DBMS - Assignment No 02

Name: Ayush Shashikant Bulbule

Roll No: 31410

Topic: Employee Schema

Queries:

Part A. Design and Develop SQL DDL statements which demonstrate the use of SQL objects such as Table, View, Index, Sequence, Synonym, different constraints etc.

DDL Commands To Create Table:

1. Create Table Department

```
mysql> use te31410_db;
Database changed
mysql> create table departments(
    -> dept_id int primary key auto_increment,
    -> dept_name varchar(45),
    -> dept_loc varchar(45));
Query OK, 0 rows affected (0.23 sec)
```

```
31410 - Ayush Bulbule
mysql> describe departments;
  Field
              Type
                            | Null | Key
                                           Default |
                                                      Extra
  dept_id
                             NO
                                     PRI
                                           NULL
                                                      auto_increment
              int
              varchar(45)
                             YES
                                           NULL
  dept_name
              varchar(45)
                                           NULL
  dept_loc
3 rows in set (0.07 sec)
mysql>
```

2. Create Table Employees:

```
mysql> create table employees(
    -> emp_id int primary key auto_increment,
    -> dept_id int,
    -> emp_fname varchar(45),
    -> emp_lname varchar(45),
    -> emp_position varchar(45),
    -> emp_join_date date,
    -> constraint fk_dept_id1 foreign key(dept_id)
    -> references departments(dept_id));
Query OK, 0 rows affected (0.10 sec)
```

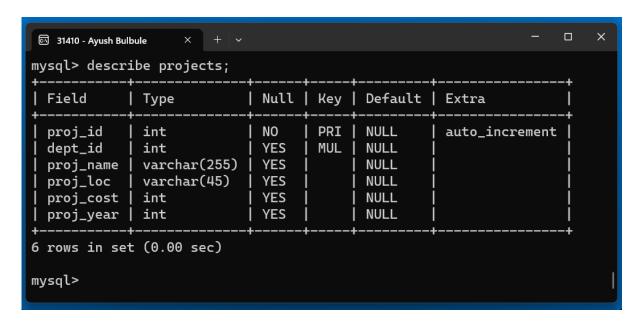
Output

```
31410 - Ayush Bulbule
mysql> describe employees;
 Field
                 Туре
                                Null | Key | Default |
 emp_id
                  int
                                 NO
                                        PRI
                                              NULL
                                                         auto_increment
 dept_id
                  int
                                 YES
                                        MUL
                                              NULL
                  varchar(45)
 emp_fname
                                 YES
                                              NULL
 emp_lname
                  varchar(45)
                                 YES
                                              NULL
 emp_position
                  varchar(45)
                                 YES
                                              NULL
 emp_join_date
                  date
                                YES
                                              NULL
6 rows in set (0.01 sec)
```

3. Create Table Projects:

```
mysql> create table projects(
    -> proj_id int primary key auto_increment,
    -> dept_id int,
    -> proj_name varchar(255),
    -> proj_loc varchar(45),
    -> proj_cost int,
    -> proj_year int,
    -> constraint fk_dept_id2 foreign key(dept_id)
    -> references departments(dept_id));
Query OK, 0 rows affected (0.09 sec)

mysql>
```



```
MySQL 8.0 Command Line C ×
 dept_id
            dept_name
                         | dept_loc
        1
            Computer
                           Pune
        2
            IT
                           Banglore
        3
            Electronics
                           Mumbai
            Mechanical
                           Nagpur
        5
            Textile
                           Nashik
5 rows in set (0.00 sec)
mysql>
```

Table:

```
Ayush Bulbule MySQL
mysql> select * from employees;
 emp_id | emp_fname | emp_lname | emp_position |
                                                    emp_join_date | dept_id |
                                                                               emp_salary |
           Ayush
                       Bulbule
                                    Manager
                                                    2002-06-24
                                                                                  2400000
       2
3
                                                    2002-06-12
                                                                                  2700000
           Durvesh
                       Chopade
                                    Manager
                                                                           2
           Pranay
                       Chavhan
                                    Manager
                                                    2000-06-02
                                                                                  2800000
       4
           Om
                                                    2000-07-02
                                                                                  2600000
                        Panchwate
                                    Manager
           Karan
                        Sharma
                                    Manager
                                                    2001-07-04
                                                                                  2600000
                                                    2020-05-05
       6
           Yash
                                    Assistant
                                                                                   230000
                        Gaur
       7
           Ganesh
                       Chopade
                                    SDE
                                                    2002-06-12
                                                                           2
                                                                                  2700000
       8
                                                    2002-06-10
                                                                                  2400000
           Virat
                       Joshi
                                    SDE
8 rows in set (0.00 sec)
```

