JADAYPUR UNIVERSITY

DATABASE MANAGEMENT SYSTEM

PROJECT & LAB ASSIGNMENTS

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Class: MCA 1st Year 2nd Sem

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LIBRARY MANAGEMENT SYSTEM

• GENERAL DESCRIPTION :

Library Management System is computerized system which helps staffs (librarian) to manage the library daily activity in electronic format. It reduces the paperwork such as file lost, file damaged and time consuming. It can help staff to manage the transaction or record more effectively and take less time.

• PROBLEM STATEMENT:

The problem occurred before having computerized system includes:

1. File Lost:

When computerized system is not implemented file is always lost because of human environment. Sometimes due to some human error there may be a loss of records.

2. File Damaged:

When computerized system is not there file is always lost due to some accident like spilling of water by some member on file accidentally. Besides some natural disaster like floods or fires may also damage files.

3. Difficult To Search Records:

When there is no computerized system there is always a difficulty in searching of records if the records are large in number.

4. Space Consuming:

After the number of records become large the space for physical storage of file and records also increases if no computerized system is implemented.

5. Cost Consuming:

As there is no computerized system to add, each record paper will be needed which will increase the cost of management of library.

• SYSTEM ANALYSIS AND REQUIREMENTS:

>> NON FUNCTIONAL REQUIREMENTS

Product Requirements

1. EFFICIENCY REQUIREMENT:

When a library Management system will be implemented librarian and user will easily access library as searching and book transaction will be very faster.

2. RELIABILITY REQUIREMENT:

The system should accurately performs member registration, member validation, report generation, book transaction and search.

3. USABILITY REQUIREMENT:

The system is designed for a user friendly environment so that student and staff of library can perform the various tasks easily and in an effective way.

>> FUNCTIONAL REQUIREMENTS

1. NORMAL USER

i) <u>USER LOGIN</u>

>> Description of feature:

This feature used by the user to login into the system. They are required to enter user id and Password before they are allowed to enter the system .Every member has different id and password. The user id and password will be verified and if invalid id is there member is not allowed to enter the system.

>> Functional requirements

- -user id is provided when they register
- -The system must only allow user with valid id and password to enter the system

- -The system performs authorization process which decides What user level can access to.
- -The user must be able to logout after they finished using system.

ii) REGISTER NEW USER

>> Description of feature

This feature can be performed by all users to register new user to Create account.

>> Functional requirements

- -System must be able to verify information
- -System must be able to delete information if information is wrong

iii) <u>REGISTER NEW BOOK</u>

>> Description of feature :

This feature allows to add new books to the library

>> Functional requirements

- -System must be able to verify information
- -System must be able to enter number of copies into table.
- System must be able to not allow two books having same book id.

iv) SEARCH BOOK

>> Description of feature :

This feature is found in book Maintenance part. We can search book based on book id, book name, Publication or by author name,

>> Functional requirements

- System must be able to search the database based on select search type
- System must be able to filter book based on keyword enterd
- System must be able to show the filtered book in table view
- -System should be able to add detailed information about events

• SOFTWARE AND HARDWARE ANALYSYS AND REQUIREMENTS:

SOFTWARE:

- >> Any Operating system for we browse interface.
- >> Database MYSQL-MYSQL is used as database as it easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write.

HARDWARE:

- >> Atleast 1GB storage on the server side.
- >> Internet connection on both reader and server side.

• DATA COLLECTION:

1. Books

<u>BookID</u>	Title	Author	Book_Status	Price
B00001	PROGRAMMING WITH JAVA	E BALAGURUSAMY	Available	100
B00002	DATABASE MANAGEMENT SYSTEM	RAJIV CHOPRA	Available	300
B00003	PYTHON PROGRAMMING FOR BEGINNERS	ANTHONY ADAMS	Available	700
B00004	OPERATING SYSTEMS	WILLIAM STALLINGS	Not Available	400
B00005	DATA STRUCTURES USING C	REEMA THAREJA	Available	200

2. Member

<u>MembI</u>	Nam	Contact_N	Address	Memb_Typ	Memb_Dat	Expiry
<u>D</u>	e	0.		e	e	_Date
M00001	Arjun Kapoo r	6778767564	Alipore,Kolkata	Student	2021-05-01	2026- 04-30
M00002	Ishani Dutta	9387827966	Behala,Kolkata	Staff	2020-08-01	2025- 07-30
M00003	Kabir Singh	8136976445	Dhakuria,Kolkat a	Teacher	2018-10-01	2023- 09-30
M00004	Anany a Pande y	9855465765	Jadavpur,Kolkat a	Student	2022-05-01	2027- 04-30

3. Borrowed by

MembID	BookID	Issue_Date	Due_Date	Return_Date
M00001	B00004	2023-03-12	2023-04-10	2023-04-12
M00003	B00002	2023-03-15	2023-04-15	2023-04-05
M00004	B00001	2023-02-24	2023-03-24	2023-03-28

4. Publisher

<u>PubID</u>	Name	Contact_No.	Address
P00001	Mc Graw Hill	6869875744	Gariahat, Kolkata
P00002	Pearson	7834512879	Dumdum, Kolkata
P00003	OXFORD	7812434509	Park Street, Kolkata
P00004	WILEY	9823451289	Ballygunge, Kolkata

5. Published by

BookID	PubID
B00001	P00001
B00002	P00003
B00005	P00002

6. Staff

<u>StaffID</u>	Name	Contact_no	Address
S00001	Aayan Kundu	7346015361	Tollygunge, Kolkata
S00002	Ishita Dutta	9572534269	New Alipore, Kolkata
S00003	Ananya Pandey	9855465765	Behala, Kolkata
S00004	Jay Mahato	9823451289	Ballygunge, Kolkata

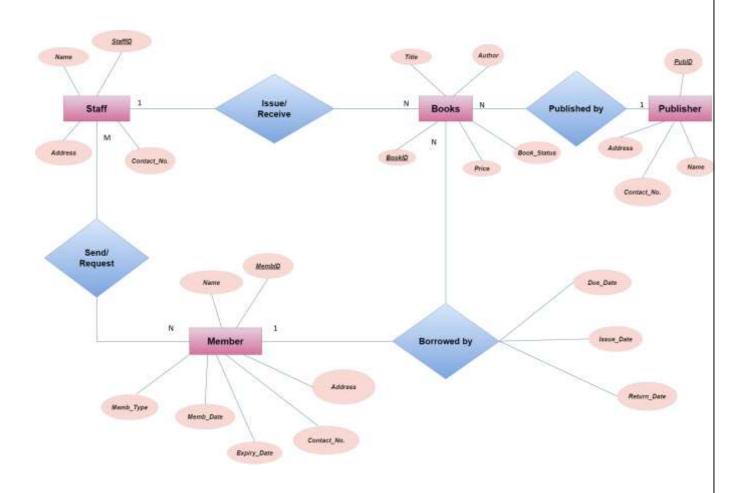
7. Issue/Receive

StaffID	BookID
S00002	B00004
S00001	B00002
S00004	B00001

8. Send/Requests

StaffID	MembID
S00002	M00001
S00001	M00003
S00004	M00004

• E-R DIAGRAM:



ASSIGNMENT 1

Question 1: Create the following tables:

Table name: EMPLOYEE

Structure:

EMP_CODE char(16)

EMP_NAME char(20)

DEPT_CODE char(16)

DESIG_CODE char(16)

SEX char(1)

ADDRESS char (25)

CITY char (20)

STATE char (20)

PIN char (6)

BASIC Number

JN_DT Date

Primary key is EMP_CODE

Table name: DESIGNATION

Structure:

DESIG_CODE char(16)

DESIG_DESC char(20)

Primary key is DESIG_CODE

Table name: DEPARTMENT

Structure:

DEPT_CODE char(16)

DEPT_NAME char(20)

Primary key is DEPT_CODE.

