,Loan\_Amount from LOANS where not (Cust\_Name like '%P%');

ACCNOO CUST\_NAME LOAN\_AMOUNT

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1 R.k.Gupta 300000

7 K.S.Dhall 500000

1. Display the AccNo, Cust\_Name, and Loan\_Amount for all the loans for which the Cust\_Name contains 'a' as the second last character.

select ACCNOO,Cust\_Name,Loan\_Amount from LOANS where Cust\_Name like '%a\_';

ACCNOO CUST\_NAME LOAN\_AMOUNT

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4 M.P.Yadav 800000

Using ORDER BY clause

1. Display the details of all the loans in the ascending order of their Loan\_Amount.

select \* from LOANS ORDER BY Loan\_Amount;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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5 S.P.Sinha 200000 36 12.5 03-JAN-10 4500

1 R.k.Gupta 300000 36 12 19-JUL-09 1200

3 K.P.Jain 300000 36 08-MAR-07 1600

2 S.P.Gupta 500000 48 10 22-MAR-08 1800

7 K.S.Dhall 500000 48 05-MAR-08 3800

6 P.Sharma 700000 60 12.5 05-JUN-08 3500

4 M.P.Yadav 800000 60 10 16-DEC-08 2250

1. Display the details of all the loans in the descending order of their Start\_Date.

select \* from LOANS ORDER BY Start\_Date DESC;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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5 S.P.Sinha 200000 36 12.5 03-JAN-10 4500

1 R.k.Gupta 300000 36 12 19-JUL-09 1200

4 M.P.Yadav 800000 60 10 16-DEC-08 2250

6 P.Sharma 700000 60 12.5 05-JUN-08 3500

2 S.P.Gupta 500000 48 10 22-MAR-08 1800

7 K.S.Dhall 500000 48 05-MAR-08 3800

3 K.P.Jain 300000 36 08-MAR-07 1600

Using UPDATE, DELETE, ALTER TABLE

1. Put the interest rate 11.50% for all the loans for which interest rate is NULL.

update LOANS set Int\_Rate=11.50 where Int\_Rate is Null;

select \* from LOANS;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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1 R.k.Gupta 300000 36 12 19-JUL-09 1200

2 S.P.Gupta 500000 48 10 22-MAR-08 1800

3 K.P.Jain 300000 36 11.5 08-MAR-07 1600

4 M.P.Yadav 800000 60 10 16-DEC-08 2250

5 S.P.Sinha 200000 36 12.5 03-JAN-10 4500

6 P.Sharma 700000 60 12.5 05-JUN-08 3500

7 K.S.Dhall 500000 48 11.5 05-MAR-08 3800

1. Increase the interest rate by 0.5% for all the loans for which the loan amount is more than 400000.

update LOANS set Int\_Rate=Int\_Rate+0.5 where Loan\_Amount>400000;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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1 R.k.Gupta 300000 36 12 19-JUL-09 1200

2 S.P.Gupta 500000 48 10.5 22-MAR-08 1800

3 K.P.Jain 300000 36 11.5 08-MAR-07 1600

4 M.P.Yadav 800000 60 10.5 16-DEC-08 2250

5 S.P.Sinha 200000 36 12.5 03-JAN-10 4500

6 P.Sharma 700000 60 13 05-JUN-08 3500

7 K.S.Dhall 500000 48 12 05-MAR-08 3800

1. For each loan replace Interest with (Loan\_Amount\*Int\_Rate\*Instalments) 12\*100.

update LOANS set Interest=(Loan\_Amount\*Int\_Rate\*Insatllment)/12\*100;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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1 R.k.Gupta 300000 36 12 19-JUL-09 1080000000

2 S.P.Gupta 500000 48 10.5 22-MAR-08 2100000000

3 K.P.Jain 300000 36 11.5 08-MAR-07 1035000000

4 M.P.Yadav 800000 60 10.5 16-DEC-08 4200000000

5 S.P.Sinha 200000 36 12.5 03-JAN-10 750000000

6 P.Sharma 700000 60 13 05-JUN-08 4550000000

7 K.S.Dhall 500000 48 12 05-MAR-08 2400000000

1. Delete the records of all the loans of 'K.P. Jain'.

delete from LOANS where Cust\_Name='K.P.Jain';

select \* from LOANS;

ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST

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1 R.k.Gupta 300000 36 12 19-JUL-09 1080000000

2 S.P.Gupta 500000 48 10.5 22-MAR-08 2100000000

4 M.P.Yadav 800000 60 10.5 16-DEC-08 4200000000

5 S.P.Sinha 200000 36 12.5 03-JAN-10 750000000

6 P.Sharma 700000 60 13 05-JUN-08 4550000000

7 K.S.Dhall 500000 48 12 05-MAR-08 2400000000

1. Add another column Category of type CHAR(1) in the Loan table.

alter table LOANS add Category Char(1);

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ACCNOO CUST\_NAME LOAN\_AMOUNT INSATLLMENT INT\_RATE START\_DAT INTEREST C

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1 R.k.Gupta 300000 36 12 19-JUL-09 1080000000

2 S.P.Gupta 500000 48 10.5 22-MAR-08 2100000000

4 M.P.Yadav 800000 60 10.5 16-DEC-08 4200000000

5 S.P.Sinha 200000 36 12.5 03-JAN-10 750000000

6 P.Sharma 700000 60 13 05-JUN-08 4550000000

7 K.S.Dhall 500000 48 12 05-MAR-08 2400000000

Using Aggregate Functions

1. Display the sum of all Loan Amount for whose Interest rate is greater than 10.

select sum(Loan\_Amount) from LOANS;

SUM(LOAN\_AMOUNT)

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3000000

1. Display the Maximum Interest from Loans table.

select max(Interest) from LOANS;

MAX(INTEREST)

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4550000000

1. Display the count of all loan holders whose name is ending with ‘Sharma’.

select count(Cust\_Name) from LOANS where Cust\_Name like '%Sharma';

COUNT(CUST\_NAME)

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1

1. Display the count of all loan holders whose Interest is Null.

select count(Cust\_Name) from LOANS where Interest is null;

COUNT(CUST\_NAME)

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0

Using Group By Clause

1. Display the Interest wise details of Loan Account Holders.

select Interest from LOANS GROUP BY Interest;

INTEREST

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2100000000

2400000000

1080000000

750000000

4550000000

4200000000

1. Display the Interest wise details of Loan Account Holders with at least 10 installments remaining.

select Interest,Insatllment from LOANS GROUP BY Interest,Insatllment having Insatllment>=10;

INTEREST INSATLLMENT

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750000000 36

1080000000 36

2100000000 48

2400000000 48

4550000000 60

4200000000 60

1. Display the Interest wise count of all loan holders whose Installment due is more than 5 in each group.

select count(Interest),Insatllment from LOANS GROUP BY Interest,Insatllment having Insatllment>5;

COUNT(INTEREST) NSATLLMENT

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1 36

1 36

1 48

1 48

1 60

1 60