

Term work on
Data Base Management System Lab (PCS 503)
Submitted in partial fulfillment of the requirement for the V semester

Bachelor of Technology by

Karan Tiwari

University Roll No:

2161200

Under the Guidance of

Ms. Senam Pandey

Assistant Professor

Department of CSE



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

GRAPHIC ERA HILL UNIVERSITY

BHIMTAL CAMPUS

2023-2024

INDEX

[illegible]

EXPERIMENT - 1

AIM: Implement the following commands:

- Create
- Alter
- Truncate
- Drop

Q1. Create the above schema with the help of create command.

Queries:

- create database lab1;
- show databases;

Output:

```
+-----+
| Database |
+-----+
| amazon_db |
| flipkart_db |
| information_schema |
| lab1 |
| mysql |
| performance_schema |
| sys |
+-----+
```

- create table student (Name varchar(255), Student Number int, Class char(255), Major char(255));
- create table course (CourseName varchar(255), CourseNumber int, CreditHours int, Department char(255));
- create table prerequisite (CourseNumber int, Prerequisite Number int);
- create table section (Section Identifier char(5), CourseNumber int, Semester int, Year int, Instructor char(255));
- create table grade_report (Student Number int, Section Identifier char(5), Grade char(2));
- show tables;

○ **Output:**

Tables_in_lab1
course
grade_report
prerequisite
section
student

Q2. Use Insert Command for record at least 10 records in each table.

Queries:

- insert into student (Name, Student Number, Class, Major) values ('John', 123, '12', 'Bio'), ('Smith', 234, '11', 'Hist rotty'), ('Davis', 345, '10', 'Science'), ('Jessica', 456, '9', 'Maths'), ('Lee', 567, '8', 'Chemistry'), ('David', 678, '7', 'Economics'), ('Taylor', 789, '6', 'Maths'), ('Mart', 890, '5', 'Psychology'), ('Kevin', 901, '8', 'Politics'), ('Robert', 0 12, '12', 'Physics');
- select * from student;

Output:

Name	StudentNumber	Class	Major
John	123	12	Bio
Smith	234	11	Histroty
Davis	345	10	Science
Jessica	456	9	Maths
Lee	567	8	Chemistry
David	678	7	Economics
Taylor	789	6	Maths
Mart	890	5	Psychology
Kevin	901	8	Politics
Robert	12	12	Physics

- insert into course values
('Quantum Mechanics', 101, 3, 'Physics'),
('Digital Marketing', 102, 4, 'Marketing'),
('World History', 103, 4, 'History'),
('DSA', 104, 5, 'CSE'),
('Writing', 105, 3, 'English'),
('EVS', 106, 2, 'EVSS'),
('Intro to Psychology', 107, 3, 'Psychology'),
('Business Ethics', 108, 3, 'Business'),
('Intro to Sociology', 109, 4, 'Sociology'),
('French', 110, 3, 'Arts');
- select * from course;

Output:

CourseName	CourseNumber	CreditHours	Department
Quantum Mechanics	101	3	Physics
Digital Marketing	102	4	Marketing
World History	103	4	History
DSA	104	5	CSE
Writing	105	3	English
EVS	106	2	EVSS
Intro to Psychology	107	3	Psychology
Business Ethics	108	3	Business
Intro to Sociology	109	4	Sociology
French	110	3	Arts

- insert into prerequisite values (101,1), (102,2), (103,3), (104,4), (105,5),
(106,6), (107,7), (108,8), (109,9), (110,10);
- select * from prerequisite;

Output:

CourseNumber	PrerequisiteNumber
101	1
102	2
103	3
104	4
105	5
106	6
107	7
108	8
109	9
110	10

- insert into section values
 ('A', 101, 1, 2021, 'Sarah'), ('B', 102, 2, 2021, 'Michael'),
 ('A', 103, 2, 2022, 'Jennifer'), ('C', 104, 1, 2023, 'Smith'),
 ('D', 105, 3, 2021, 'Emily'), ('B', 106, 4, 2020, 'Brown'),
 ('A', 107, 2, 2021, 'Wilson'), ('C', 108, 3, 2022, 'Christopher'),
 ('D', 109, 3, 2020, 'Laura'), ('B', 110, 1, 2023, 'Daniel');
- select * from section;

