

MySQL Revision Tour -

Lab Exercise (Solutions)

Consider a database LOANS with the following table:

Table: Loan_Accounts

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. Gupta	300000	36	12.00	19-07-2009	
2	S.P. Sharma	500000	48	10.00	22-03-2008	
3	K.P. Jain	300000	36	NULL	08-03-2007	
4	M.P. Yadav	800000	60	10.00	06-12-2008	
5	S.P. Sinha	200000	36	12.50	03-01-2010	
6	P. Sharma	700000	60	12.50	05-06-2008	
7	K.S. Dhall	500000	48	NULL	05-03-2008	

Write SQL commands for the tasks 1 to 35 and write the output for the SQL commands 36 to 40:

SYNTAX –

SELECT [*],[COLUMN NAME1, COLUMN NAME 2... COLUMN NAME n]

FROM < TABLE / RELATION NAME>

[WHERE <LOGICAL TEST EXPRESION>]

[ORDER BY < COLUMN NAME> [ASC / DESC]]

[GROUP BY <COLUMN NAME> [HAVING < LOGICAL TEST EXPRESSION >]]

Create Database and use it

1.1 Create the database LOANS.

Ans: create database LOANS;

Output –

```
mysql> CREATE DATABASE LOAN;
Query OK, 1 row affected (0.09 sec)
```

1.2 Display list of Databases –

Ans: SHOW DATABASES;

```
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| akash      |
| ip20      |
| loan      |
| mysql     |
| prerna    |
| school    |
| test      |
| xiics     |
+-----+
```

2. Use the database LOANS i.e. make it current or Active Database -

Ans: use LOANS;

Output:-

```
mysql> USE LOAN
Database changed
```

Create Table / Insert Into

3.1 Display list of Tables or Database objects –

SHOW FULL TABLES;

Output: - Empty Sets

3.2 Create the table Loan_Accounts and insert tuples in it.

Create table Loan_Accounts (AccNo int, Cust_Name Varchar(30), Loan_Amount int, Instalments int, Int_Rate float, Start_Date Date, Interest int);

3.3 Check / Display whether table is created or not –

Ans – SHOW FULL TABLES;

Output:-

```
+-----+-----+
| Tables_in_loan | Table_type |
+-----+-----+
| custloanamount | VIEW      |
| loan_accounts  | BASE TABLE |
+-----+-----+
```

3.4 Display of structure of Loan_accounts table –

Ans – DESCRIBE LOAN_ACCOUNTS;

Output –

```
mysql> DESCRIBE LOAN_ACCOUNTS;
```

Field	Type	Null	Key	Default	Extra
AccNo	int(11)	YES		NULL	
Cust_Name	varchar(30)	YES		NULL	
Loan_Amount	int(11)	YES		NULL	
Instalments	int(11)	YES		NULL	
Int_Rate	float	YES		NULL	
Start_Date	date	YES		NULL	
Interest	int(11)	YES		NULL	

3.3 Insert the above records in the Loan_Accounts -

```
INSERT INTO LOAN_ACCOUNTS (ACCNO, CUST_NAME, LOAN_AMOUNT, INSTALMENTS, INT_RATE, START_DATE, INTEREST) VALUES(1, 'R.K. GUPTA', 300000, 36,12.00,'2009-07-19', NULL);
```

```
INSERT INTO LOAN_ACCOUNTS VALUES(2, 'S.P. SHARMA', 500000, 48,12.00,'2008-03-22', NULL);
```

```
INSERT INTO LOAN_ACCOUNTS VALUES(3, 'K.P. JAIN', 300000, 36,NULL,'2007-03-08', NULL);
```

```
INSERT INTO LOAN_ACCOUNTS VALUES(4, 'M.P. YADAV', 800000, 60, 10.00,'2008-12-06', NULL);
```

```
INSERT INTO LOAN_ACCOUNTS VALUES(5, 'S.P. SINHA', 200000, 36, 12.50,'2010-01-03', NULL);
```

```
INSERT INTO LOAN_ACCOUNTS VALUES(6, 'P. SHARMA', 700000, 60, 12.50,'2008-06-05', NULL);
```

```
INSERT INTO LOAN_ACCOUNTS VALUES(7, 'K. S. DHALL', 800000, 48, NULL,'2008-03-05', NULL);
```

