Lab 3 : COMP[305]

1. **Write a query to create primary constraints with column level.**

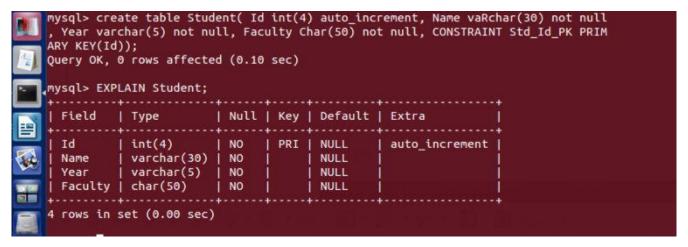**Ans: Lab3Q1**

```
mysql> create table BookStore ( Id int(20) auto_increment, Title varchar(30) not
 null, Author varchar(30) not null, Price Decimal(4,2) not null, primary key (Id
));
Query OK, 0 rows affected (0.11 sec)

mysql> explain BookStore;
+--------+-------------+------+-----+---------+----------------+
| Field  | Type        | Null | Key | Default | Extra          |
+--------+-------------+------+-----+---------+----------------+
| Id     | int(20)     | NO   | PRI | NULL    | auto_increment |
| Title  | varchar(30) | NO   |     | NULL    |                |
| Author | varchar(30) | NO   |     | NULL    |                |
| Price  | decimal(4,2)| NO   |     | NULL    |                |
+--------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

2. **Write a query to create primary constraints with column level with naming convention.**

Ans: Lab3Q4

```
mysql> create table Department(Code int(10) not null, constraint Id_PK primary key(Code), Name char(50), No_faculty int(3), No_staff
Query OK, 0 rows affected (0.10 sec)

mysql> explain Department;
+------------+----------+------+-----+---------+-------+
| Field      | Type     | Null | Key | Default | Extra |
+------------+----------+------+-----+---------+-------+
| Code       | int(10)  | NO   | PRI | NULL    |       |
| Name       | char(50) | YES  |     | NULL    |       |
| No_faculty | int(3)   | YES  |     | NULL    |       |
| No_staffs  | int(3)   | YES  |     | NULL    |       |
+------------+----------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

3. **Write a query to create primary constraints with table level with naming convention.**

Ans: Lab3Q2

```
mysql> create table Student( Id int(4) auto_increment, Name vaRchar(30) not null
, Year varchar(5) not null, Faculty Char(50) not null, CONSTRAINT Std_Id_PK PRIM
ARY KEY(Id));
Query OK, 0 rows affected (0.10 sec)

mysql> EXPLAIN Student;
+---------+-------------+------+-----+---------+----------------+
| Field   | Type        | Null | Key | Default | Extra          |
+---------+-------------+------+-----+---------+----------------+
| Id      | int(4)      | NO   | PRI | NULL    | auto_increment |
| Name    | varchar(30) | NO   |     | NULL    |                |
| Year    | varchar(5)  | NO   |     | NULL    |                |
| Faculty | char(50)    | NO   |     | NULL    |                |
+---------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

4. **Write a query to create primary constraints with alter command.**

Ans: Lab3Q3

```
mysql> create table Record( empno int(5) not null, ename varchar(20), address va
rchar(20), salary int(4) not null);
Query OK, 0 rows affected (0.10 sec)

mysql> alter table Record add constraint emp_cons_PK primary key(empno);
Query OK, 0 rows affected (0.20 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> explain Record;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| empno   | int(5)      | NO   | PRI | NULL    |       |
| ename   | varchar(20) | YES  |     | NULL    |       |
| address | varchar(20) | YES  |     | NULL    |       |
| salary  | int(4)      | NO   |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

2

5. **Write a query to create foreign key constraints with column level.**

Ans: Lab3Q5

```
mysql> create table Laptop(
    -> Model varchar(5) primary key,
    -> Name char(10) not null,
    -> Price Decimal(6,2),
    -> Processor varchar(10));
Query OK, 0 rows affected (0.12 sec)

mysql> create table Peripherals(
    -> Name varchar(10) not null,
    -> Price Decimal(4,2),
    -> Model varchar(10) references Laptop(Model));
Query OK, 0 rows affected (0.14 sec)

mysql> explain Laptop;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| Model     | varchar(5)   | NO   | PRI | NULL    |       |
| Name      | char(10)     | NO   |     | NULL    |       |
| Price     | decimal(6,2) | YES  |     | NULL    |       |
| Processor | varchar(10)  | YES  |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> explain Peripherals;
+-------+--------------+------+-----+---------+-------+
| Field | Type         | Null | Key | Default | Extra |
+-------+--------------+------+-----+---------+-------+
| Name  | varchar(10)  | NO   |     | NULL    |       |
| Price | decimal(4,2) | YES  |     | NULL    |       |
| Model | varchar(10)  | YES  |     | NULL    |       |
+-------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

3

6. **Write a query to create foreign key constraints with Table level.**

Ans: Lab3Q6

```
mysql> create table Dept( Deptno int(3) not null primary key, DeptName varchar(30), NoOfstaff int(3));
Query OK, 0 rows affected (0.08 sec)

mysql> create table employee11( empno int(3) not null, Deptno int(3) not null, Level varchar(10), constraint dpt_FK foreign key(Deptno) references
 Dept(Deptno));
Query OK, 0 rows affected (0.13 sec)

mysql> explain Dept;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| Deptno    | int(3)      | NO   | PRI | NULL    |       |
| DeptName  | varchar(30) | YES  |     | NULL    |       |
| NoOfstaff | int(3)      | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> explain employee;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| empno      | int(11)     | NO   | PRI | 0       |       |
| ename      | varchar(50) | YES  |     | NULL    |       |
| dsignation | varchar(50) | YES  |     | NULL    |       |
| salary     | int(20)     | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> explain employee11;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| empno  | int(3)      | NO   |     | NULL    |       |
| Deptno | int(3)      | NO   | MUL | NULL    |       |
| Level  | varchar(10) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

