

# Experiment No:2

Aim: Adding primary key, foreign key, check constraints for tables.

## Theory:

### Primary key:

A **primary key** is a special relational database table column (or combination of columns) designated to uniquely identify all table records. A **primary key's** main features are: It must contain a unique value for each row of data. It cannot contain null values.

### Syntax:

```
ALTER TABLE table_name  
ADD PRIMARY KEY (attribute_in_table);
```

To drop a primary key we must first drop all the foreign keys that refer to it, or else referential integrity constraint is violated. The syntax to drop primary key is :

```
ALTER TABLE table_name  
DROP PRIMARY KEY
```

### Foreign key:

A foreign key is a key used to link two tables together. This is sometimes called a referencing key. Foreign Key is a column or a combination of columns whose values match a Primary Key in a different table.

**The relationship between 2 tables matches the Primary Key in one of the tables with a Foreign Key in the second table.**

If a table has a primary key defined on any field(s), then you cannot have two records having the same value of that field(s).

### Syntax:

```
ALTER TABLE table_2  
  
ADD FOREIGN KEY (attribute_in_table_2) REFERENCES table_1 (attribute_in_table_1);
```

To drop a foreign key we need to have the constraint name which refers to the foreign key constraint. This is found using the following syntax:

```
select CONSTRAINT_NAME FROM  
INFORMATION_SCHEMA.TABLE_CONSTRAINTS  
WHERE TABLE_NAME="table_name";
```

Then using the drop syntax as given below we can drop the foreign key:

```
ALTER TABLE table_name  
DROP FOREIGN KEY constraint_name;
```

### Constraints:

Following are commonly used constraints available in SQL.

- NOT NULL Constraint: By default, a column can hold NULL values. If you do not want a column to have a NULL value, then you need to define such constraint on this column specifying that NULL is now not allowed for that column.

#### **Syntax:**

```
ALTER TABLE table_name  
MODIFY attribute domain NOT NULL;
```

- DEFAULT Constraint: The DEFAULT constraint provides a default value to a column when the INSERT INTO statement does not provide a specific value.

#### **Syntax:**

```
ALTER TABLE table_name  
MODIFY attribute domain DEFAULT value;
```

- UNIQUE Constraint: The UNIQUE Constraint prevents two records from having identical values in a particular column.

#### **Syntax:**

```
ALTER TABLE table_name  
MODIFY attribute domain UNIQUE;
```

- CHECK Constraint The CHECK Constraint enables a condition to check the value being entered into a record. If the condition evaluates to false, the record violates the constraint and isn't entered into the table.

#### **Syntax:**

```
ALTER TABLE table_name  
MODIFY attribute domain CHECK(condition);
```

- INDEX: The INDEX is used to create and retrieve data from the database very quickly. Index can be created by using single or group of columns in a table. When index is created, it is assigned a ROWID for each row before it sorts out the data.

Proper indexes are good for performance in large databases, but you need to be careful while creating index. Selection of fields depends on what you are using in your SQL queries.

### **Syntax:**

```
CREATE INDEX index_name

ON table_name ( column1, column2.....);
```

Constraints can be specified when a table is created with the CREATE TABLE statement or you can use ALTER TABLE statement to create constraints even after the table is created.

