DBMS I LAB ASSIGNMENT (MCAP1213)
MCA 1st Year 2nd Semester
Session: 2019-2020
Problem I

Create the following tables:

1. Table Name: EMP

Column Name	Data Type	Constraints
EMPNO	NUMBER(4)	
ENAME	VARCHAR2(10)	
EJOB	VARCHAR2(9)	CLRK/MGR/A.MGR/GM/CEO, default CLRK
MGR_ID	NUMBER(4)	
BIRTH_DATE	DATE	Must be less than joining Date
SAL	NUMBER(7,2)	More than 20000,default 20001
COMM	NUMBER(7,2)	DEFAULT 1000
DEPTNO	VARCHAR2(3)	References DEPT
PRJ_ID	VARCHAR2(9)	CLRK/MGR/A.MGR/GM/CEO, default CLRK
DATE_OF_JOIN	DATE	

2. Table Name: DEPT

Column Name	Data Type	Constraints
DNO	VARCHAR2(3)	Primary Key and Starts with 'D'
DNAME	VARCHAR2(10)	Unique

3. Table Name: PROJECTS

*Combination of **DNO and PRJ_NO** is primary key*

Column Name	Data Type	Constraints
DNO	VARCHAR2(3)	References DEPT, NOT NULL
PRJ_NO	VARCHAR2(5)	Starts with 'P', NOT NULL
PRJ_NAME	VARCHAR2(10)	
PRJ_CREDITS	NUMBER(2)	Range from 1 to 10
START_DATE	DATE	
END_DATE	DATE	END_DATE > START_DATE

Perform the following Modifications:

1. *Add **EMPNO** as a primary key constraint to **EMP** table.*

2. *Add a foreign key constraint to **EMP** table on **MGR_ID** referencing **EMP**.*

3. *Modify the column **PRJ_ID** in **EMP** table as follows-*
   i) *Change the data type from VARCHAR2(9) to VARCHAR2(5) .*
   ii) *Drop the constraints on **PRJ_ID** in **EMP** table and add a foreign key constraint to **EMP** table on **(DEPTNO, PRJ_ID)** referencing **PROJECTS**. This foreign key indicates an employee from a particular department is working on which project(s).*

4. *Add a column to **DEPT** table named **LOCATIONS** with data type VARCHAR2(9).*

5. *Add **CHECK** constraint on **LOCATIONS** so that allowed values will be **BNG/MNG/MUB/HYD/CHN** and default value is **BNG**.*

Insert the following Records

In the following records, columns with **null** must be entered as **null values** only.

Insert records into EMP table

EMPNO	ENAME	EJOB	MGR_ ID	BIRTH_ DATE	SAL	COMM	DEPTNO	PRJ_ ID	DATE_OF _JOIN
100	Ravi	MGR	111	10-10-1985	32000		D1	P1	2-10-2001
102	Raviraj	CLRK	100	10-12-1980	24000		D1	P3	12-11-2000
111	Raghu	GM	150	10-12-1974	45000	15000	null	null	3-12-1985
150	Some	CEO	null	10-12-1970	60000	30000	null	null	3-12-1990
103	Ankita	A.CLRK	111	10-12-1980			D1	P1	2-10-2001
103	Amit	CLRK	111	2-10-1980		null	D1	P3	2-10-2002
125	Manu	A.MGR	150	10-12-1980			D4	P2	2-10-2002
104	Akas	CLERK	100	2-10-1980			D2	P1	2-10-2005
106	Varsa	MGR	100	2-10-1986		null	D2		2-10-1985
123	Mahesh	CLRK	106	10-12-1974	25000		D3	P2	2-10-2002
108	Tisa	CLRK	125	10-12-1970			D9		2-10-1985
103	Arun	CLRK	111	10-12-1980		null	D1	P3	2-10-2001
null	Rick	CLRK	106	10-12-1980	18000		D3	P2	10-12-1980

1. Write the reason if some records are not inserted.
2. Insert your own 5 records

Insert records into DEPT table

DNO	DNAME	LOCATIONS
D1	Marketing	CHN
D2	Research	MNG
D3	Administrator	
D4	HR	BGG
D5	IT	
Null	Corporate	HYD

1. Write the reason if some records are not inserted.
2. Insert your own 5 records.

Insert records into PROJECTS

DNO	PRJ_NO	PRJ_NAME	PRJ_CREDITS	START_DATE	END_DATE
D1	P1	Prj001	2	1-10-1980	24-12-1986
D2	P1	Prj001	2	1-10-1980	24-12-1986
D3	P2	Prj002	7	1-10-1982	24-12-1995
D1	P3	Prj003	5	1-10-1985	24-12-1999
D4	P2	Prj002	7	1-10-1982	24-12-1995

1. Insert your own 5 records

Answer the SQL Queries

SET-I

1. Display all records from EMP,DEPT and PROJECTS table
2. Display records of Employees who have salary more than 25000 or working in department D2.
3. Delete employee records working on project P2 and confirm the result. Type **ROLLBACK** to restore records back if records are deleted.
4. Delete department *Marketing* from DEPT table, confirm the result with reason. Type **ROLLBACK** to restore records back if records are deleted.
5. Delete records of employees working under Manger with ID 100 and in project P1.
6. Update the DNO of first record in PROJECTS to D5, confirm the result with reason.
7. Update the Job of employee with EmpNo 123 to MGR, salary to 35000 and his manager as 111.
8. List all employee names and their salaries, whose salary lies between 25200/- and 35200/- both inclusive.
9. List all employee names reporting to employees 100,125,150
10. List all employees whose name starts with either M or R.
11. List the name of employees whose name do not starts with M.
12. List all kind jobs available in employee table, avoid displaying duplicates.
13. List minimum, maximum, average salaries in company.
14. Display the number of employees working in each project.
15. List the Employees name and their manager's names
16. List Employees Name, their department name and Projects Name in which they are working.
17. List the employee names, salary of employees whose first character of name is R, 2nd and 3rd characters are 'v','i' and remaining characters are unknown.