View:

```
Ayush Bulbule MySQL
mysql> select emp_id, emp_lname, emp_salary from employees;
 emp_id | emp_lname | emp_salary |
           Bulbule
                           2400000
                           2700000
           Chopade
           Chavhan
                           2800000
       4
           Panchwate
                           2600000
           Sharma
                           2600000
       6
           Gaur
                            230000
       7
                           2700000
           Chopade
       8
          Joshi
                           2400000
8 rows in set (0.00 sec)
mysql>
```

CONCAT

```
Ayush Bulbule MySQL
mysql> select emp_id, concat(emp_fname, emp_lname) as emp_name, emp_position from employees;
                            emp_position
 emp_id | emp_name
           AyushBulbule
                            Manager
           DurveshChopade
                            Manager
           PranayChavhan
                            Manager
      4
          OmPanchwate
                            Manager
           KaranSharma
                            Manager
           YashGaur
                            Assistant
           GaneshChopade
                            SDE
           .
ViratJoshi
                            SDE
8 rows in set (0.00 sec)
mysql>
```

Index

```
Ayush Bulbule MySQL
mysql> create index idx_emp_fname on employees(emp_fname);
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0
mysql> select * from employees;
  emp_id | emp_fname | emp_lname | emp_position | emp_join_date | dept_id | emp_salary |
           Ayush
                         Bulbule
                                      Manager
                                                       2002-06-24
                                                                               1
                                                                                       2400000
                                                       2002-06-12
           Durvesh
                         Chopade
                                      Manager
                                                                                       2700000
                         Chavhan
                                      Manager
           Pranay
                                                       2000-06-02
                                                                               3
                                                                                       2800000
                         Panchwate
                                                       2000-07-02
                                                                                      2600000
           Om
                                      Manager
           Karan
                         Sharma
                                      Manager
                                                       2001-07-04
                                                                                       2600000
                                                       2020-05-05
                                                                               1
       6
            Yash
                         Gaur
                                      Assistant
                                                                                       230000
           Ganesh
                                                       2002-06-12
                         Chopade
                                                                                       2700000
                                      SDE
           Virat
                         Joshi
                                      SDE
                                                      2002-06-10
                                                                                      2400000
```

Various Constraints:

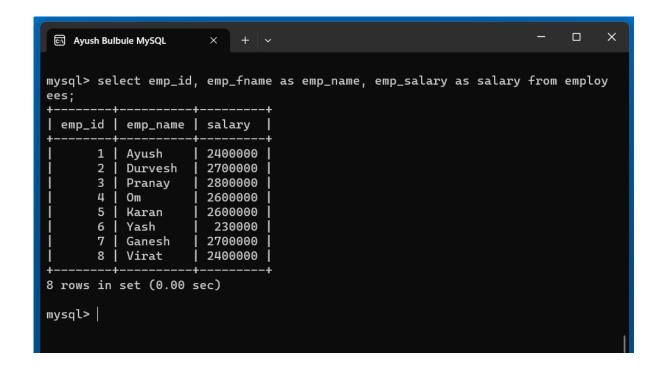
```
Mysql> alter table employees drop constraint fk_dept_id1;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> |
```

Foreign Key Constraint with on delete cascade

```
mysql> alter table employees add constraint fk_dept_id1 foreign key(dept_id) references departments(dept_id) on delete cascade;
Query OK, 8 rows affected (0.07 sec)
Records: 8 Duplicates: 0 Warnings: 0
```

Aliases:



Part B:

B. Insert at least 10 records in the Employee table and insert other tables accordingly.

```
mysql> insert into employees (dept_id, emp_fname, emp_lname, emp_positi
on,emp_join_date) values

-> (4,'Ajey','Jain','SrTester','2023/05/21'),
-> (3,'Ayush','Joshi','Manager','2023/03/21'),
-> (1,'Ajinkya','Birla','HOD','2023/01/22'),
-> (1,'Ojas','Deshmukh','TestAnalyst','2023/01/03'),
-> (2,'Jayesh','Kamad','Marketing','2023/01/03'),
-> (2,'Piyush','Shridhar','Operations','2023/02/09');
Query OK, 6 rows affected, 6 warnings (0.05 sec)
Records: 6 Duplicates: 0 Warnings: 6
```