Simple Select

4. Display the details of all the loans.

Ans: select * from Loan_Accounts;

```
mysql> SELECT * FROM LOAN_ACCOUNTS;
```

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. GUPTA	300000	36	12	2009-07-19	NULL
2	S.P. SHARMA	500000	48	12	2008-03-22	NULL
3	K.P. JAIN	300000	36	NULL	2007-03-08	NULL
4	M.P. YADAV	800000	60	10	2008-12-06	NULL
5	S.P. SINHA	200000	36	12.5	2010-01-03	NULL
6	P. SHARMA	700000	60	12.5	2008-06-05	NULL
7	K. S. DHALL	800000	48	NULL	2008-03-05	NULL

7 rows in set (0.00 sec)

5. Display the AccNo, Cust_Name, and Loan_Amount of all the loans.

Ans: select AccNo, Cust_Name, Loan_Amount from Loan_Accounts;

Output –

AccNo	Cust_Name	Loan_Amount
1	R.K. GUPTA	300000
2	S.P. SHARMA	500000
3	K.P. JAIN	300000
4	M.P. YADAV	800000
5	S.P. SINHA	200000
6	P. SHARMA	700000
7	K. S. DHALL	800000

Conditional Select using Where Clause -

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

Ans: select * from Loan_Accounts where Instalments < 40;

Output –

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. GUPTA	300000	36	12	2009-07-19	NULL
3	K.P. JAIN	300000	36	NULL	2007-03-08	NULL
5	S.P. SINHA	200000	36	12.5	2010-01-03	NULL

7. Display the AccNo and Loan_Amount of all the loans started before 01-04-2009.

Ans: select AccNo, Loan_Amount from Loan_Accounts where Start_Date < '2009-04-01';

(MySQL - date format as YYYY-MM-DD)Output –

AccNo	Loan_Amount
2	500000
3	300000
4	800000
6	700000
7	800000

8. Display the Int_Rate of all the loans started after 01-04-2009.

Ans: select Int_Rate from Loan_Accounts where Start_Date > '2009-04-01';

Int_Rate
12
12.5

Using NULL in MySQL Queries -

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

Incorrect Ans: select * from Loan_Accounts where Int_Rate = NULL;

Output – Empty Set due to = to operator WHICH IS WRONG USE WITH NULL

Correct Ans: select * from Loan_Accounts where Int_Rate is NULL;

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
3	K.P. JAIN	300000	36	NULL	2007-03-08	NULL
7	K. S. DHALL	800000	48	NULL	2008-03-05	NULL

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

Incorrect Ans :- Select * from Loan_Accounts where Int_Rate <> NULL;

(Since IS NOT is correct operator used with NULL INSPITE OF <> OR !=)

Ans: Select * from Loan_Accounts where Int_Rate IS NOT NULL;

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. GUPTA	300000	36	12	2009-07-19	NULL
2	S.P. SHARMA	500000	48	12	2008-03-22	NULL
3	K.P. JAIN	300000	36	11.5	2007-03-08	NULL
4	M.P. YADAV	800000	60	10	2008-12-06	NULL
5	S.P. SINHA	200000	36	12.5	2010-01-03	NULL
6	P. SHARMA	700000	60	12.5	2008-06-05	NULL
7	K. S. DHALL	800000	48	11.5	2008-03-05	NULL

Using DISTINCT Clause – It removes duplicate Values...

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

Ans: Select Distinct Loan_Amount from Loan_Accounts;

Output:-

Loan_Amount
300000
500000
800000
200000
700000

12. Display the total number of instalments of various loans from the table Loan_Accounts. An instalment should appear only once.

Ans: Select COUNT(Distinct Instalments) from Loan_Accounts;

```
mysql> Select COUNT( Distinct Instalments)
+-----+
| COUNT( Distinct Instalments) |
+-----+
| 3 |
+-----+
```

Using Logical Operators (NOT, AND, OR)

13. Display the details of all the loans started after 31-12-2008 for which the number of instalments are more than 30.

Ans: Select * from Loan_Accounts where Start_Date > '2008-12-31' and Instalments > 30;

Output –

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. GUPTA	300000	36	12	2009-07-19	NULL
5	S.P. SINHA	200000	36	12.5	2010-01-03	NULL

14. Display the Cust_Name and Loan_Amount for all the loans which do not have number of instalments 36.

Ans: Select Cust_Name, Loan_Amount from Loan_Accounts where Instalments <> 36;

OR

Ans Select Cust_Name, Loan_Amount from Loan_Accounts where Instalments != 36;

Output:-

CUST_NAME	LOAN_AMOUNT
S.P. SHARMA	500000
M.P. YADAV	800000
P. SHARMA	700000
K. S. DHALL	800000

15. 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.