SET-II

1. List the Projects name undertaken by *Marketing* Department.
2. Display current date, 53, absolute value of -45 and current date as date with format MONTH-YY.
3. Display the employees name and salary in descending order by salary.
4. List the name of departments which are working with more than 1 projects.
5. Display department name, Max salary and Min salary in each department.
6. List the employees whose experience is more than 5 years.
7. List the Employees number, Name and their Age and retirement date(assume 60 years retirement age).
8. List the Employees who born on December month.
9. List the Employees names who born on a given year.
10. List the Employees names who joined on day 12.
11. List the Employees names having service experience more than 10 years.
12. List the projects which have duration more than 1 year.
13. List the Employees Name who is working at Locations (BNG,MUB,HYD)
14. Update the COMM column of EMP table based on the SAL. Use COMM=CMM+SAL*10/100
15. List employee names, padded to right with a series of three periods and space up to a width of 30, and project credits of projects in which they are working.(Use RPAD,LPAD)
16. List the name of employees who are working in project with credit more than7 and display name with only first letter capital and replace the character ‘a’(if present) in the name by ‘$’.
17. Display department Name and Total amount spent on each department by the company as Salary.
18. List Employee numbers, SAL *12 (rename as ANNUAL_SAL), SAL*12 *0.1 (as TAX) , display ANNUAL_SAL and TAX in the format of $12,34,456.90.

SET-III

1. List Job category and total salary paid for the each jobs category by the company.
2. Display name of the department from which maximum number of employees are working on project P1
3. Display department names and number of CLRK working in the departments.
4. Display Employee names who are not working in any of the projects.
5. Create a View EMP_PRJ_VW to display records of employees of ‘marketing’ department and project in which they are working.
6. Display employee names and projects in which they are working using View EMP_PRJ_VW
7. Insert a record into View EMP_PRJ_VW and check the underlying tables for result and confirm result with reason.
8. Create an unique index on the column name DNAME on DEPT table
9. Create an index on the columns (name and job) on EMP table.
10. Create a Sequence STUD_SEQ which starts from 100 to 999 with increments of 3.
11. Create a table STUD with columns ROLLNO and Name. Insert ROLLNO values by taking values from STUD_SEQ.
12. Display Location of department and Employees name working in Marketing department or Research (using set operator).
13. Display the names of the Departments undertaking both projects P1 and P3 (using set operator).

SET-IV

1. Display the details of those who do not have any person working under them.
2. Display those who are not managers and who are manager any one.
3. Display those employees whose salary is more than 3000 after giving 20% increment.
4. Display the name,monthly salary,daily salary and Hourly salary for employees.Assume that the Sal column in the table is the monthly salary,that there are 22 working days in a month,and that there are 8 working hours in a day.Rename the columns as monthly,daily and hourly.
5. Display employee name, dept name, salary and comm. For those sal in between 32000 to 50000 while location is BNG.
6. Display those employees whose salary is greater than his manager salary.
7. Display those employees who are working in the same dept where his manager is working.
8. Display employees name for the dept no D1 or D3 while joined the company before 31-dec-82.
9. Update the salary of each employee by 10% increment who are not eligible for commission.
10. Find out the top 5 earners of the company.
11. Display name of those employees who are getting the highest salary in their department.
12. Select count of employees in each department where count greater than 3.
13. Display department name where at least 3 employee are working, display only department name.
14. Display those managers name whose salary is more than average salary of employees working under him/her.
15. Display those employees whose salary is **odd** value.
16. List of employees who do not get any commission.
17. Display those employees whose salary contains at least 3 digits.
18. Delete those employees who joined the company 10 years back from today.
19. Display the name of employees who joined on the same date.
20. Display the manager who is having maximum number of employees working under him.

SET -V

1. Print a list of employees displaying “Just Salary” if more than 25000 if exactly 25000 display “On target” if less ‘Below target’.
2. Define a variable representing the expression used to calculate on employees total Annual Remuneration.
3. Find out how many managers are there without listing them.
4. List out the lowest paid employees working for each manager; exclude any groups where minimum salary is less than Rs. 21000. Sort the output by salary.
5. Find out the all employees who joined the company before their managers.
6. List out the all employees by name and number along with their manager’s name and number; also display “KING” who has no manager.
7. Find out the employees who earn the highest salary in each job type. Sort in descending salary order.
8. Find out the employees who earn the minimum salary for their job in ascending order.
9. In which year did most people join the company. Display the year and number of employees.
10. Display average salary for each department.
11. Display employees who can earn more than lowest salary in department no D3.
12. Display the half of the employee name in upper case & remaining lower case?
13. Create a copy of EMP table without any data(records)
14. List the details of the employees in Departments D1 and D2 in alphabetical order of Name.
15. List all rows from EMP table, by converting the null values in COMM column to 0.
16. Find the average salary per job in each Dept.
17. Find the job with the highest average salary.