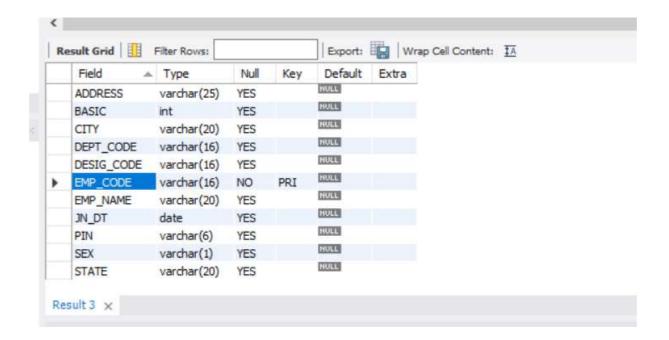
Solution:

```
CREATE TABLE EMPLOYEE(
 EMP_CODE varchar(16) NOT NULL PRIMARY KEY,
 EMP_NAME varchar(20),
 DEPT_CODE varchar(16),
 DESIG_CODE varchar(16),
 SEX varchar(1),
 ADDRESS varchar(25),
 CITY varchar(20),
 STATE varchar(20),
 PIN varchar(6),
 BASIC int,
 JN_DT Date);
0 row(s) affected
CREATE TABLE DESIGNATION(
DESIG_CODE varchar(16) NOT NULL PRIMARY KEY,
DESIG_DESC varchar(20));
0 row(s) affected
CREATE TABLE DEPARTMENT(
DEPT_CODE varchar(16) NOT NULL PRIMARY KEY,
DEPT_NAME varchar(20));
0 row(s) affected
```

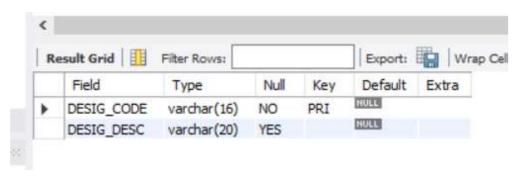
Question 2: Display the structure of each table.

Solution:

DESC EMPLOYEE;



DESC DESIGNATION;



DESC DEPARTMENT;



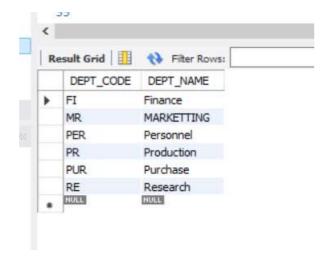
♣ Question 3. Insert few rows in each table.

[While entering data in EMP table use DESIG_CODE which exists in DESIGNATION table and DEPT_CODE which is exists in DEPARTMENT table. In DESIGNATION table, assign code for Manager, Executive, officer, clerk and helper. In DEPARTMENT table, assign code for Personnel, Production, Purchase, Finance, Research departments]

Solution:

SELECT * FROM DEPARTMENT;

INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME) VALUES('PER','Personnel'); 1 row(s) affected INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME) VALUES('PR','Production'); 1 row(s) affected INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME) VALUES('PUR','Purchase'); 1 row(s) affected INSERT INTO DEPARTMENT(DEPT CODE, DEPT NAME) VALUES ('FI', 'Finance'); 1 row(s) affected INSERT INTO DEPARTMENT(DEPT CODE, DEPT NAME) VALUES('RE','Research'); 1 row(s) affected INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME) VALUES('MR','MARKETTIN); 1 row(s) affected



INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC) VALUES('MN','Manager');

1 row(s) affected

INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC) VALUES('EXE','Executive');

1 row(s) affected

INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC)VALUES('OFF','Officer');

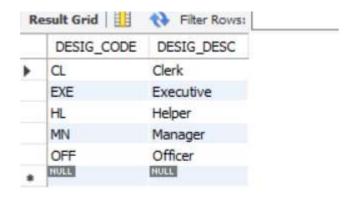
1 row(s) affected

INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC) VALUES('CL','Clerk');

1 row(s) affected

INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC) VALUES('HL','Helper');

SELECT * FROM DESIGNATION;



INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E101','Shruti Pathak','PR','EXE','F','Purulia','Purulia','West Bengal','723102',45000,DATE '2015-05-01');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E102','Annesa Mondal','FI','OFF','F','Krishnagar','Nadia','West Bengal','741101',50000,DATE '2020-01-02')

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E103','Rahul Mahato','PUR','MN','M','Haldia','EastMidnapur','West Bengal','721108',60000,DATE '2020-05-01');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E104','Nilesh Kundu','RE','HL','M','Durgapur','West Burdwan','West Bengal','700014',90000,DATE '2018-02-01');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E105','Nitish Kumar Mondal','FI','CL','M','New Town','Kolkata','West Bengal','700026',25000,DATE '2022-01-02');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E106','Himangsu Bauri','PUR','EXE','M','Thakurpukur','Kolkata','West Bengal','400020',40000,DATE '2021-08-01');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E107','Ivy Dey','PR','MN','F','Garia','Kolkata','West Bengal','700009', 60000,DATE '2016-02-01');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E108','Saraswati Murmu','PER','OFF','F','Jadavpur','Kolkata','West Bengal','760038',55000,DATE '2020-08-01');

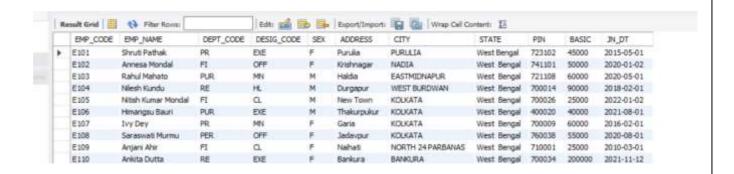
1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E109','Anjani Ahir','FI','CL','F','Naihati','North 24 Parbanas','West Bengal','710001',25000,DATE '2010-03-01');

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E110','Ankita Dutta','RE','EXE','F','Bankura','Bankura','West Bengal','700034',200000,DATE '2021-11-12');

1 row(s) affected

SELECT * FROM EMPLOYEE;



Question 4: In EMP table insert few rows without DEPT_CODE and BASIC.

Solution:

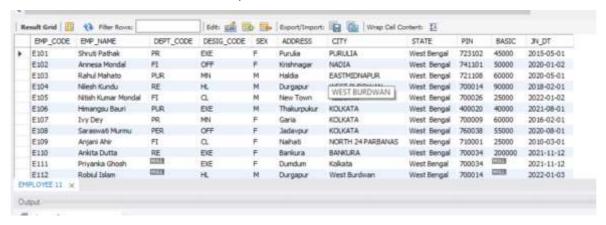
INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E111','Priyanka Ghosh',NULL,'EXE','F','Dumdum','Kolkata','West Bengal','700034',NULL,DATE '2021-11-12');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES

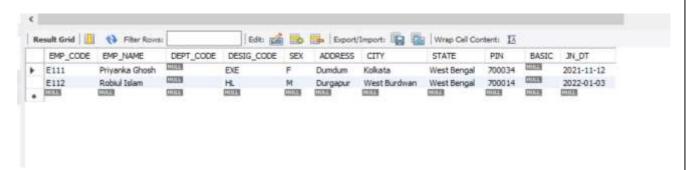
('E112','Robiul Islam',NULL,'HL','M','Durgapur','West Burdwan','West Bengal','700014',NULL,DATE '2022-01-03');

SELECT * FROM EMPLOYEE;



4 Question 5: Find the rows with unassigned DEPT_CODE. Solution.

SELECT * FROM EMPLOYEE WHERE DEPT_CODE IS NULL;



Question 6: Find the rows with BASIC equal to 0.

Solution:

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES

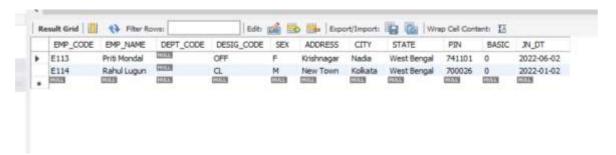
('E113','Priti Mondal',NULL,'OFF','F','Krishnagar','Nadia','West Bengal','741101',0,DATE '2022-06-02');

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES

('E114','Rahul Lugun',NULL,'CL','M','New Town','Kolkata','West Bengal','700026',0,DATE '2022-01-02');

1 row(s) affected

SELECT * FROM EMPLOYEE WHERE BASIC = 0;



Question 7: Find the rows with unassigned Basic [note down the difference between the results obtained in Q.6 and Q.7] Solution:

SELECT * FROM EMPLOYEE WHERE BASIC IS NULL:



Question 8: Find the average BASIC of the employees.