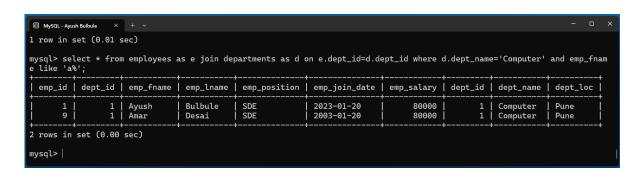
sql> sel	lect * †ron 	m employees; +	·	+	+	ŀ
emp_id	dept_id	emp_fname	emp_lname	emp_position	emp_join_date	
1	1	Ayush	Bulbule	Manager	2023-07-12	
4	2	Piyush	Karad	SalesMan	2023-07-05	
5	3	Pawan	Kumar	Tester	2023-06-01	
6	2	Karan	Sharma	Analyst	2023-02-17	
7	4	Ajey	Jain	SrTester	2023-05-21	
8	3	Ayush	Joshi	Manager	2023-03-21	
9	1	Ajinkya	Birla	HOD	2023-01-22	
10	1	0jas	Deshmukh	TestAnalyst	2023-01-03	
11	2	Jayesh	Kamad	Marketing	2023-01-03	
12	2	Piyush	Shridhar	Operations	2023-02-09	
	 n set (0.00		·	 	·	H

Result And Query:

```
MySQL - Ayush Bulbule
 mysql> insert into employees (dept_id, emp_fname, emp_lname, emp_position, emp_join_date,e
mysql> insert into employees (dept_id, emp_fname, emp_lnamp_salary) values

-> (1,'Ayush','Bulbule','SDE','2023/01/20',80000),
-> (2,'Pawan','Kumar','DEV','2023/01/30',90000),
-> (3,'Arnav','Deshmukh','Head','2022/02/04',90000),
-> (4,'Sumit','Joshi','Manager','2022/02/04',80000),
-> (5,'Kishor','Jain','Manager','2022/02/04',80000),
-> (4,'Arnav','Deshmukh','Head','2022/02/04',80000),
-> (3,'Yash','Jain','Head','2022/02/04',80000),
-> (2,'Pawan','Kumar','DEV','2023/01/30',90000),
-> (1,'Amar','Desai','SDE','2003/01/20',80000);
Query 0K, 9 rows affected, 9 warnings (0.01 sec)
Records: 9 Duplicates: 0 Warnings: 9
 mysql> select * from employees;
                      dept_id
                                           emp_fname
                                                                   emp_lname
                                                                                           emp_position
                                                                                                                          emp_join_date |
     emp_id |
                                                                                                                                                          emp_salary
                                                                                                                          2023-01-20
                                           Ayush
                                                                   Bulbule
                                                                                            SDE
               1
                                                                                                                                                                    80000
                                   2
               2
                                           Pawan
                                                                    Kumar
                                                                                            DEV
                                                                                                                          2023-01-30
                                                                                                                                                                    90000
                                   3
                                                                                                                          2022-02-04
                                                                   Deshmukh
               3
                                           Arnav
                                                                                            Head
                                                                                                                                                                    90000
                                   4
              4
                                           Sumit
                                                                   Joshi
                                                                                            Manager
                                                                                                                          2022-02-04
                                                                                                                                                                     90000
               5
                                           Kishor
                                                                   Jain
                                                                                            Manager
                                                                                                                          2022-02-04
                                                                                                                                                                    80000
               6
                                   4
                                                                   Deshmukh
                                                                                                                          2022-02-04
                                                                                                                                                                    90000
                                           Arnav
                                                                                            Head
               7
                                   3
                                           Yash
                                                                   Jain
                                                                                            Head
                                                                                                                          2022-02-04
                                                                                                                                                                     80000
                                   2
               8
                                           Pawan
                                                                   Kumar
                                                                                            DEV
                                                                                                                          2023-01-30
                                                                                                                                                                     90000
               9
                                                                                           SDE
                                                                                                                          2003-01-20
                                                                                                                                                                     80000
                                                                   Desai
                                           Amar
```

2. Display all Employee details with Department 'Computer' and 'IT' and Employee first name starting with 'a' or 'h'.

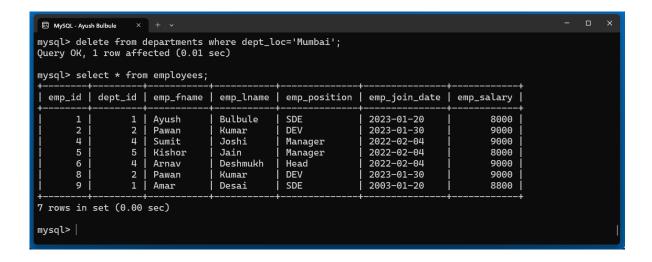


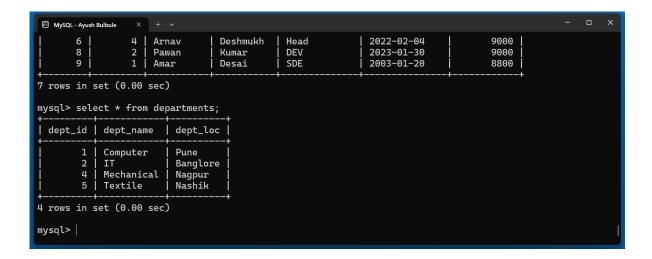
3. Lists the number of different Employee Positions.