### **Code:**

```
t151070031@t151070031-VirtualBox:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 6
Server version: 5.7.17-0ubuntu0.16.04.1 (Ubuntu)

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```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases
-> ;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.17 sec)
```

```
mysql> create database exp2;
Query OK, 1 row affected (0.01 sec)
```

```

mysql> use exp2;
Database changed

mysql> create table employee(SSN int not null primary key,Name
varchar(100));
Query OK, 0 rows affected (0.60 sec)

mysql> insert into employee(SSN,Name) values
(1201,"Tushar"),(1202,"Viral"),(1203,"Agam"),(1204,"Vatsal");
Query OK, 4 rows affected (0.70 sec)
Records: 4 Duplicates: 0 Warnings: 0

mysql> insert into employee(SSN,Name) values (1201,"Tushar");
ERROR 1062 (23000): Duplicate entry '1201' for key 'PRIMARY'
mysql> insert into employee(SSN,Name) values (,"Tushar"); 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 use
near '"Tushar")' at line 1
mysql> insert into employee(SSN,Name) values (1208,);
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 use near ')' at line 1
mysql> insert into employee(SSN,Name) values (1208,NULL);
Query OK, 1 row affected (0.13 sec)

mysql> select * from employee;
+-----+-----+
| SSN   | Name   |
+-----+-----+
| 1201  | Tushar |
| 1202  | Viral  |
| 1203  | Agam   |
| 1204  | Vatsal |
| 1208  | NULL   |
+-----+-----+
5 rows in set (0.07 sec)

mysql> delete from employee where SSN=1208;
Query OK, 1 row affected (0.46 sec)

mysql> select * from employee;
+-----+-----+
| SSN   | Name   |
+-----+-----+
| 1201  | Tushar |
| 1202  | Viral  |
| 1203  | Agam   |
| 1204  | Vatsal |
+-----+-----+
4 rows in set (0.00 sec)

mysql> insert into employee(SSN,Name) values (null,"VAT");
ERROR 1048 (23000): Column 'SSN' cannot be null
mysql> alter table employee add column college varchar(40);
Query OK, 0 rows affected (1.06 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from employee;
+-----+-----+-----+
| SSN   | Name   | college |
+-----+-----+-----+

```

```

+-----+-----+-----+
| 1201 | Tushar | NULL |
| 1202 | Viral  | NULL |
| 1203 | Agam   | NULL |
| 1204 | Vatsal | NULL |
+-----+-----+-----+
4 rows in set (0.01 sec)

```

```

mysql> alter table employee modify column college varchar(40)
default "V.J.T.I";
Query OK, 0 rows affected (0.09 sec)
Records: 0 Duplicates: 0 Warnings: 0

```

```

mysql> select * from employee;
+-----+-----+-----+
| SSN   | Name   | college |
+-----+-----+-----+
| 1201  | Tushar | NULL     |
| 1202  | Viral  | NULL     |
| 1203  | Agam   | NULL     |
| 1204  | Vatsal | NULL     |
+-----+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> update employee set college="V.J.T.I" where college is null;
Query OK, 4 rows affected (0.20 sec)
Rows matched: 4 Changed: 4 Warnings: 0

```

```

mysql> select * from employee;
+-----+-----+-----+
| SSN   | Name   | college |
+-----+-----+-----+
| 1201  | Tushar | V.J.T.I |
| 1202  | Viral  | V.J.T.I |
| 1203  | Agam   | V.J.T.I |
| 1204  | Vatsal | V.J.T.I |
+-----+-----+-----+
4 rows in set (0.01 sec)

```

```

mysql> alter table employee modify column Name varchar(100) not
null;
Query OK, 0 rows affected (2.61 sec)
Records: 0 Duplicates: 0 Warnings: 0

```

```

mysql> insert into employee(SSN)values (1200);
ERROR 1364 (HY000): Field 'Name' doesn't have a default value
mysql> insert into employee(Name,college,SSN)values
("Patrik","IITB",1200);
Query OK, 1 row affected (0.15 sec)

```

```

mysql> select * from employee;
+-----+-----+-----+
| SSN   | Name   | college |
+-----+-----+-----+
| 1200  | Patrik | IITB     |
| 1201  | Tushar | V.J.T.I |
| 1202  | Viral  | V.J.T.I |
| 1203  | Agam   | V.J.T.I |
| 1204  | Vatsal | V.J.T.I |
+-----+-----+-----+
5 rows in set (0.01 sec)