Solution:

SELECT AVG(BASIC) FROM EMPLOYEE;



Question 9: Replace the BASIC with 0 for the rows with unassigned BASIC.

Solution:

UPDATE EMPLOYEE SET

BASIC = 0

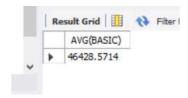
WHERE BASIC IS NULL;

2 row(s) affected Rows matched: 2 Changed: 2 Warnings:

♣ Question 10. Find the average BASIC. (Note the difference of result obtained in Q.8 & Q.10.)

Solution:

SELECT AVG(BASIC) FROM EMPLOYEE;



4 Question 11. Delete the rows with unassigned DEPT_CODE.

Solution:

DELETE FROM EMPLOYEE WHERE DEPT_CODE IS NULL;

4 row(s) affected

♣ Question 12: Say, Net pay of an employee= Basic+ HRA+ DA where HRA is 50% of the Basic & DA is 40% of Basic. Show the employee name & Net pay for all employees.

Solution:

SELECT EMP_NAME, BASIC * 0.4 + BASIC * 0.5 AS NET_PAY FROMEMPLOYEE;



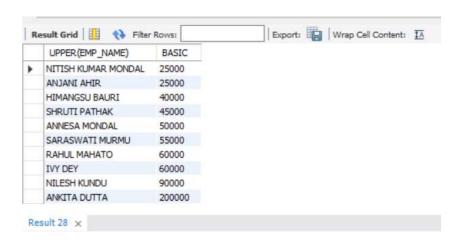
Question 13: Show the EMP_NAME & BASIC in the ascending order of DEPT_CODE. The employee name must appear in uppercase.

Solution:

SELECT UPPER(EMP_NAME), BASIC

FROM EMPLOYEE

ORDER BY BASIC;



Question 14: Find the employees who have joined after 1st January 2010

Solution:

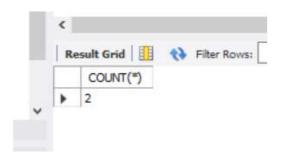
SELECT EMP_NAME AS EMPLOYEE_NAME, JN_DT AS JOIN_DATEFROM EMPLOYEE WHERE JN_DT > DATE '2020-01-01';



Question 15: Find, how many employees have joined in the month of January?

Solution:

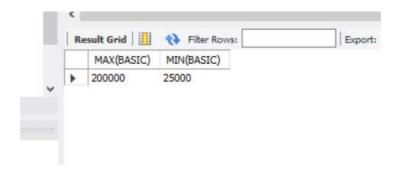
SELECT COUNT(*) FROM EMPLOYEE WHERE SUBSTR(JN_DT,6,2) = '01';



Question 16: Find the maximum & minimum Basic.

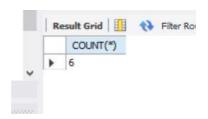
Solution:

SELECT MAX(BASIC), MIN(BASIC) FROM EMPLOYEE;



4 Question 17: Find how many Female employees are there? Solution:

SELECT COUNT(*) FROM EMPLOYEE WHERE SEX = 'F';COUNT(*)



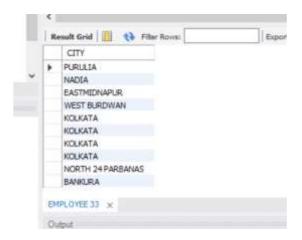
Question 18: Replace CITY with existing value converted into uppercase for all rows.

Solution:

UPDATE EMPLOYEE SET CITY = UPPER(CITY);

10 row(s) affected Rows matched: 10 Changed: 10 Warnings: 0

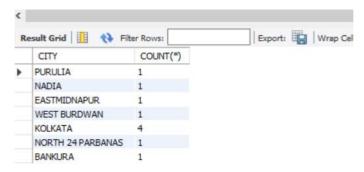
SELECT CITY FROM EMPLOYEE;



Question 19: Find in how many different cities various employees are residing?

Solution:

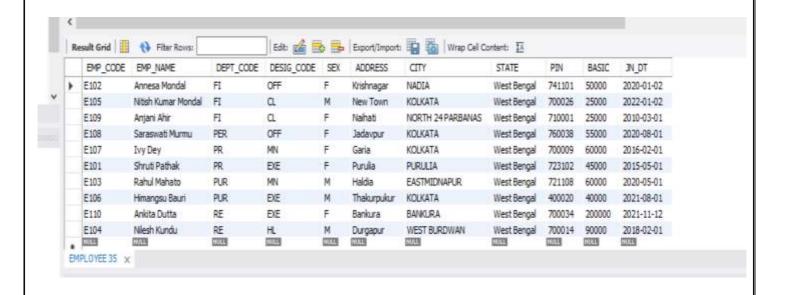
SELECT CITY, COUNT(*) FROM EMPLOYEE GROUP BY CITY;



♣ Question 20: Display the employee information in the ascending order of DEPT_CODE and within a Department, it should be in the descending order of BASIC.

Solution:

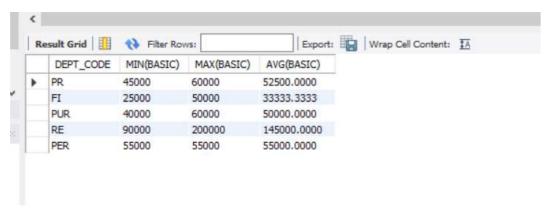
SELECT * FROM EMPLOYEE ORDER BY DEPT_CODE, BASIC DESC;



ASSIGNMENT 2

• Question 1: From the EMP table show the minimum, maximum and average basic for each department (show dept. Code). Solution:

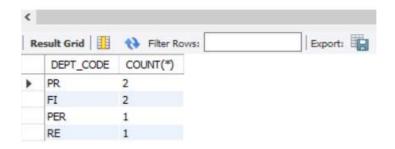
SELECT DEPT_CODE, MIN(BASIC), MAX(BASIC), AVG(BASIC) FROM EMPLOYEE GROUP BY DEPT_CODE;



• Question 2: Find the number of female employees in each department (show dept. Code).

Solution:

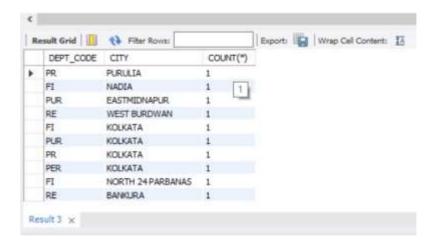
SELECT DEPT_CODE, COUNT(*) FROM EMPLOYEE WHERE SEX ='F' GROUP BY DEPT_CODE;



• Question 3: Find the city wise no. of employees for each department (show dept. Code).

Solution:

SELECT DEPT_CODE, CITY, COUNT(*) FROM EMPLOYEE GROUP BY DEPT_CODE, CITY;



 Question 4: Show the designation wise no of employees who have joined in the year 2020 in each department. The listing should appear in the ascending order of no. of employees.

Solution:

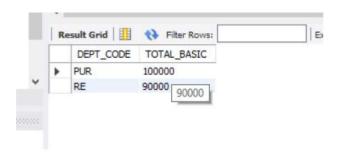
SELECT DESIG_CODE, COUNT(*) FROM EMPLOYEE WHERE SUBSTR(JN_DT,8,2) = '20' GROUP BY DESIG_CODE ORDER BY COUNT(*);



 Question 5: Find the department code wise total basic of male employees only for the departments for which such total is more than 50,000 and the listing should appear in the descending order of total basic.

Solution:

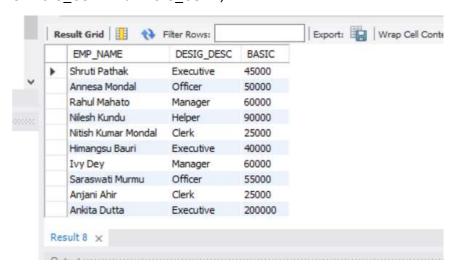
SELECT DEPT_CODE, SUM(BASIC) AS TOTAL_BASIC FROM EMPLOYEE WHERE SEX = 'M' GROUP BY DEPT_CODE HAVING SUM(BASIC) > 50000 ORDER BY SUM(BASIC) DESC;



 Question 6: Show the employee name, Designation description and basic for all employees.