7. **Write a query to create foreign key constraints with Table level with alter command.**

Ans: Lab3Q7

```
mysql>
mysql> create table Dept( Deptno int(3) not null auto_increment primary key, DeptName varchar(30), NoOfstaff int(3));
Query OK, 0 rows affected (0.09 sec)

mysql> create table employee11( empno int(3) not null, Deptno int(3) not null, Level varchar(10));
Query OK, 0 rows affected (0.08 sec)

mysql> alter table employee11 add constraint add_key_FK foreign key(Deptno) references Dept(Deptno));
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to u
se near ')' at line 1
mysql> alter table employee11 add constraint add_key_FK foreign key(Deptno) references Dept(Deptno);
Query OK, 0 rows affected (0.20 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> explain emloyee11;
ERROR 1146 (42S02): Table 'WORKPLACE.emloyee11' doesn't exist
mysql> explain employee11;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| empno  | int(3)      | NO   |     | NULL    |       |
| Deptno | int(3)      | NO   | MUL | NULL    |       |
| Level  | varchar(10) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

4

8. **Write a query to create Check constraints with column level.**

Ans: Lab3Q8

```
mysql>
mysql> Create table Teacher(Id int not null, Name varchar(20), Faculty varchar(20), Salary Decimal(6,2) CHECK( Salary>4000 and Salary<5000));
Query OK, 0 rows affected (0.12 sec)

mysql> insert into Teacher(Id,Name,Faculty,Salary) values('2','Ram khadka','Civil','300.345');
Query OK, 1 row affected, 1 warning (0.03 sec)

mysql> insert into Teacher(Id,Name,Faculty,Salary) values('1','Hari Bahadur','Computer','60000.555');
Query OK, 1 row affected, 1 warning (0.04 sec)

mysql> select * from Teacher;
+----+-------------+----------+---------+
| Id | Name        | Faculty  | Salary  |
+----+-------------+----------+---------+
|  2 | Ram khadka  | Civil    |  300.35 |
|  1 | Hari Bahadur| Computer | 9999.99 |
+----+-------------+----------+---------+
2 rows in set (0.00 sec)
```

9. **Write a query to create Check constraints with table level.**

Ans: Lab3Q9

```
mysql>
mysql> Create table Teacher(Id int not null, Name varchar(20), Faculty varchar(20), Salary Decimal(6,2) CHECK( Salary>4000 and Salary<5000));
Query OK, 0 rows affected (0.12 sec)

mysql> insert into Teacher(Id,Name,Faculty,Salary) values('2','Ram khadka','Civil','300.345');
Query OK, 1 row affected, 1 warning (0.03 sec)

mysql> insert into Teacher(Id,Name,Faculty,Salary) values('1','Hari Bahadur','Computer','60000.555');
Query OK, 1 row affected, 1 warning (0.04 sec)

mysql> select * from Teacher;
+----+-------------+----------+---------+
| Id | Name        | Faculty  | Salary  |
+----+-------------+----------+---------+
|  2 | Ram khadka  | Civil    |  300.35 |
|  1 | Hari Bahadur| Computer | 9999.99 |
+----+-------------+----------+---------+
2 rows in set (0.00 sec)
```

10. **Write a query to create Check constraints with table level using alter command.**

Ans Lab3Q10

```
mysql>
mysql> create table emp1(empno int(3), ename varchar(20) ,sal int(5), deptno int(2));
Query OK, 0 rows affected (0.09 sec)

mysql> alter table emp1 add constraint emp_sal_ck CHECK (sal>100 and sal<500);
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

11. **Write a query to create unique constraints with column level.**

Ans Lab3Q11

```
mysql>
mysql>
mysql> create table emp2(empno int(3), ename varchar(20) UNIQUE ,sal int(5), dep
tno int(2));
Query OK, 0 rows affected (0.11 sec)
```

12. **Write a query to create Not Null constraints with column level.**

Ans Lab3Q13

```
mysql>
mysql> create table emp4(empno int(3), ename varchar(20) NOT NULL ,sal int(5), d
eptno int(2));
Query OK, 0 rows affected (0.11 sec)
```

13. **Write a query to create Null constraints with column level.**

Ans: Lab3Q14

```
mysql>
mysql>
mysql> create table emp5(empno int(3), ename varchar(20) NULL ,sal int(5), deptno int(2));
Query OK, 0 rows affected (0.12 sec)
```

14. **Write a query to disable the constraints.**

Ans: Lab3Q15

```
mysql>
mysql> create table emp5(empno int(3), ename varchar(20) NULL ,sal int(5), deptno int(2));
Query OK, 0 rows affected (0.12 sec)

mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql> alter table emp5 modify ename varchar(20) NOT NULL;
Query OK, 0 rows affected (0.22 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

15. **Write a query to enable the constraints.**

Ans: Lab3Q16

```
mysql>
mysql> alter table emp5 modify ename varchar(20) NULL;
Query OK, 0 rows affected (0.19 sec)
Records: 0  Duplicates: 0  Warnings: 0
```