```

```
mysql> alter table employee add column age int default 20;
Query OK, 0 rows affected (0.97 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select * from employee;
```

```
+-----+-----+-----+-----+
| SSN   | Name   | college | age   |
+-----+-----+-----+-----+
| 1200  | Patrik | IITB    | 20   |
| 1201  | Tushar | V.J.T.I | 20   |
| 1202  | Viral  | V.J.T.I | 20   |
| 1203  | Agam   | V.J.T.I | 20   |
| 1204  | Vatsal | V.J.T.I | 20   |
+-----+-----+-----+-----+
5 rows in set (0.01 sec)
```

```
mysql> alter table employee modify column age int unique ;
```

```
ERROR 1062 (23000): Duplicate entry '20' for key 'age'
```

```
mysql> alter table employee add column salary_in_$ numeric(10,2) not
null;
```

```
Query OK, 0 rows affected (2.59 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select * from employee;
```

```
+-----+-----+-----+-----+-----+
| SSN   | Name   | college | age   | salary_in_$ |
+-----+-----+-----+-----+-----+
| 1200  | Patrik | IITB    | 20   | 0.00 |
| 1201  | Tushar | V.J.T.I | 20   | 0.00 |
| 1202  | Viral  | V.J.T.I | 20   | 0.00 |
| 1203  | Agam   | V.J.T.I | 20   | 0.00 |
| 1204  | Vatsal | V.J.T.I | 20   | 0.00 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> update employee set salary_in_$= (1210-SSN)*1000;
```

```
Query OK, 5 rows affected (0.18 sec)
Rows matched: 5 Changed: 5 Warnings: 0
```

```
mysql> select * from employee;
```

```
+-----+-----+-----+-----+-----+
| SSN   | Name   | college | age   | salary_in_$ |
+-----+-----+-----+-----+-----+
| 1200  | Patrik | IITB    | 20   | 10000.00 |
| 1201  | Tushar | V.J.T.I | 20   | 9000.00  |
| 1202  | Viral  | V.J.T.I | 20   | 8000.00  |
| 1203  | Agam   | V.J.T.I | 20   | 7000.00  |
| 1204  | Vatsal | V.J.T.I | 20   | 6000.00  |
+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)
```

```
mysql> select distinct colleges from employee;
```

```
ERROR 1054 (42S22): Unknown column 'colleges' in 'field list'
```

```
mysql> select distinct college from employee;
```

```
+-----+
| college |
+-----+
| IITB    |
| V.J.T.I |
+-----+
```

2 rows in set (0.09 sec)

```
mysql> select distinct age from employee;
```

```
+-----+
| age   |
+-----+
| 20    |
+-----+
```

1 row in set (0.01 sec)

```
mysql> create table Orders(id int,Name varchar(100),cost
numeric(5,2));
```

Query OK, 0 rows affected (0.25 sec)

```
mysql> show tables;
```

```
+-----+
| Tables_in_exp2 |
+-----+
| Orders          |
| employee        |
+-----+
```

2 rows in set (0.00 sec)

```
mysql> insert into Orders(id,Name,cost) values
(1205,"Agam",200),(1201,"Tushar",25),(1203,"Viral",300),(1202,"Vatsa
1",500),(1201,"Tushar",30),(1210,"Pranjal",200);
```

Query OK, 6 rows affected (0.18 sec)

Records: 6 Duplicates: 0 Warnings: 0

```
mysql> desc employee;
```

Field	Type	Null	Key	Default	Extra
SSN	int(11)	NO	PRI	NULL	
Name	varchar(100)	NO		NULL	
college	varchar(40)	YES		V.J.T.I	
age	int(11)	YES		20	
salary_in_\$	decimal(10,2)	NO		NULL	

5 rows in set (0.09 sec)

```
mysql> desc Orders;
```

Field	Type	Null	Key	Default	Extra
id	int(11)	YES		NULL	
Name	varchar(100)	YES		NULL	
cost	decimal(5,2)	YES		NULL	

3 rows in set (0.01 sec)

```
mysql> alter table Orders add foreign key(id) references
employee(SSN);
```

ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails (`exp2`.`#sql-397\_6`, CONSTRAINT `#sql-397\_6\_ibfk\_1` FOREIGN KEY (`id`) REFERENCES `employee` (`SSN`))

```
mysql> alter table Orders modify column id int foreign key
references employee.SSN;
```