Solution:

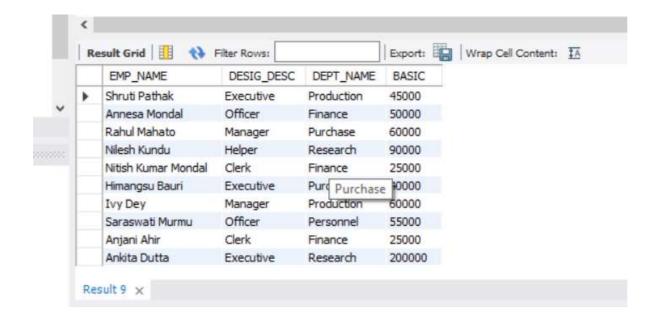
SELECT e.EMP_NAME, d.DESIG_DESC , e.BASIC FROM EMPLOYEE e, DESIGNATION d WHERE e.DESIG CODE = d.DESIG CODE;



• Question 7: Show the employee name, Designation description, Department Name & Basic for all employees.

Solution:

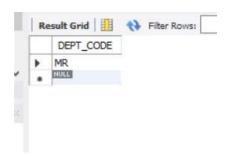
SELECT e.EMP_NAME, d.DESIG_DESC, dp.DEPT_NAME, e.BASIC FROM EMPLOYEE e, DESIGNATION d,
DEPARTMENT dp WHERE e.DESIG_CODE = d.DESIG_CODE AND e.DEPT_CODE = dp.DEPT_CODE;



• Question 8: Find the department Codes in which no employee works.

Solution:

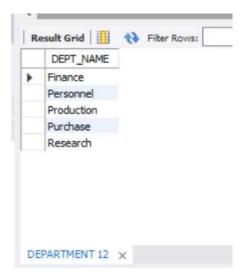
SELECT DEPT_CODE FROM DEPARTMENT WHERE DEPT_CODE NOT IN (SELECT DEPT_CODE FROM EMPLOYEE);



• Question 9: Find the department names where at least one employeeworks.

Solution:

SELECT DEPT_NAME FROM DEPARTMENT WHERE DEPT_CODE IN (SELECT DEPT_CODE FROM EMPLOYEE);



• Question 10: Find the department names where at least 10employee's works.

Solution:

[I have not enough entries with respect to one department to run this query. So, I have added few more entries to run this query.]

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E115', 'Meghashri Saha', 'PR', 'OFF', 'F', 'New P.O. Road', 'Pune', 'Maharashtra', '421345',70000,DATE '2020-04-03');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT)VALUES('E116', 'Priyanka Roy', 'MN','F', 'Pali Hill', 'Mumbai', 'Maharashtra', '400025', 65000, DATE '2019-09-02');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E117', 'Sudip Ghosh', 'PR', 'OFF', 'M', 'Ashutosh Mukherjee Road', 'Kolkata', 'West Bengal', '700020',65000, DATE '2019-02-09')

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E118', 'Arijit Maity', 'PR', 'EXE', 'M', '20B Narkeldanga', 'Kolkata','West Bengal', '711097', 45000, DATE '2020-07-03'); 1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E119', 'Sneha Das', 'PR', 'CL', 'F', '5 Canning Street', 'Jalpaiguri', 'West Bengal', '723098', 35000, DATE '2021-08-03');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E120', 'Imanur Rahaman', 'PR', 'OFF', 'M', '128 Danesh Shekh Lane', 'Howrah', 'West Bengal', '711204', 70000, DATE '2019-10-09');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E121', 'Riya Parvin', 'PR', 'MN', 'F', 'Pune Lavasa Campus', 'Pune', 'Maharashtra', '400087', 65000, DATE '2020-09-03');

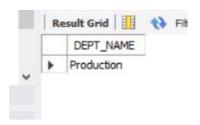
1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E122', 'Reshmi Kundu', 'PR', 'Cl', 'F', 'Lajpat Nagar', 'Delhi', 'Delhi', '100087', 25000, DATE '2021-07-03');

1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES ('E123', 'Manshi Shaw', 'PR', 'EXE', 'F', 'IT Building, Yojana Bhawan', 'Jaipur', 'Rajasthan', '302005',50000, DATE '2019-08-06');

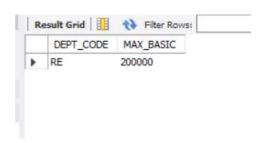
SELECT d.DEPT_NAME FROM DEPARTMENT d WHERE (SELECT COUNT(*) FROM EMPLOYEE e WHERE e.DEPT_CODE = d.DEPT_CODE) > 9;



• Question 11: Find the department code in which employee with highest Basic works.

Solution:

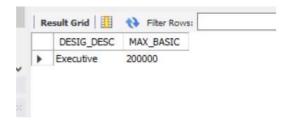
SELECT DEPT_CODE, BASIC AS MAX_BASIC FROM EMPLOYEE WHERE BASIC = (SELECT MAX(BASIC) FROM EMPLOYEE);



• Question 12: Find the Designation description of the employee withhighest basic.

Solution:

SELECT d.DESIG_DESC , e.BASIC AS MAX_BASIC FROM EMPLOYEE e, DESIGNATION d WHERE e.DESIG_CODE = d.DESIG_CODE AND e.BASIC = (SELECT MAX(BASIC) FROM EMPLOYEE);



• Question 13: Find the no. of managers in each department.

Solution:

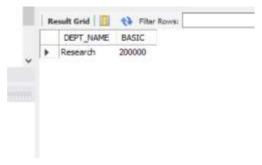
SELECT d.DEPT_NAME, COUNT(*) AS NO_OF_MANAGER FROM EMPLOYEE e, DEPARTMENT d WHERE e.DEPT_CODE = d.DEPT_CODE AND e.DESIG_CODE = (SELECT DESIG_CODE FROM DESIGNATIONWHERE DESIG_DESC = 'Manager') GROUP BY d.DEPT_NAME;



• Question 14: Find the maximum basic from EMP table without usingMAX().

Solution:

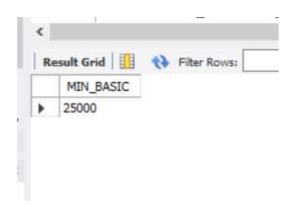
SELECT DISTINCT BASIC AS MAX_BASIC FROM EMPLOYEE e WHERE e.BASIC >= ALL(SELECT BASIC FROM EMPLOYEE);



• Question 15: Find the minimum basic from EMP table without usingMIN().

Solution:

SELECT DISTINCT BASIC AS MIN_BASIC FROM EMPLOYEE e WHERE e.BASIC <= ALL(SELECT BASIC FROM EMPLOYEE);

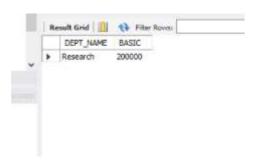


• Question 16: Find the name of the department with highest total basic. Do the same for highest average basic and maximum no. ofemployee.

Solution:

Highest Total Basic:

SELECT d.DEPT_NAME, e.BASIC FROM EMPLOYEE e, DEPARTMENT d WHERE e.DEPT_CODE = d.DEPT_CODE AND e.BASIC >= ALL(SELECT BASIC FROM EMPLOYEE);



Highest Average Basic:

SELECT DEPT_NAME, BASIC AS AVERAGE_BASIC FROM (SELECT DEPT_NAME, AVG(BASIC) AS BASIC FROM EMPLOYEE e, DEPARTMENT d WHERE e.DEPT_CODE = d.DEPT_CODE GROUP BY DEPT_NAME)WHERE BASIC = (SELECT MAX(BASIC) FROM (SELECT DEPT_NAME, AVG(BASIC) AS BASIC FROM EMPLOYEE e, DEPARTMENT d WHERE e.DEPT_CODE = d.DEPT_CODE GROUP BY DEPT_NAME));

DEPT_NAME AVERAGE_BASIC
-------Personnel
55000
Purchase 55000

Maximum Number of Employee:

SELECT DEPT_NAME, EMP_NO AS MAXIMUM_NO_OF_EMPLOYEEFROM (SELECT DEPT_NAME, COUNT(EMP_CODE) AS EMP_NO FROM EMPLOYEE e DEPARTMENT d WHERE e.DEPT_CODE = d.DEPT_CODE GROUP BYDEPT_NAME) WHERE EMP_NO = (SELECT MAX(EMP_NO) FROM EMPLOYEE e, DEPARTMENT dWHERE e.DEPT_CODE = d.DEPT_CODE GROUP BY DEPT_NAME));

• Question 17: Insert same rows into EMP table with designation codenot existing in DESIGNATION table.