Output:

SectionIdentifier	CourseNumber	Semester	Year	Instructor
A	101	1	2021	Sarah
B	102	2	2021	Michael
A	103	2	2022	Jennifer
C	104	1	2023	Smith
D	105	3	2021	Emily
B	106	4	2020	Brown
A	107	2	2021	Wilson
C	108	3	2022	Christopher
D	109	3	2020	Laura
B	110	1	2023	Daniel

- insert into grade_report values
 (123, 'A', 'O'), (234, 'B', 'A'),
 (345, 'C', 'A'), (456, 'A', 'O'),
 (567, 'B', 'A'), (678, 'A', 'B'),
 (789, 'D', 'A'), (890, 'C', 'B'),
 (901, 'C', 'B'), (12, 'B', 'O');
- select * from grade_report;

Output:

StudentNumber	SectionIdentifier	Grade
123	A	O
234	B	A
345	C	A
456	A	O
567	B	A
678	A	B
789	D	A
890	C	B
901	C	B
12	B	O

Q3. Modify schema with use of drop and add command.

Queries:

- alter table grade_report add status char(10);
- select * from grade_report;

Output:

StudentNumber	SectionIdentifier	Grade	status
123	A	O	NULL
234	B	A	NULL
345	C	A	NULL
456	A	O	NULL
567	B	A	NULL
678	A	B	NULL
789	D	A	NULL
890	C	B	NULL
901	C	B	NULL
12	B	O	NULL

- alter table grade_report drop status;
- select * from grade_report;

Output:

StudentNumber	SectionIdentifier	Grade
123	A	O
234	B	A
345	C	A
456	A	O
567	B	A
678	A	B
789	D	A
890	C	B
901	C	B
12	B	O

Q4. At last, delete prerequisite data record and delete grade table from database.

Queries:

- truncate table prerequisite;
- select * from prerequisite;

Output:

```
mysql> truncate table prerequisite;  
Query OK, 0 rows affected (0.03 sec)  
  
mysql> select * from prerequisite;  
Empty set (0.00 sec)
```

- drop table grade_report;
- show tables;

Output:

```
+-----+  
| Tables_in_lab1 |  
+-----+  
| course         |  
| prerequisite    |  
| section        |  
| student        |  
+-----+
```


EXPERIMENT – 2

AIM: Create Table to store details as shown below and write statements for following queries based on table.

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	JOINING_DATE	JOB_ID	SALARY	DEPARTMENT_ID
▶	100	Gerald	Cambrault	34675	AD_PRES	5500	10
	101	Renske	Ladwig	34837	AD_VP	15000	20
	102	Janette	King	35230	AD_VP	7000	20
	103	Sarath	Sewall	35477	IT_PROG	12000	30
	104	William	Gietz	35627	IT_PROG	5100	30
	105	Jennifer	Whalen	35662	IT_PROG	4900	30
	106	Britney	Everett	35733	IT_PROG	5800	30
	107	Anthony	Cabrio	35788	IT_PROG	5600	30
	108	Alexis	Bull	35861	FI_MGR	7500	40
	109	Adam	Fripp	36033	FI_ACCOUNT	8000	40
	110	James	Marlow	36066	FI_ACCOUNT	9000	50
	111	James	Landry	36174	FI_ACCOUNT	8500	50
	112	Payam	Kaufling	36260	FI_ACCOUNT	9500	50
	113	Shelly	Higgins	36480	FI_ACCOUNT	8500	50
	114	Shanta	Vollman	36501	PU_MAN	10500	50
	115	Irene	Mikkilineni	36506	PU_CLERK	10000	50
	116	Mozhe	Arkinson	36593	PU_CLERK	9500	50

Q1. Create above table.