4. Give 10% increase in Salary of the Employee whose Joining Date before 2020.

```
MySQL - Ayush Bulbule
mysql> update employees set emp_salary = emp_salary*1.1 where emp_join_date<'2020-01-01'; Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> select * from employees;
  emp_id | dept_id | emp_fname |
                                    emp_lname |
                                                 emp_position | emp_join_date | emp_salary
                                    Bulbule
                                                                  2023-01-20
                                                                                           8000
                       Ayush
                                                  SDE
        1
                                                                   2023-01-30
                       Pawan
                                     Kumar
                                                  DEV
                                                                                           9000
                                                                   2022-02-04
                                    Deshmukh
                                                                                           9000
                       Arnav
                                                  Head
        4
                       Sumit
                                     Joshi
                                                  Manager
                                                                   2022-02-04
                                                                                           9000
                       Kishor
                                     Jain
                                                  Manager
                                                                   2022-02-04
                                                                                           8000
                                    Deshmukh
                                                                   2022-02-04
                                                                                           9000
        6
                       Arnav
                                                  Head
                       Yash
                                                  Head
                                                                   2022-02-04
                                                                                           8000
                                     Jain
                       Pawan
                                                  DEV
                                                                   2023-01-30
        8
                   2
                                    Kumar
                                                                                           9000
        9
                       Amar
                                    Desai
                                                                  2003-01-20
                                                                                           8800
                                                  SDE
9 rows in set (0.00 sec)
mysql>|
```

5. Delete Department details which location is 'Mumbai'





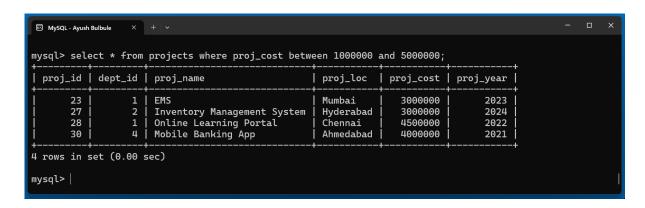
6. Find the names of Projects with location 'pune'.

Table Data:

sql> sql> sel	ect * from	projects;					
oroj_id	dept_id	proj_name	+ proj_loc	proj_cost	proj_year		
23	1	EMS	Mumbai	3000000	2023		
24	2	Hotel System	Pune	7000000	2022		
25	5	E-Commerce Platform	Delhi	6000000	2022		
26	4	AI Chatbot Integration	Bengaluru	8500000	2023		
27	2	Inventory Management System	Hyderabad	3000000	2024		
28	1	Online Learning Portal	Chennai	4500000	2022		
29	4	Social Media Analytics	Kolkata	7500000	2025		
30	4	Mobile Banking App	Ahmedabad	4000000	2021		
31	2	Cloud-Based CRM	Jaipur	5500000	2024		
32	5	IoT Home Automation	Lucknow	7000000	2023		
33	1	E-Healthcare System	Indore	6500000	2022		
34	5	Blockchain Payment Platform	Patna	8000000	2021		

Query:

7. Find the project having cost in between 100000 to 500000.



8. Find the project having maximum price and find average of Project cost

9. Display all employees with Emp _id and Emp name in decreasing order of Emp Iname

10. Display Proj_name, Proj_location , Proj_cost of all project started in 2004, 2005, 2007

```
MySQL - Ayush Bulbule
mysql> select proj_name, proj_loc, proj_cost from projects where proj_year in (2022,2021,2023);
                                       proj_loc | proj_cost |
  proj_name
                                       Mumbai
                                                         3000000
  Hotel System
                                                         7000000
                                       Pune
  E-Commerce Platform
                                       Delhi
                                                        6000000
  AI Chatbot Integration
                                       Bengaluru
                                                        8500000
  Online Learning Portal
Mobile Banking App
IoT Home Automation
E-Healthcare System
Blockchain Payment Platform
                                                        4500000
                                       Chennai
                                       Ahmedabad
                                                        4000000
                                       Lucknow
                                                        7000000
                                                        6500000
                                       Indore
                                       Patna
                                                        8000000
9 rows in set (0.00 sec)
mysql>
```

@31410 Ayush Bulbule