

Database Management System (UE20CS301) Lab 3

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PES1UG20CS084

Creating Database:

```
create database PES1UG20CS084_Railway;
```

```
MariaDB [(none)]> create database PES1UG20CS084_Railway;  
Query OK, 1 row affected (0.020 sec)
```

Creating table Train

```
create table train(  
-> train_no int NOT NULL,  
-> train_name varchar(30),  
-> train_type varchar(20),  
-> source_station varchar(30),  
-> dest_station varchar(30),  
-> availability boolean,  
-> PRIMARY KEY(train_no));
```

```
MariaDB [PES1UG20CS084_Railway]> create table train(  
-> train_no int NOT NULL,  
-> train_name varchar(30),  
-> train_type varchar(20),  
-> source_station varchar(30),  
-> dest_station varchar(30),  
-> availability boolean,  
-> PRIMARY KEY(train_no));  
Query OK, 0 rows affected (0.046 sec)
```

```
MariaDB [PES1UG20CS084_Railway]>
```

```
MariaDB [PES1UG20CS084_Railway]> desc train;
```

Field	Type	Null	Key	Default	Extra
train_no	int(11)	NO	PRI	NULL	
train_name	varchar(30)	YES		NULL	
train_type	varchar(20)	YES		NULL	
source_station	varchar(30)	YES		NULL	
dest_station	varchar(30)	YES		NULL	
availability	tinyint(1)	YES		NULL	

6 rows in set (0.044 sec)

Creating table User

```
create table user(  
-> user_id int NOT NULL,  
-> user_type varchar(20),  
-> fname varchar(20),  
-> lname varchar(20),  
-> DOB date,  
-> age int(3),  
-> pincode int,  
-> street_no int,  
-> PRIMARY KEY(user_id));
```

```
MariaDB [PES1UG20CS084_Railway]> create table user(  
-> user_id int NOT NULL,  
-> user_type varchar(20),  
-> fname varchar(20),  
-> lname varchar(20),  
-> DOB date,  
-> age int(3),  
-> pincode int,  
-> street_no int,  
-> PRIMARY KEY(user_id));  
Query OK, 0 rows affected (0.039 sec)  
  
MariaDB [PES1UG20CS084_Railway]>
```

```
MariaDB [PES1UG20CS084_Railway]> desc user;  
+-----+-----+-----+-----+-----+-----+  
| Field      | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| user_id    | int(11)       | NO   | PRI | NULL    |       |  
| user_type  | varchar(20)   | YES  |     | NULL    |       |  
| fname      | varchar(20)   | YES  |     | NULL    |       |  
| lname      | varchar(20)   | YES  |     | NULL    |       |  
| DOB        | date          | YES  |     | NULL    |       |  
| age        | int(3)        | YES  |     | NULL    |       |  
| pincode    | int(11)       | YES  |     | NULL    |       |  
| street_no  | int(11)       | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
8 rows in set (0.028 sec)
```

Creating table Fare

```
create table fare(  
-> train_type varchar(20) NOT NULL,  
-> comp_type int,  
-> farepkm decimal(4,2),  
-> PRIMARY KEY(train_type));
```

```
MariaDB [PES1UG20CS084_Railway]> create table fare(
-> train_type varchar(20) NOT NULL,
-> comp_type int,
-> farepkm decimal(4,2),
-> PRIMARY KEY(train_type));
Query OK, 0 rows affected (0.022 sec)
```

```
MariaDB [PES1UG20CS084_Railway]> desc fare;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| train_type | varchar(20)   | NO   | PRI | NULL    |       |
| comp_type  | int(11)       | YES  |     | NULL    |       |
| farepkm    | decimal(4,2)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.017 sec)
```

Creating table Ticket

```
create table ticket(
-> VIN int NOT NULL,
-> travel_date date,
-> departure varchar(20),
-> arrival varchar(20),
-> dep_time datetime,
-> arr_time datetime,
-> user_id int,
-> train_type varchar(20),
-> comp_type int,
-> comp_no int,
-> PRIMARY KEY(VIN),
-> FOREIGN KEY(user_id) REFERENCES user(user_id),
-> FOREIGN KEY(train_type) REFERENCES fare(train_type));
```

```
MariaDB [PES1UG20CS084_Railway]> create table ticket(
-> VIN int NOT NULL,
-> travel_date date,
-> departure varchar(20),
-> arrival varchar(20),
-> dep_time datetime,
-> arr_time datetime,
-> user_id int,
-> train_type varchar(20),
-> comp_type int,
-> comp_no int,
-> PRIMARY KEY(VIN),
-> FOREIGN KEY(user_id) REFERENCES user(user_id),
-> FOREIGN KEY(train_type) REFERENCES fare(train_type));
Query OK, 0 rows affected (0.029 sec)
```

```
MariaDB [PES1UG20CS084_Railway]>
```

```
MariaDB [PES1UG20CS084_Railway]> desc ticket
-> ;
```