Solution:

INSERT INTO EMPLOYEE(EMP_CODE,EMP_NAME, DEPT_CODE, DESIG_CODE, SEX,ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES('E24','Sarthak dubey', 'PUR', 'SALES', 'M', '45B Gariahat Road', 'Kolkata', 'West Bengal','700034',45000,DATE '2019-02-01'); 1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE,EMP_NAME, DEPT_CODE, DESIG_CODE,SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT)VALUES ('E125','Saheli Das', 'PER', 'SALES', 'F', 'Budhdha Marg', 'Patna', 'Bihar', '600078',30000, DATE '2020-08-13'); 1 row(s) affected

INSERT INTO EMPLOYEE(EMP_CODE,EMP_NAME, DEPT_CODE, DESIG_CODE,SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT)VALUES ('E126', 'Kastury Ganguli', 'OFF', 'REPRESENTATIVE', 'F', 'Panjiyan Bhawan','Kota', 'Rajasthan', '305001', 45000,DATE '2019-08-10'); 1 row(s) affected

• Question 18: Delete the rows from EMP table with invalidDESIG_CODE.

Solution:

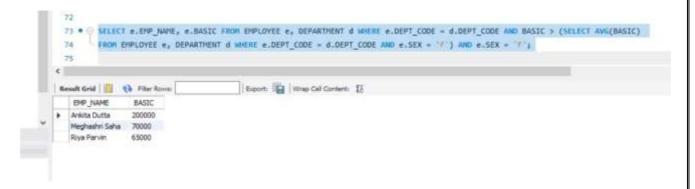
DELETE EMPLOYEE WHERE DESIG_CODE NOT IN (SELECT DESIG_CODE FROM DESIGNATION);

3 row(s) affected

• Question 19. Find the name of the female employees with basic greater than the average basic of their respective department

Solution:

SELECT e.EMP_NAME, e.BASIC FROM EMPLOYEE e, DEPARTMENT d WHERE e.DEPT_CODE = d.DEPT_CODE AND BASIC > (SELECT AVG(BASIC)FROM EMPLOYEE e, DEPARTMENT d WHERE e.DEPT_CODE = d.DEPT_CODE AND e.SEX = 'F') AND e.SEX = 'F';



Question 20: Find the number of female managers

Solution:

SELECT COUNT(*) AS NO_OF_FEMALE_MANAGER FROM

EMPLOYEE e, DESIGNATION d WHERE e.DESIG_CODE =

d.DESIG_CODE AND e.SEX = 'F' AND d.DESIG_CODE = 'MN';



ASSIGNMENT 3

• Problem 1:

In an organization, number of departments exists. Each department has a name & unique code. Number of employees work in each department. Each employee has unique employee code.

Detailed information like name, address, city, basic, date of join are also stored. In a leave register for each employee leave records are kept showing leave type (CL/EL/ML etc.), fromdate and to- date. When an employee retires or resigns then all the leave information pertaining to him are also deleted. Basic salary must be within Rs.5000 to Rs.9000. A department cannot be deleted if any employee record refers to it. Valid grades are A/B/C. Employee name must be in uppercase only. Default value for joining date is system date. Design & implement the tables with necessary constraints to support the scenario depicted above.

Solution:

CREATE TABLE DEPARTMENT(
DEPT_CODE char(10) PRIMARY KEY,
DEPT_NAME char(30),
NO_OF_EMPLOYEE INTEGER);

0 row(s) affected

CREATE TABLE EMPLOYEE(

EMP_CODE char(10) PRIMARY KEY,

DEPT CODE char(10),

EMP_NAME char(30) NOT NULL CONSTRAINT force_upcase CHECK(BINARY EMP_NAME = UPPER(EMP_NAME)),

ADDRESS char(50),

CITY char(20),

BASIC NUMERIC(5) CONSTRAINT salary_range CHECK(BASIC BETWEEN 5000 AND 9000),

JOIN DATE DATE DEFAULT(CURRENT DATE),

GRADE char(1) CHECK(GRADE IN ('A', 'B', 'C')),

CONSTRAINT DEPT_FOREIGN_KEY FOREIGN KEY(DEPT_CODE) REFERENCES DEPARTMENT(DEPT_CODE));

0 row(s) affected

CREATE TABLE LEAVE_REG(
RECORD_ID char(5) PRIMARY KEY,
EMP_CODE char(10),
TYPE char(2),

FROM_DATE DATE,
TO_DATE DATE,
CONSTRAINT VALID_TYPE CHECK(TYPE IN ('CL', 'EL', 'ML')),
FOREIGN KEY(EMP_CODE) REFERENCES EMPLOYEE(EMP_CODE));

0 row(s) affected

• **Problem 2:**

Try to violate the constraints that you have implemented in the table & note, what happens. [Try with suitable INSERT/UPDATE/DELETE instruction]

Solution:

```
INSERT INTO DEPARTMENT VALUES('D1', 'ACCOUNTS', 5);
1 row(s) affected

INSERT INTO DEPARTMENT VALUES('D2', 'MARKETING', 12);
1 row(s) affected

INSERT INTO DEPARTMENT VALUES('D3', 'DEVELOPMENT', 10);
1 row(s) affected

INSERT INTO DEPARTMENT VALUES('D4', 'SALES', 20);
1 row(s) affected

INSERT INTO DEPARTMENT VALUES('D5', 'PURCHASE', 18);
1 row(s) affected

INSERT INTO EMPLOYEE VALUES('E1', 'D2', 'Dhrub', '20B Old P.O. Road', 'Kolkata', 5500, '2020-01-01', 'B');
```

Error Code: 3819. Check constraint 'force upcase' is violated.

NOTE: Here I have intentionally violated my mentioned constraint that employee names must be in uppercase letters. I note that I get an error saying "Check constraint 'force_upcase' is violated."

```
INSERT INTO EMPLOYEE VALUES('E1', 'D2', 'DHRUV', '20B Old P.O. Road', 'Kolkata', 5500, '2020-01-01', 'B'); 1 row(s) affected INSERT INTO EMPLOYEE VALUES('E2', 'D1', 'KAVYA', '35 Pali Hill', 'Mumbai', 6000, '2020-06-01', 'A'); 1 row(s) affected
```

INSERT INTO EMPLOYEE VALUES('E3', 'D2', 'PRIYA', '14A Gopal Banerjee Lane','Kolkata',7000,'2020-03-01', 'C'); 1 row(s) affected

INSERT INTO EMPLOYEE VALUES('E4', 'D5', 'DIVYA', 'Lajpat Nagar', 'Delhi', 6500, '2019-08-02', 'B');
1 row(s) affected

INSERT INTO EMPLOYEE VALUES ('E5', 'D3', 'JIGYASA', 'New Palace Lane', 'Pune', 8000, '2019-04-01', 'E'); Error Code: 3819. Check constraint 'employee chk 1' is violated.

NOTE: Here I have intentionally violated my mentioned constraint that Valid grades are A/B/C. I note that I get an error saying "Check constraint 'employee_chk_1' is violated."

INSERT INTO EMPLOYEE VALUES('E5', 'D3', 'JIGYASA', 'New Palace Lane', 'Pune', 8000, '2019-04-01', 'A'); 1 row(s) affected

INSERT INTO EMPLOYEE VALUES('E6', 'D3', 'SOURAV', '51A Shyama Prosad Road', 'Kolkata', 5000, '2020-09-15', 'C'); 1 row(s) affected

INSERT INTO EMPLOYEE VALUES('E7', 'D4', 'SHREYA', 'Mahatma Gandhi Sarani', 'Gujarat', 8000, '2020-10-05', 'A'); 1 row(s) affected

INSERT INTO EMPLOYEE VALUES('E7', 'D4', 'ANWESHA', 'Hill Road','Darjeeling',2000,'2019-05-02', 'B');

Error Code: 3819. Check constraint 'salary_range' is violated.