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 use near 'foreign key references employee.SSN' at line 1

```
mysql> alter table Orders add foreign key(id) references
employee(SSN);
ERROR 1452 (23000): Cannot add or update a child row: a foreign key
constraint fails (`exp2`.`#sql-397_6`, CONSTRAINT `#sql-
397_6_ibfk_1` FOREIGN KEY (`id`) REFERENCES `employee` (`SSN`))
mysql> drop table Orders;
Query OK, 0 rows affected (0.27 sec)
```

```
mysql> create table Orders(id int,Name varchar(100),cost
numeric(5,2));
Query OK, 0 rows affected (0.25 sec)
```

```
mysql> alter table Orders add foreign key(id) references
employee(SSN);
Query OK, 0 rows affected (2.86 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> insert into
Orders(id,name,cost)values(1205,"Agam",200),(1201,"Tushar",25),(1203
,"Viral",300),(1202,"Vatsal",500),(1201,"Tushar",30),(1210,"Pranjal"
,2000);
ERROR 1452 (23000): Cannot add or update a child row: a foreign key
constraint fails (`exp2`.`Orders`, CONSTRAINT `Orders_ibfk_1`
FOREIGN KEY (`id`) REFERENCES `employee` (`SSN`))
```

```
mysql> select * from employee;
+-----+-----+-----+-----+-----+
| SSN   | Name   | college | age  | salary_in_$ |
+-----+-----+-----+-----+-----+
| 1200  | Patrik | IITB    | 20   | 10000.00    |
| 1201  | Tushar | V.J.T.I | 20   | 9000.00     |
| 1202  | Viral  | V.J.T.I | 20   | 8000.00     |
| 1203  | Agam   | V.J.T.I | 20   | 7000.00     |
| 1204  | Vatsal | V.J.T.I | 20   | 6000.00     |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> insert into
Orders(id,name,cost)values(1203,"Agam",200),(1201,"Tushar",25),(1202
,"Viral",300),(1204,"Vatsal",500),(1201,"Tushar",30),(1200,"Patrik",
200);
Query OK, 6 rows affected (0.31 sec)
Records: 6 Duplicates: 0 Warnings: 0
mysql> insert into Orders(id,name,cost)values(1201,"Agam",201);
Query OK, 1 row affected (0.10 sec)
mysql> select * from Orders;
```

```
+-----+-----+-----+
| id    | Name   | cost   |
+-----+-----+-----+
| 1203  | Agam   | 200.00 |
| 1201  | Tushar | 25.00  |
| 1202  | Viral  | 300.00 |
| 1204  | Vatsal | 500.00 |
| 1201  | Tushar | 30.00  |
| 1200  | Patrik | 200.00 |
| 1201  | Agam   | 201.00 |
+-----+-----+-----+
7 rows in set (0.00 sec)
```



```
mysql> insert into
Orders(id,name,cost)values(1203,"Agam",200),(1201,"Tushar",25),(1202
,"Viral",300),(1204,"Vatsal",500),(1201,"Tushar",30),(1200,"Patrik",
200);
Query OK, 6 rows affected (0.24 sec)
Records: 6 Duplicates: 0 Warnings: 0
mysql> select * from Orders;
+-----+-----+-----+
| id    | Name   | cost   |
+-----+-----+-----+
| 1203  | Agam   | 200.00 |
| 1201  | Tushar | 25.00  |
| 1202  | Viral  | 300.00 |
| 1204  | Vatsal | 500.00 |
| 1201  | Tushar | 30.00  |
| 1200  | Patrik | 200.00 |
| 1201  | Agam   | 201.00 |
| 1203  | Agam   | 200.00 |
| 1201  | Tushar | 25.00  |
| 1202  | Viral  | 300.00 |
| 1204  | Vatsal | 500.00 |
| 1201  | Tushar | 30.00  |
| 1200  | Patrik | 200.00 |
+-----+-----+-----+
13 rows in set (0.01 sec)
```

```
mysql> insert into
Orders(id,name,cost)values(1203,"Agam",200),(1201,"Tushar",25),(1202
,"Viral",300),(1204,"Vatsal",500),(1201,"Tushar",30),(1200,"Patrik",
200);
Query OK, 6 rows affected (0.13 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> select * from Orders;
+-----+-----+-----+
| id    | Name   | cost   |
+-----+-----+-----+
| 1203  | Agam   | 200.00 |
| 1201  | Tushar | 25.00  |
| 1202  | Viral  | 300.00 |
| 1204  | Vatsal | 500.00 |
| 1201  | Tushar | 30.00  |
| 1200  | Patrik | 200.00 |
| 1201  | Agam   | 201.00 |
| 1203  | Agam   | 200.00 |
| 1201  | Tushar | 25.00  |
| 1202  | Viral  | 300.00 |
| 1204  | Vatsal | 500.00 |
| 1201  | Tushar | 30.00  |
| 1200  | Patrik | 200.00 |
| 1203  | Agam   | 200.00 |
| 1201  | Tushar | 25.00  |
| 1202  | Viral  | 300.00 |
| 1204  | Vatsal | 500.00 |
| 1201  | Tushar | 30.00  |
| 1200  | Patrik | 200.00 |
+-----+-----+-----+
19 rows in set (0.00 sec)
```

```
mysql> insert into
Orders(id,name,cost)values(1203,"Agam",200),(1201,"Tushar",25),(1202
,"Viral",300),(1204,"Vatsal",500),(1201,"Tushar",30),(1200,"Patrik",
200);
```

```
Query OK, 6 rows affected (0.04 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> select * from Orders;
```