Queries:

- create table emp (
EMPLOYEE_ID INT(3),
FIRST_NAME CHAR(30),
LAST_NAME CHAR(30),
JOINING_DATE INT(5),
JOB_ID CHAR(30),
SALARY INT(7),
DEPARTMENT_ID INT(2)
);

- insert into emp values
 (100,'Gerald','Cambrault',34675,'AD_PRES',5500,10),
 (101,'Renske','Ladwig',34837,'AD_VP',15000,20),
 (102,'Janette','King',35230,'AD_VP',7000,20),
 (103,'Sarath','Sewall',35477,'IT_PROG',12000,30),
 (104,'William','Gietz',35627,'IT_PROG',5100,30),
 (105,'Jennifer','Whalen',35662,'IT_PROG',4900,30),
 (106,'Britney','Everett',35733,'IT_PROG',5800,30),
 (107,'Anthony','Cabrio',35788,'IT_PROG',5600,30),
 (108,'Alexis','Bull',35861,'FI_MGR',7500,40),
 (109,'Adam','Fripp',36033,'FI_ACCOUNT',8000,40),
 (110,'James','Marlow',36066,'FI_ACCOUNT',9000,50),
 (111,'James','Landry',36174,'FI_ACCOUNT',8500,50),
 (112,'Payam','Kaufling',36260,'FI_ACCOUNT',9500,50),
 (113,'Shelly','Higgins',36480,'FI_ACCOUNT',8500,50),
 (114,'Shanta','Vollman',36501,'PU_MAN',10500,50),
 (115,'Irene','Mikkilineni',36506,'PU_CLERK',10000,50),
 (116,'Mozhe','Arkinson',36593,'PU_CLERK',9500,50);
- Select * from emp;

Output:

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	JOINING_DATE	JOB_ID	SALARY	DEPARTMENT_ID
100	Gerald	Cambrault	34675	AD_PRES	5500	10
101	Renske	Ladwig	34837	AD_VP	15000	20
102	Janette	King	35230	AD_VP	7000	20
103	Sarath	Sewall	35477	IT_PROG	12000	30
104	William	Gietz	35627	IT_PROG	5100	30
105	Jennifer	Whalen	35662	IT_PROG	4900	30
106	Britney	Everett	35733	IT_PROG	5800	30
107	Anthony	Cabrio	35788	IT_PROG	5600	30
108	Alexis	Bull	35861	FI_MGR	7500	40
109	Adam	Fripp	36033	FI_ACCOUNT	8000	40
110	James	Marlow	36066	FI_ACCOUNT	9000	50
111	James	Landry	36174	FI_ACCOUNT	8500	50
112	Payam	Kaufling	36260	FI_ACCOUNT	9500	50
113	Shelly	Higgins	36480	FI_ACCOUNT	8500	50
114	Shanta	Vollman	36501	PU_MAN	10500	50
115	Irene	Mikkilineni	36506	PU_CLERK	10000	50
116	Mozhe	Arkinson	36593	PU_CLERK	9500	50

Q2. Update PU_CLERK to MANAGER.

Queries:

- update emp set job_id="Manager" where job_id="pu_clerk";
- show * from emp;

Output:

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	JOINING_DATE	JOB_ID	SALARY	DEPARTMENT_ID
100	Gerald	Cambrault	34675	AD_PRES	5500	10
101	Renske	Ladwig	34837	AD_VP	15000	20
102	Janette	King	35230	AD_VP	7000	20
103	Sarath	Sewall	35477	IT_PROG	12000	30
104	William	Gietz	35627	IT_PROG	5100	30
105	Jennifer	Whalen	35662	IT_PROG	4900	30
106	Britney	Everett	35733	IT_PROG	5800	30
107	Anthony	Cabrio	35788	IT_PROG	5600	30
108	Alexis	Bull	35861	FI_MGR	7500	40
109	Adam	Fripp	36033	FI_ACCOUNT	8000	40
110	James	Marlow	36066	FI_ACCOUNT	9000	50
111	James	Landry	36174	FI_ACCOUNT	8500	50
112	Payam	Kaufling	36260	FI_ACCOUNT	9500	50
113	Shelly	Higgins	36480	FI_ACCOUNT	8500	50
114	Shanta	Vollman	36501	PU_MAN	10500	50
115	Irene	Mikkilineni	36506	Manager	10000	50
116	Mozhe	Arkinson	36593	Manager	9500	50