Ans: Select Cust_Name, Loan_Amount from Loan_Accounts where Loan_Amount < 500000 or Int_Rate > 12;

Output:-

CUST_NAME	LOAN_AMOUNT
R.K. GUPTA	300000
K.P. JAIN	300000
S.P. SINHA	200000
P. SHARMA	700000

16. Display the details of all the loans which started in the year 2009.

Ans: Select * from Loan_Accounts where Start_Date = '2008-03-05';

Output –

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
7	K. S. DHALL	800000	48	NULL	2008-03-05	NULL

17. Display the details of all the loans whose Loan_Amount is in the range 400000 to 500000.

Ans: Select * from Loan_Accounts where Loan_Amount >= 400000 and Loan_Amount <= 500000;

Output :-

AccNO	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
2	S.P. SHARMA	500000	48	12	2008-03-22	NULL

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

Ans: Select * from Loan_Accounts where Int_Rate >= 11 and Int_Rate <= 12;

Output –

AccNO	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R. K. GUPTA	300000	36	12	2009-07-19	NULL
2	S.P. SHARMA	500000	48	12	2008-03-22	NULL

Using IN Operator

19. Display the Cust_Name and Loan_Amount for all the loans for which the number of instalments are 24, 36, or 48. (Using IN operator)

Ans: Select Cust_Name, Loan_Amount from Loan_Accounts where Instalments in (24, 36, 48);

OUTPUT:-

Cust_Name	Loan_Amount
R.K. GUPTA	300000
S.P. SHARMA	500000
K.P. JAIN	300000
S.P. SINHA	200000
K. S. DHALL	800000

Using BETWEEN Operator

20. Display the details of all the loans whose Loan_Amount is in the range 400000 to 500000. (Using BETWEEN operator)

Ans: Select * from Loan_Accounts where Loan_Amount Between 400000 and 500000;

Output –

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
2	S.P. SHARMA	500000	48	12	2008-03-22	NULL

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

(Using BETWEEN operator)

Ans: Select * from Loan_Accounts where Int_Rate Between 11 and 12;

Output:-

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. GUPTA	300000	36	12	2009-07-19	NULL
2	S.P. SHARMA	500000	48	12	2008-03-22	NULL

Using LIKE Operator

22. Display the AccNo, Cust_Name, and Loan_Amount for all the loans for which the Cust_Name ends with 'Sharma'.

Ans: Select AccNo, Cust_Name, Loan_Amount from Loan_Accounts where Cust_Name Like '%Sharma';

Output:-

AccNo	Cust_Name	Loan_Amount
2	S.P. SHARMA	500000
6	P. SHARMA	700000

23. Display the AccNo, Cust_Name, and Loan_Amount for all the loans for which the Cust_Name ends with 'a'.

Ans: Select AccNo, Cust_Name, Loan_Amount from Loan_Accounts where Cust_Name LIKE '%a';

OUTPUT:

ACCNO	CUST_NAME	LOAN_AMOUNT
1	R.K. GUPTA	300000
2	S.P. SHARMA	500000
5	S.P. SINHA	200000
6	P. SHARMA	700000

24. Display the AccNo, Cust_Name, and Loan_Amount for all the loans for which the Cust_Name contains 'a'.

Ans: Select AccNo, Cust_Name, Loan_Amount from Loan_Accounts where Cust_Name LIKE '%a%';

OUTPUT:

ACCNO	CUST_NAME	LOAN_AMOUNT
1	R.K. GUPTA	300000
2	S.P. SHARMA	500000
3	K.P. JAIN	300000
4	M.P. YADAV	800000
5	S.P. SINHA	200000
6	P. SHARMA	700000
7	K. S. DHALL	800000

25. Display the AccNo, Cust_Name, and Loan_Amount for all the loans for which the Cust_Name does not contain 'P'.

Ans: Select AccNo, Cust_Name, Loan_Amount from Loan_Accounts where Cust_Name NOT LIKE '%P%';

OUTPUT:

AccNo	Cust_Name	Loan_Amount
7	K. S. DHALL	800000

26. Display the AccNo, Cust_Name, and Loan_Amount for all the loans for which the Cust_Name contains 'a' as the second last character.