INSERT INTO EMPLOYEE VALUES('E8', 'D4', 'ANWESHA', 'Hill Road', 'Darjeeling', 5500, '2019-05-02', 'B');

NOTE: Here I have intentionally violated my mentioned constraint that BASICmust be between 5000-9000. I note that I get an error saying "Check constraint 'salary_range' is violated".

INSERT INTO EMPLOYEE VALUES('E8', 'D4', 'ANWESHA', 'Hill Road', 'Darjeeling', 5500, '2019-05-02', 'B');

1 row(s) affected

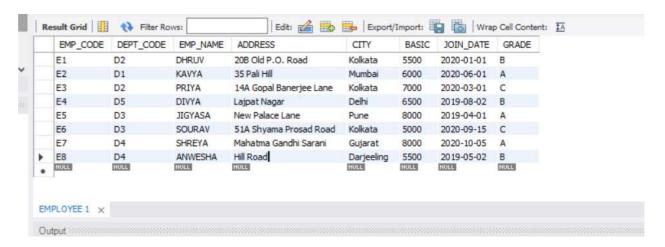
INSERT INTO LEAVE_REG VALUES('L1', 'E4', 'EL', '2020-03-01', '2020-06-01'); 1 row(s) affected

INSERT INTO LEAVE_REG VALUES('L2', 'E2', 'ML', '2020-07-01', '2020-09-01'); 1 row(s) affected

INSERT INTO LEAVE_REG VALUES('L3', 'E5', 'ML', '2019-11-15', '2019-12-10'); 1 row(s) affected

INSERT INTO LEAVE_REG VALUES('L4', 'E7','CL', '2020-03-01','2020-04-01'); 1 row(s) affected

SELECT * FROM EMPLOYEE;



• Problem 3:

- 3. a) Create a view showing employee code, name, dcode & Basic For a particular department.
- b) Try to ensure a row into the view with valid department & also with invalid ones.
- c) Find the newly inserted row in the table From which view was created.
- d) Try to increment basic by Rs.100/-
- e) Check it in the original table.
- f) Delete the view.

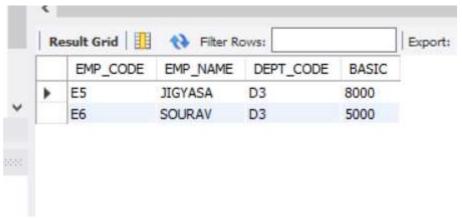
Solution:

(a) CREATE VIEW EMPLOYEE_DETAILS AS SELECT EMP_CODE, EMP_NAME, DEPT_CODE, BASIC FROM EMPLOYEE WHERE DEPT_CODE = 'D3';

0 row(s) affected

SELECT * FROM EMPLOYEE_DETAILS;

2 row(s) returned



(b) INSERT INTO EMPLOYEE_DETAILS VALUES('E9', 'ANANYA', 'D7', 6700);

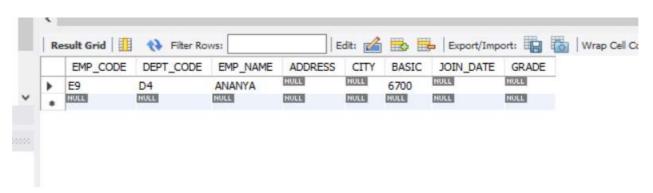
Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails ('ass3'.'employee', CONSTRAINT 'DEPT_FOREIGN_KEY' FOREIGN KEY ('DEPT_CODE') REFERENCES 'department' ('DEPT_CODE'))

NOTE: Here I have intentionally tried to insert a row in the view with an invalid DEPT_CODE. I note that I have an error saying integrity constraintviolated. This happens because there is no record in the Department tablecorresponding to the DEPT_CODE 'D7'.

INSERT INTO EMPLOYEE_DETAILS VALUES('E9', 'ANANYA', 'D4', 6700); 1 row(s) affected

(c) SELECT * FROM EMPLOYEE WHERE EMP_CODE = 'E9';

1 row(s) returned



(d) UPDATE EMPLOYEE_DETAILS SET BASIC = BASIC + 100;

2 row(s) affected Rows matched: 2 Changed: 2 Warnings: 0

(e) SELECT * FROM EMPLOYEE_DETAILS;

2 row(s) returned



SELECT * FROM EMPLOYEE;



- (f) DROP VIEW EMPLOYEE_DETAILS;
- 0 row(s) affected

• Problem 4:

- a. Create a view showing Emp_Code, name, Dept_Name, basic, leave type, From date & todate.
- b. Try to insert a row in the view. Check what happens?
- c. Try to increment basic by Rs.100.
- d. Delete the view.

Solution:

- a) CREATE VIEW EMPLOYEE_LEAVE_DETAILS AS SELECT e.EMP_CODE, e.EMP_NAME, e. BASIC, e.DEPT_CODE, d.DEPT_NAME, l.TYPE, l.FROM_DATE, l.TO_DATE FROM EMPLOYEE e, DEPARTMENT d, LEAVE_REG l WHERE e.DEPT_CODE = d.DEPT_CODE AND e.EMP_CODE = l.EMP_CODE;
 - 0 row(s) affected

b) INSERT INTO EMPLOYEE_LEAVE_DETAILS VALUES ('E10', 'PRAKASH', 5600,'D3', 'DEVELOPMENT', 'CL','02-JAN-2022', '20JAN-2022');

Error Code: 1394. Can not insert into join view 'ass3.employee_leave_details' without fields list

NOTE: Here I have tried to insert a row in the view EMPLOYEE_LEAVE_DETAILS and I have faced an error. This action is not possible as I am trying to insert some values in three tables simultaneously of which two table's Primary Key is not mentioned.

c) UPDATE EMPLOYEE_LEAVE_DETAILS SET BASIC = BASIC + 100;

4 row(s) affected Rows matched: 4 Changed: 4 Warnings: 0

d) DROP VIEW EMPLOYEE_LEAVE_DETAILS;

0 row(s) affected

• Problem 5:

- (a) Create a table having Emp_code, Name, Dept_name, & basic From the existing tables alongwith the records of the employee who are in a particular department (say, d1) and with a basic Rs. 7000/-
- (b) From the existing table, add the employees with the basic salary greater than or equal to 7000/-
- (c) Alter the table to add a net pay column.
- (d) Replace net pay with 1.5* Basic.
- (e) Try to remove the net net pay column. [It may require no. of steps]

Solution:

a) CREATE TABLE PERSONNEL(
EMP_CODE char(10) PRIMARY KEY, EMP_NAME char(30), DEPT_NAME char(30), BASIC NUMERIC(5))
AS SELECT EMP_CODE, EMP_NAME, DEPT_NAME, BASIC FROM EMPLOYEE, DEPARTMENT
WHERE EMPLOYEE.DEPT_CODE = DEPARTMENT.DEPT_CODE AND BASIC = 7000 AND DEPARTMENT.DEPT_CODE = 'D3';

0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0

b) INSERT INTO PERSONNEL SELECT EMP_CODE, EMP_NAME, DEPT_NAME, BASIC FROM EMPLOYEE, DEPARTMENT WHERE EMPLOYEE.DEPT_CODE = DEPARTMENT.DEPT_CODE AND BASIC >= 7000 AND EMP_CODE NOT IN (SELECT DISTINCT EMP_CODE FROM PERSONNEL);

3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0

c) ALTER TABLE PERSONNEL ADD (NET_PAY NUMERIC(9,2));

0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0

d) UPDATE PERSONNEL SET NET_PAY = 1.5 * BASIC;

3 row(s) affected Rows matched: 3 Changed: 3 Warnings: 0

e) ALTER TABLE PERSONNEL DROP COLUMN NET_PAY;

0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0

Problem 6:

Drop all the tables that you have created.

Solution:

DROP TABLE PERSONNEL;

0 row(s) affected

DROP TABLE LEAVE REG;

0 row(s) affected

DROP TABLE EMPLOYEE:

0 row(s) affected

DROP TABLE DEPARTMENT;

0 row(s) affected

ASSIGNMENT 4

Problem 1:

- (a) Create EMP table with ECODE (Primary key), ENAME, DCODE, GRADE, BASIC & JN-DT as the columns. [Except BASIC & JN-DT, all columns are of char type and site of Grade is 1.]
- (b) Insert number of rows.