id	Name	cost
1203	Agam	200.00
1201	Tushar	25.00
1202	Viral	300.00
1204	Vatsal	500.00
1201	Tushar	30.00
1200	Patrik	200.00
1201	Agam	201.00
1203	Agam	200.00
1201	Tushar	25.00
1202	Viral	300.00
1204	Vatsal	500.00
1201	Tushar	30.00
1200	Patrik	200.00
1203	Agam	200.00
1201	Tushar	25.00
1202	Viral	300.00
1204	Vatsal	500.00
1201	Tushar	30.00
1200	Patrik	200.00
1203	Agam	200.00
1201	Tushar	25.00
1202	Viral	300.00
1204	Vatsal	500.00
1201	Tushar	30.00
1200	Patrik	200.00

```
25 rows in set (0.00 sec)
```

```
mysql> insert into
Orders(id,name,cost)values(1203,"Agam",200),(1201,"Tushar",25),(1202
,"Viral",300),(1204,"Vatsal",500),(1201,"Tushar",30),(1200,"Patrik",
200);
```

```
Query OK, 6 rows affected (0.04 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> select * from Orders;
```

id	Name	cost
1203	Agam	200.00
1201	Tushar	25.00
1202	Viral	300.00
1204	Vatsal	500.00
1201	Tushar	30.00
1200	Patrik	200.00
1201	Agam	201.00
1203	Agam	200.00
1201	Tushar	25.00
1202	Viral	300.00

	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	

+-----+-----+-----+

31 rows in set (0.01 sec)

mysql> create index i on Orders(Name);

Query OK, 0 rows affected (0.24 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> select \* from Orders use index (i);

	id		Name		cost	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	
	1201		Agam		201.00	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	
	1201		Tushar		30.00	
	1200		Patrik		200.00	
	1203		Agam		200.00	
	1201		Tushar		25.00	
	1202		Viral		300.00	
	1204		Vatsal		500.00	

```

| 1201 | Tushar | 30.00 |
| 1200 | Patrik | 200.00 |
+-----+-----+-----+
31 rows in set (0.00 sec)

```

```

mysql> alter table employee drop primary key;
ERROR 1025 (HY000): Error on rename of './exp2/#sql-397_6' to
'./exp2/employee' (errno: 150 - Foreign key constraint is
incorrectly formed)

```

```

mysql> select CONSTRAINT_NAME FROM
INFORMATION_SCHEMA.TABLE_CONSTRAINTS WHERE TABLE_NAME="Orders";
+-----+
| CONSTRAINT_NAME |
+-----+
| Orders_ibfk_1   |
+-----+
1 row in set (0.28 sec)

```

```

mysql> alter table Orders drop foreign key Orders_ibfk_1;
Query OK, 0 rows affected (0.10 sec)
Records: 0 Duplicates: 0 Warnings: 0
mysql> desc Orders;

```

```

+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id    | int(11)       | YES  | MUL | NULL    |       |
| Name  | varchar(100)  | YES  | MUL | NULL    |       |
| cost  | decimal(5,2)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

```

```

mysql> select CONSTRAINT_NAME FROM
INFORMATION_SCHEMA.TABLE_CONSTRAINTS WHERE TABLE_NAME="employee";
+-----+
| CONSTRAINT_NAME |
+-----+
| PRIMARY         |
+-----+
1 row in set (0.11 sec)