Q3. Change JOINING_DATE of employee to 5678 where DEPARTMENT_ID =30

Queries:

- update emp set joining_date=5678 where department_id=30;
- select * from emp;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	JOINING_DATE	JOB_ID	SALARY	DEPARTMENT_ID
100	Gerald	Cambrault	34675	AD_PRES	5500	10
101	Renske	Ladwig	34837	AD_VP	15000	20
102	Janette	King	35230	AD_VP	7000	20
103	Sarath	Sewall	5678	IT_PROG	12000	30
104	William	Gietz	5678	IT_PROG	5100	30
105	Jennifer	Whalen	5678	IT_PROG	4900	30
106	Britney	Everett	5678	IT_PROG	5800	30
107	Anthony	Cabrio	5678	IT_PROG	5600	30
108	Alexis	Bull	35861	FI_MGR	7500	40
109	Adam	Fripp	36033	FI_ACCOUNT	8000	40
110	James	Marlow	36066	FI_ACCOUNT	9000	50
111	James	Landry	36174	FI_ACCOUNT	8500	50
112	Payam	Kaufling	36260	FI_ACCOUNT	9500	50
113	Shelly	Higgins	36480	FI_ACCOUNT	8500	50
114	Shanta	Vollman	36501	PU_MAN	10500	50
115	Irene	Mikkilineni	36506	Manager	10000	50
116	Mozhe	Arkinson	36593	Manager	9500	50

Q4. Delete Employee where salary is less than 8000.

Queries:

- delete from emp where salary<8000;
- select * from emp;

Output:

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	JOINING_DATE	JOB_ID	SALARY	DEPARTMENT_ID
101	Renske	Ladwig	34837	AD_VP	15000	20
103	Sarath	Sewall	5678	IT_PROG	12000	30
109	Adam	Fripp	36033	FI_ACCOUNT	8000	40
110	James	Marlow	36066	FI_ACCOUNT	9000	50
111	James	Landry	36174	FI_ACCOUNT	8500	50
112	Payam	Kaufling	36260	FI_ACCOUNT	9500	50
113	Shelly	Higgins	36480	FI_ACCOUNT	8500	50
114	Shanta	Vollman	36501	PU_MAN	10500	50
115	Irene	Mikkilineni	36506	Manager	10000	50
116	Mozhe	Arkinson	36593	Manager	9500	50

EXPERIMENT – 3

AIM: Create a Table Empl to store details as shown below and write statements for following queries based on table.

emno	ename	job	mgr	hiredate	sal	comm	deptno
8369	SMITH	CLERK	8902	1990-12-18	800.00	NULL	20
8499	ANYA	SALESMAN	8698	1991-02-20	1600.00	300.00	30
8521	SETH	SALESMAN	8698	1991-02-22	1250.00	500.00	30
8566	MAHADEVAN	MANAGER	8839	1991-04-02	2985.00	NULL	20
8654	MOMIN	SALESMAN	8898	1991-09-28	1250.00	1400.00	30
8698	BINA	MANAGER	8839	1991-05-01	2850.00	NULL	30
8882	SHIVANSH	MANAGER	8839	1991-06-09	2450.00	NULL	10
8888	SCOTT	ANALYST	8566	1991-12-09	3000.00	NULL	20
8839	AMIR	PRESIDENT	NULL	1991-11-18	5000.00	NULL	10
8844	KULDEEP	SALSEMAN	8698	1991-09-08	1500.00	0.00	30

Consider the Empl table and write SQL command to get the following.