Solution:

1 row created.

```
SQL> CREATE TABLE EMP(
2 ECODE char(10) PRIMARY KEY,
3 ENAME char(30),
4 DCODE char(10),
5 GRADE char(1),
6 BASIC number,
7 JN_DT DATE);
Table created.
SQL> INSERT INTO EMP VALUES('E1', 'Priya', 'D2', 'B', 5000, '02-JAN2020');
1 row created.
SQL> INSERT INTO EMP VALUES('E2', 'Manish', 'D1', 'C', 5500, '02-JAN2020');
1 row created.
SQL> INSERT INTO EMP VALUES('E3', 'Akash', 'D2', 'B', 5500, '06-FEB2020');
1 row created.
SQL> INSERT INTO EMP VALUES('E4', 'Rachna', 'D4', 'A', 7000, '06-APR2019');
1 row created.
```

SQL> INSERT INTO EMP VALUES('E5', 'Rachna', 'D3', 'B', 7500, '10AUG-2019');

```
SQL> INSERT INTO EMP VALUES('E6', 'Ritu', 'D4', 'C', 6000, '12-SEP2019'); 1 row created.
```

```
SQL> INSERT INTO EMP VALUES('E7', 'Aritra', 'D3', 'A',8000, '06-JAN2021'); 1 row created.
```

```
SQL> INSERT INTO EMP VALUES('E8', 'Piyush', 'D2', 'C', 7500, '17-0CT2021'); 1 row created.
```

```
SQL> INSERT INTO EMP VALUES('E9', 'Navin', 'D1', 'B', 6800, '13-MAR2020'); 1 row created.
```

SQL> INSERT INTO EMP VALUES('E10', 'Pritha', 'D4', 'A', 8500, '12-JUN2019'); 1 row created.

Problem 2:

Change the column heading as shown below, So that in subsequent SELECT statement newlyset heading will be shown:

ECODE EMPLOYEE CODE

ENAME NAME

DCODE DEPT.CODE JN-

DTJONING DATE

Solution:

SQL> COLUMN ECODE HEADING
'EMPLOYEE_CODE';SQL> COLUMN ENAME
HEADING 'NAME';
SQL> COLUMN DCODE HEADING
'DEPT_CODE'; SQL> COLUMN JN_DT
HEADING 'JOINING DATE';SQL> SELECT *
FROM EMP;

EMPLOYEE_C	NAME		DEPT_CODE G BASIC JOINING DATE			
		-				
E1	Priya	D2	В	5000	02-JAN-20	
E2	Manish	D1	C	5500	02-JAN-20	
E3	Akash	D2	В	5500	06-FEB-20	
E4	Rachna	D4	A	7000	06-APR-19	
E5	Rachna	D3	В	7500	10-AUG-19	
E6	Ritu	D4	С	6000	12-SEP-19	
E7	Aritra	D3	A	8000	06-JAN-21	
E8	Piyush	D2	С	7500	17-0CT-21	
E9	Navin	D1	В	6800	13-MAR-20	
E10	Pritha	D4	A	8500	12-JUN-19	

Problem 3:

Set the format of columns as mentioned below, So that in subsequent SELECT statement, valuesappear in the specified format:

Solution:

SQL> COLUMN BASIC FORMAT
'99,999';SQL> COLUMN GRADE
FORMAT A5;
SQL> ALTER SESSION SET NLS_DATE_FORMAT = 'MONTH DD,YYYY';

Session altered.

SQL> SELECT * FROM EMP;

^{*}format of BASIC is such that a value of 7000 will be shown as 7,000

^{*}Format of GRADE will be such that full column name appears in the display.

^{*}For JN-DT format is such that 01-JAN-00 will be shown as JANURY 01, 2000.

EMP NAM	LOYEE_C IE	DEPT_C	ODE	GRADE BASIC JOINING DATE	
E1	Priya	D2	В	5,000	JANUARY 02, 2020
E2	Manish	D1	С	5,500	JANUARY 02, 2020
E3	Akash	D2	В	5,500	FEBRUARY 06, 2020
E4	Rachna	D4	A	7,000	APRIL 06, 2019
E5	Rachna	D3	В	7,500	AUGUST 10, 2019
Е6	Ritu	D4	С	6,000	SEPTEMBER 12, 2019
E7	Aritra	D3	A	8,000	JANUARY 06, 2021
E8	Piyush	D2	С	7,500	OCTOBER 17, 2021
E9	Navin	D1	В	6,800	MARCH 13, 2020
E10	Pritha	D4	A	8,500	JUNE 12, 2019

Problem 4:

- (a) Show the display attributes of all the columns.
- (b) Show the display attributes of particular column.
- (c) Suppress the newly set attributes of JN-DT . Try a select statement. (d) Reset the newly set attributes of JN-DT (e) Reset the newly set attributes of all columns.
- (f) Shown the display attributes of all columns.

☐ Solution:

(a) SQL> COLUMN;

COLUMN GRADE ON

FORMAT A5

COLUMN BASIC ON

FORMAT 99,999

COLUMN JN_DT ON

HEADING 'JOINING

DATE'

COLUMN DCODE ON

HEADING

'DEPT_CODE'

COLUMN ENAME ON

HEADING 'NAME'

COLUMN ECODE ON

HEADING

'EMPLOYEE_CODE'

COLUMN result_plus_xquery ON

HEADING 'Result Sequence'

COLUMN other_plus_exp ON

FORMAT a44

COLUMN other_tag_plus_exp ON

FORMAT a29

COLUMN object_node_plus_exp ON

FORMAT a8

COLUMN plan_plus_exp

ONFORMAT a60

COLUMN parent_id_plus_exp ON

HEADING 'p'

FORMAT 990

COLUMN id_plus_exp

ONHEADING 'i'

FORMAT 990

COLUMN droptime_plus_show_recyc ON

HEADING 'DROP TIME'

FORMAT a19

COLUMN objtype_plus_show_recyc ON

HEADING 'OBJECT TYPE'

FORMAT a12

COLUMN objectname_plus_show_recyc ON

HEADING 'RECYCLEBIN NAME

FORMAT a30

COLUMN origname_plus_show_recyc ON

HEADING 'ORIGINAL NAME'

FORMAT a16

COLUMN value_col_plus_show_param ON

HEADING 'VALUE'

FORMAT a30

COLUMN name_col_plus_show_param ON

HEADING 'NAME'

FORMAT a36

COLUMN units_col_plus_show_sga

ONFORMAT a15

COLUMN name_col_plus_show_sga ON

FORMAT a24

COLUMN ERROR ON FORMAT

A65 word_wrap

COLUMN LINE/COL

ONFORMAT A8

COLUMN ROWLABEL

ONFORMAT A15

(b)

SQL> COLUMN

JN_DT;

COLUMN JN_DT

ON

HEADING 'JOINING DATE'

(c) SQL> COLUMN JN_DT

OFF;SQL> SELECT * FROM

EMP;

EMPLOYEE_C NAME DEPT_CODE GRADE BASIC JN_DT

E1 Priya D2 B 5,000 JANUARY 02, 2020 E2 Manish D1 C 5,500 JANUARY 02, 2020 E3 Akash D2 B 5,500 FEBRUARY 06, 2020 E4 Rachna A 7,000 APRIL 06, 2019 D4 E5 Rachna D3 B 7,500 AUGUST 10, 2019 E6 Ritu D4 C 6,000 **SEPTEMBER 12, 2019** E7 Aritra D3 A 8,000 JANUARY 06, 2021 E8 Piyush D2 C 7,500 OCTOBER 17, 2021 E9 MARCH 13, 2020 Navin D1 B 6,800 E10 Pritha D4 Α 8,500 JUNE 12, 2019

10 rows selected.

(d) SQL> COLUMN JN_DT
CLEAR;SQL> SELECT * FROM
EMP;

EMPLOYEE_C NAME DEPT_CODE GRADE BASIC								BASIC JN_DT	
		E1	Priya		D2		В	5,000	JANUARY 02, 2020
		E2	Manis	sh	D1		С	5,500	JANUARY 02, 2020
		E3	Akasl	1	D2		В	5,500	FEBRUARY 06,2020
	E4	Ra	chna	D4			Α	7,000	APRIL 06, 2019
	E5	Ra	chna	D3			В	7,500	AUGUST 10,2019
	E6	Rit	u	D4			С	6,000	SEPTEMBER 12,2019
	E7	Ari	itra	D3			A	8,000	JANUARY 06,2021

E8	Piyush	D2	C	7,500	OCTOB	BER 1	7, 2021
E9	Navin	D1	В	6,800	MA	RCH	13, 2020
			Α	8,500	JUNE	12,2	019

E10 Pritha

D410 rows

selected.