```

```

mysql> alter table employee drop primary key ;
Query OK, 5 rows affected (0.62 sec)
Records: 5 Duplicates: 0 Warnings: 0

```

```

mysql> desc employee;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| SSN        | int(11)       | NO   |     | NULL    |       |
| Name       | varchar(100)  | NO   |     | NULL    |       |
| college    | varchar(40)   | YES  |     | V.J.T.I |       |
| age        | int(11)       | YES  |     | 20      |       |
| salary_in_$ | decimal(10,2) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

```

```

mysql> desc Orders;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id    | int(11)       | YES  | MUL | NULL    |       |
| Name  | varchar(100)  | YES  | MUL | NULL    |       |

```

```
| cost | decimal(5,2) | YES | | NULL | |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from employee;
```

```
+-----+-----+-----+-----+
| SSN | Name | college | age | salary_in_$ |
+-----+-----+-----+-----+
| 1200 | Patrik | IITB | 20 | 10000.00 |
| 1201 | Tushar | V.J.T.I | 20 | 9000.00 |
| 1202 | Viral | V.J.T.I | 20 | 8000.00 |
| 1203 | Agam | V.J.T.I | 20 | 7000.00 |
| 1204 | Vatsal | V.J.T.I | 20 | 6000.00 |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> alter table employee modify column age check(age>20);
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 use near 'check(age>20)' at line 1
mysql> alter table employee add check(age>20);
Query OK, 0 rows affected (0.14 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> insert into
employee(SSN,Name,age,salary_in_$)values(1206,"Jainam",20,7012);
Query OK, 1 row affected (0.10 sec)
```

```
mysql> select * from employee;
```

```
+-----+-----+-----+-----+
| SSN | Name | college | age | salary_in_$ |
+-----+-----+-----+-----+
| 1200 | Patrik | IITB | 20 | 10000.00 |
| 1201 | Tushar | V.J.T.I | 20 | 9000.00 |
| 1202 | Viral | V.J.T.I | 20 | 8000.00 |
| 1203 | Agam | V.J.T.I | 20 | 7000.00 |
| 1204 | Vatsal | V.J.T.I | 20 | 6000.00 |
| 1206 | Jainam | V.J.T.I | 20 | 7012.00 |
+-----+-----+-----+-----+
6 rows in set (0.01 sec)
```

```
mysql> desc employee;
```

```
+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+
| SSN | int(11) | NO | | NULL | |
| Name | varchar(100) | NO | | NULL | |
| college | varchar(40) | YES | | V.J.T.I | |
| age | int(11) | YES | | 20 | |
| salary_in_$ | decimal(10,2) | NO | | NULL | |
+-----+-----+-----+-----+
5 rows in set (0.01 sec)
```

```
mysql> insert into
employee(SSN,Name,age,salary_in_$)values(1206,"Jainam",21,7012);
Query OK, 1 row affected (0.08 sec)
```

```
mysql> select * from employee;
```

```
+-----+-----+-----+-----+
| SSN | Name | college | age | salary_in_$ |
+-----+-----+-----+-----+
| 1200 | Patrik | IITB | 20 | 10000.00 |
```

1201	Tushar	V.J.T.I	20	9000.00
1202	Viral	V.J.T.I	20	8000.00
1203	Agam	V.J.T.I	20	7000.00
1204	Vatsal	V.J.T.I	20	6000.00
1206	Jainam	V.J.T.I	20	7012.00
1206	Jainam	V.J.T.I	21	7012.00

7 rows in set (0.00 sec)

```
mysql> drop index i on Orders;
Query OK, 0 rows affected (6.48 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

*Unfortunately, MySQL does not support SQL check constraints. You can define them in your DDL query for compatibility reasons but they are just ignored.*

## Conclusion:

Thus, the concept of keys, primary key and foreign key were studied and the various constraints related to keys viz. referential integrity constraints and the entity integrity constraints were understood.

Also, various other semantic constraints, as not null, default, etc. were studied in detail and executed successfully over mysql terminal interface of Ubuntu.