Output:

empno	ename	job	mgr	hiredate	sal	comm	deptno
8369	SMITH	CLERK	8902	1990-12-18	800.00	NULL	20
8499	ANYA	SALESMAN	8698	1991-02-20	1600.00	300.00	30
8521	SETH	SALESMAN	8698	1991-02-22	1250.00	500.00	30
8566	MAHADEVAN	MANAGER	8839	1991-04-02	2985.00	NULL	20
8654	MOMIN	SALESMAN	8698	1991-09-28	1250.00	1400.00	30
8698	BINA	MANAGER	8839	1991-05-01	2850.00	NULL	30
8839	AMIR	PRESIDENT	NULL	1991-11-18	5000.00	NULL	10
8844	KULDEEP	SALESMAN	8698	1991-09-08	1500.00	0.00	30
8882	SHIVANSH	MANAGER	8839	1991-06-09	2450.00	NULL	10
8888	SCOTT	ANALYST	8566	1992-12-09	3000.00	NULL	20

a. Write a query to display ename and sal of employees whose sal are greater than or equal to 2200?

Query:

- Select ename, sal from empl where sal>=2200;

ename	sal
MAHADEVAN	2985.00
BINA	2850.00
AMIR	5000.00
SHIVANSH	2450.00
SCOTT	3000.00

b. Write a query to display details of employs who are not getting commission?

Query:

- select * from empl where comm is null;

Output:

empno	ename	job	mgr	hiredate	sal	comm	deptno
8369	SMITH	CLERK	8902	1990-12-18	800.00	NULL	20
8566	MAHADEVAN	MANAGER	8839	1991-04-02	2985.00	NULL	20
8698	BINA	MANAGER	8839	1991-05-01	2850.00	NULL	30
8839	AMIR	PRESIDENT	NULL	1991-11-18	5000.00	NULL	10
8882	SHIVANSH	MANAGER	8839	1991-06-09	2450.00	NULL	10
8888	SCOTT	ANALYST	8566	1992-12-09	3000.00	NULL	20

c. Write a query to display employee name and salary of those employees who don't have their salary in range of 2500 to 4000?

Query:

- Select ename, sal from empl where sal<2500 or sal>4000;

Output:

ename	sal
SMITH	800.00
ANYA	1600.00
SETH	1250.00
MOMIN	1250.00
AMIR	5000.00
KULDEEP	1500.00
SHIVANSH	2450.00

d. Write a query to display name, job and salary of employees who don't have manager?

Query:

- Select ename, job, sal from empl where mgr is null;

Output:

ename	job	sal
AMIR	PRESIDENT	5000.00

e . Write a query to display the name of employee whose name contains 'A' as third aplhabet?

Query:

- Select ename from empl where ename like '_ _ A %';

Output:

Empty set (0.00 sec)

f . Write a quey to display the name of the employee whose name contains 'T' as last aplhabet?

Query:

- Select ename from empl where ename like '% T';

Output:

ename
SCOTT

g. Write a query to display the name of employee whose name contains 'M' as First and 'L' as third alphabet?

Query:

- Select ename from empl where like 'M _ L %';

Output:

Empty set (0.00 sec)

h. Write a query to display details of employs with the text 'Not given', if commission is null?

Query:

- select *, if(comm is null,'Not Given',comm) as commission from empl;

Output:

empno	ename	job	mgr	hiredate	sal	comm	deptno	commission
8369	SMITH	CLERK	8902	1990-12-18	800.00	NULL	20	Not Given
8499	ANYA	SALESMAN	8698	1991-02-20	1600.00	300.00	30	300.00
8521	SETH	SALESMAN	8698	1991-02-22	1250.00	500.00	30	500.00
8566	MAHADEVAN	MANAGER	8839	1991-04-02	2985.00	NULL	20	Not Given
8654	MOMIN	SALESMAN	8698	1991-09-28	1250.00	1400.00	30	1400.00
8698	BINA	MANAGER	8839	1991-05-01	2850.00	NULL	30	Not Given
8839	AMIR	PRESIDENT	NULL	1991-11-18	5000.00	NULL	10	Not Given
8844	KULDEEP	SALESMAN	8698	1991-09-08	1500.00	0.00	30	0.00
8882	SHIVANSH	MANAGER	8839	1991-06-09	2450.00	NULL	10	Not Given
8888	SCOTT	ANALYST	8566	1992-12-09	3000.00	NULL	20	Not Given