(e) SQL> CLEAR COLUMN; columns
clearedSQL> SELECT * FROM EMP;

ECOD E	ENAM	E DCO	DE (G BASIC	JN_DT
E1	Priya	D2	В	5000	JANUARY 02, 2020
E2	Manish	D1	С	5500	JANUARY 02, 2020
E3	Akash	D2	В	5500	FEBRUARY 06,2020
E4	Rachna	D4	A	7000	APRIL 06,2019
E5	Rachna	D3	В	7500	AUGUST 10,2019
E6	Ritu	D4	С	6000	SEPTEMBER 12,2019
E7	Aritra	D3	Α	8000	JANUARY 06,2021
E8	Piyush	D2	С	7500	OCTOBER 17,2021
E9	Navin	D1	В	6800	MARCH 13,2020
E10	Pritha	D4	A	8500	JUNE 12,2019
10 ro	ws selecte	ed.			

(f) SQL> COLUMN;

SP2-0045: * no COLUMN defined

☐ Problem 5:

. (a) Show the records from EMP table in the ascending order of DCODE. $\,$

DCODE value will be shown only for the first record of that department(same of DCODE is not repeated)

- (b) Further take measures so that, after displaying the records of a department it skips one line.
- (c) Further take measures so that records one also ordered on the basis of GRADE with in adepartment & same GRADE value is not repeated.
- (d) Take measure so that at the end of each GRADE in a department it will show average Basic for that grade in that department. At the end of each department, it will show the average & total Basic for the department. At the end of all departments it will show the overall total basic & average basic.

☐ Solution:

(a) SQL> BREAK ON DCODE; SQL> SELECT * FROM EMP ORDER BY DCODE ASC;

ECODE	ENAME	DCODE G	BASI	C JN_DT	
			-		
E2	Manish		D1	С	5500 02-JAN 4
E9	Navin			В	6800 13-MAR11
E1	Priya		D2	В	5000 02-JAN12
E3	Akash			В	5500 06-FEB12
E8	Piyush			C	7500 17-OCT 12
E5	Rachna		D3	В	7500 10-AUG-19 E7
Aritra			Α	8000 0	06-JAN12

E10	Pritha	D4	Α	8500 12-JUN-19
E4	Rachna		Α	7000 06-APR-
				19
E6	Ritu		C	6000 12-SEP-19
4.0	, ,			

10 rows selected.

(b) SQL> BREAK ON DCODE SKIP 1;

SQL> SELECT * FROM EMP ORDER BY DCODE ASC;

	ECODE	ENAME DCC	DDE G BA	ASIC			JN_DT
	E2	Manish	 D1	C	5500		02-JAN-20
E9	Navi	n			В	6800	13-MAR-20

E1	Priya	a		D2	В	5000	02-JAN-20
E3	Akas	sh			В	5500	06-FEB-20
E8	Piyu	sh			С	7500	17-OCT-21
E5	Rach	Rachna		D3		7500	10-AUG-19
	E7	Aritra		A	800 0		06-JAN-21
	E10	Pritha	D4	A	8500		12-JUN-19
	E4	Rachna		A	7000		06-APR-19
	E6	Ritu		С	6000		12-SEP-19

(c)

SQL> BREAK ON DCODE SKIP 1 ON GRADE;

SQL> SELECT * FROM EMP ORDER BY DCODE ASC, GRADE ASC;

ECOL	DE ENAME		DCOI	DE G BASIC JN_DT	.
				E9	Navin
D1	В	13-MAR-			
	680 0	20			
E2	Manish		С	5500 02-JAN- 20	
E	Priya	D2	В	5000 02-JAN-	
1	Akas			20	
E	h		С	5500 06-FEB-20	
3	Piyush			7500 17-0CT- 21	
E8					
E7	Aritra	D3	A	8000 06-JAN-21	
E5	Rachna		В	7500 10-AUG-19	
E10	Pritha	D4	A	8500 12-JUN-19	
E4	Rachna				7000 06-APR-19

E6	Ritu		С	6000 12-S	SEP-19				
10 rov	vs sel	ected.							
(d) so	(d) SQL> COLUMN GRADE FORMAT A20;								
SQL> I	BREA	K ON DCODE S	KIP 1	ON GRADE	SKIP 1;				
_	SQL> COMPUTE AVG LABEL 'AVG BASIC ON GRADE' OF BASIC ONGRADE;								
SQL> S	SELEC	CT * FROM EMF	ORD	ER BY DCOI	DE ASC, GRADE ASC	<u>;</u> ;			
	ECODE ENAME DCODE GRADE BASIC JN_DT								
]	Е9	Navin	D1	В	6800	13-MAR-20			

			AV	G BASIC ON	GRADE 6800				
	E2	Manish	D1	С	5500 0	02-JAN-20			
		**	*****	*****	*				
			A	AVG BASIC (ON GRADE 5500				
	E1	Priya	D2	В	5000	02-JAN-			
20E	3 Ak	ash			5500	06-FEB-			
20									
		****	*****	*****					
		AVG BASIC	ON GR	RADE	5250				
	E8	Piyush	Б)2 C	7500	17-0CT-21			

E7 Aritra D3 A 8000 06-JAN-21

--AVG BASIC ON GRADE 7500

	*****	***			
-	-AVG BASIC ON G	RADE	8000		
E5	Rachna	D3	В	7500	10-AUG-19
	*****	*****	****		
	AVG BASIC ON (GRADE	7500		
E10	Pritha	D4	A	8500	12-JUN-
19E4 Rac	chna			7000	06-APR-
19					
	*****	*****	****		
	AVG BASIC ON GI	RADE 7	7750		
E6	Ritu	D4	С	6000	12-SEP-19
	*****	******	****		
	AVG BASIC O	N GRA	DE 6000		

Overall Average and Overall total BASIC at the end of the table EMP:

SQL> BREAK ON REPORT SKIP 3 ON DCODE SKIP 3 ON GRADE

SKIP 1; SQL> COMPUTE AVG LABEL 'AVG BASIC ON GRADE' OF

BASIC ON GRADE;

SQL> COMPUTE AVG LABEL "AVG BASIC ON DEPT" SUM LABEL "TOTAL BASIC ON DEPT" OF BASICON DCODE;

SQL> COMPUTE AVG LABEL "AVG BASIC" SUM LABEL "TOTAL BASIC" OF

BASIC ON REPORT;SQL> SELECT * FROM EMP ORDER BY DCODE ASC, GRADE

ASC;

ECODE ENAME DCODE GRADE BASIC				JN_DT
Е9	Navin	D1 B ******	6800	13-MAR-20
AVG BASIC ON GRADE 6800				
E2	Manish	D1 C	5500	02-JAN-20
AVG BASIC ON GRADE 5500 ************				
		AVG BASIC	6150	
		TOTAL BASIC	12300	
E1	Priya	D2 B	5000	02-JAN-
20E3 Ak	ash		5500	06-FEB-
20				
_,	*	******		
AVG BASIC ON GRADE 5250				
E8	Piyush	D2 C	7500	17-0CT-
*************************** AVG BASIC ON GRADE 7500				
	k	*****		
		AVG BASIC	6000	
		TOTAL BASI	C 18000)
E7	Aritra	D3 A	8000	06-JAN-21
	**	******		
AVG BASIC ON GRADE 8000				
E5	Rachna	В	7500	10-AUG-19

BASIC ON GRADE 7500

***** AVG BASIC 7750 TOTAL BASI 15500 E10 Pritha D4 8500 12-JUN-Α 19 E4 Rachna 7000 06-APR-19 ****** AVG BASIC ON GRADE 6000 7750 E6 Ritu C 12-SEP-19 D4 ****** 6000 AVG BASIC ON GRADE ***** -----**AVG BASIC** 7166.66667 TOTAL 21500

10 rows selected.