Ans: Select AccNo, Cust_Name, Loan_Amount from Loan_Accounts where Cust_Name LIKE '%a_';

OUTPUT:

AccNo	Cust_Name	Loan_Amount
4	M.P. YADAV	800000

(Using ORDER BY clause)

27. Display the details of all the loans in the ascending order of their Loan_Amount.

Ans: Select * from Loan_Accounts order by Loan_Amount;

28. Display the details of all the loans in the descending order of their Start_Date.

Ans: Select * from Loan_Accounts order by Start_Date Desc;

29.1 Display the details of all the loans in the descending of their Loan_Amount;

29.2 Display the Loan_Amount in the descending order of their Start_Date from loanaccounts table and int_rate is NULL.

Ans:29.1 Select * from Loan_Accounts order by Loan_Amount;

Ans:29.2 Select loan_amount from Loan_Accounts where int_rate IS NULL order by start_date desc;

Using UPDATE, DELETE, ALTER TABLE

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

Ans: Update Loan_Accounts set Int_Rate=11.50 where Int_Rate=NULL;

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

Ans: Update Loan_Accounts set IntRate=Int_Rate + 0.5 where Loan_Amount> 400000;

32. For each loan replace Interest with (Loan_Amount*Int_Rate*Instalments)/(12*100).

Ans: Update Loan_Accounts set Interest=(Loan_Amount*Int_Rate*Installments)/(12*100);

33. Delete the records of all the loans whose start date is before 2007.

Ans: Delete from Loan_Accounts where Start_Date< '2007-01-01';

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

Ans: Delete from Loan_Accounts where Cust_Name LIKE 'K.P.Jain';

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

Ans: Alter table Loan_Accounts add column Category Char(1);

Find the Output of the following queries

36. SELECT cust_name, LENGTH(Cust_Name), LCASE(Cust_Name), UCASE(Cust_Name) FROM Loan_Accounts WHERE Int_Rate< 11.00;

Ans:

Cust_Name	Length(Cust_Name)	LCASE(Cust_Name)	UCASE(Cust_Name)
-----------	-------------------	------------------	------------------

S.P. Sharma	11	s.p. sharma	S.P. SHARMA
M.P. Yadav	10	m.p. Yadav	M.P. YADAV

37. SELECT LEFT(Cust_Name, 3), Right(Cust_Name, 3), SUBSTR(Cust_Name, 1, 3) FROM Loan_Accounts WHERE Int_Rate> 10.00;

Ans:

LEFT(Cust_Name, 3)	Right(Cust_Name, 3)	SUBSTR(Cust_Name, 1, 3)
R.K	pta	.K.
S.P	nha	.P.
K.S	all	.S.

38. SELECT RIGHT(Cust_Name, 3), SUBSTR(Cust_Name, 5) FROM Loan_Accounts;

Ans:

pta Gupta
rma Sharma
ain Jain
dav Yadav
nha Sinha
rma harma
all Dhall

39. SELECT DAYNAME(Start_Date) FROM Loan_Accounts;

Ans:

Sunday
Saturday
Thursday
Saturday
Sunday
Thursday
Wednesday

40. SELECT ROUND(Int_Rate*110/100, 2) FROM Loan_Account WHERE Int_Rate> 10;

Ans: 13.20

13.75

13.75

Write the output produced by the following SQL commands:

41. SELECT POW(4,3), POW(3,4);

Ans: 64, 81

42. SELECT ROUND(543.5694,2), ROUND(543.5694), ROUND(543.5694,-1);

Ans: 543.57, 544, 540

43. SELECT TRUNCATE(543.5694,2), TRUNCATE(543.5694,-1);

Ans: 543.56, 540

44. SELECT LENGTH("Prof. M. L. Sharma");

Ans: 18

45. SELECT CONCAT("SHEIKH", " HAROON") "FULL NAME";

Ans: SHEIKH HAROON

46. SELECT YEAR(CURDATE()), MONTH(CURDATE()), DAY(CURDATE());

Ans: 2019, 08, 26

47. SELECT DAYOFYEAR(CURDATE()), DAYOFMONTH(CURDATE()), DAYNAME(CURDATE());

Ans: 2019, 2, Monday

48. SELECT LEFT("Unicode",3), RIGHT("Unicode",4);

Ans: Uni, code

49. SELECT INSTR("UNICODE","CO"), INSTR("UNICODE","CD");

Ans: 4, 0

50. SELECT MID("Informatics",3,4), SUBSTR("Practices",3);

Ans: form, actices