Field	Type	Null	Key	Default	Extra
VIN	int(11)	NO	PRI	NULL	
travel_date	date	YES		NULL	
departure	varchar(20)	YES		NULL	
arrival	varchar(20)	YES		NULL	
dep_time	datetime	YES		NULL	
arr_time	datetime	YES		NULL	
user_id	int(11)	YES	MUL	NULL	
train_type	varchar(20)	YES	MUL	NULL	
comp_type	int(11)	YES		NULL	
comp_no	int(11)	YES		NULL	

10 rows in set (0.024 sec)

Creating table Payment

```
create table payment(
-> trans_id varchar(20) NOT NULL,
-> bank varchar(50),
-> card_no int,
-> price decimal(10,2),
-> VIN int,
-> PRIMARY KEY(trans_id),
-> FOREIGN KEY(VIN) REFERENCES ticket(VIN));
```

```
MariaDB [PES1UG20CS084_Railway]> create table payment(
-> trans_id varchar(20) NOT NULL,
-> bank varchar(50),
-> card_no int,
-> price decimal(10,2),
-> VIN int,
-> PRIMARY KEY(trans_id),
-> FOREIGN KEY(VIN) REFERENCES ticket(VIN));
Query OK, 0 rows affected (0.030 sec)
```

```
MariaDB [PES1UG20CS084_Railway]> desc payment;
```

Field	Type	Null	Key	Default	Extra
trans_id	varchar(20)	NO	PRI	NULL	
bank	varchar(50)	YES		NULL	
card_no	int(11)	YES		NULL	
price	decimal(10,2)	YES		NULL	
VIN	int(11)	YES	MUL	NULL	

5 rows in set (0.012 sec)

Creating table Compartment

```
create table comp(  
  -> type varchar(20),  
  -> capacity int,  
  -> availability boolean,  
  -> comp_no int,  
  -> train_no int,  
  -> FOREIGN KEY(train_no) REFERENCES train(train_no));
```

```
MariaDB [PES1UG20CS084_Railway]> create table comp(  
  -> type varchar(20),  
  -> capacity int,  
  -> availability boolean,  
  -> comp_no int,  
  -> train_no int,  
  -> FOREIGN KEY(train_no) REFERENCES train(train_no));  
Query OK, 0 rows affected (0.032 sec)
```

```
MariaDB [PES1UG20CS084_Railway]> desc comp;  
+-----+-----+-----+-----+-----+-----+  
| Field      | Type      | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| type       | varchar(20) | YES  |     | NULL    |       |  
| capacity   | int(11)     | YES  |     | NULL    |       |  
| availability | tinyint(1)  | YES  |     | NULL    |       |  
| comp_no    | int(11)     | YES  |     | NULL    |       |  
| train_no   | int(11)     | YES  | MUL | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
5 rows in set (0.012 sec)
```

Creating table Route

```
create table route(  
  -> from_st_no int,  
  -> from_st_name varchar(20),  
  -> to_st_no int,  
  -> to_st_name varchar(20),  
  -> distance decimal(7,2),  
  -> train_no int,  
  -> FOREIGN KEY(train_no) REFERENCES train(train_no));
```

```
MariaDB [PES1UG20CS084_Railway]> create table route(  
  -> from_st_no int,  
  -> from_st_name varchar(20),  
  -> to_st_no int,  
  -> to_st_name varchar(20),  
  -> distance decimal(7,2),  
  -> train_no int,  
  -> FOREIGN KEY(train_no) REFERENCES train(train_no));  
Query OK, 0 rows affected (0.029 sec)
```

```
MariaDB [PES1UG20CS084_Railway]> desc route;
```

Field	Type	Null	Key	Default	Extra
from_st_no	int(11)	YES		NULL	
from_st_name	varchar(20)	YES		NULL	
to_st_no	int(11)	YES		NULL	
to_st_name	varchar(20)	YES		NULL	
distance	decimal(7,2)	YES		NULL	
train_no	int(11)	YES	MUL	NULL	

```
6 rows in set (0.012 sec)
```

Creating table User_train

```
create table user_train(
  -> date_time_stamp datetime,
  -> train_no int,
  -> user_id int,
  -> FOREIGN KEY(train_no) REFERENCES train(train_no),
  -> FOREIGN KEY(user_id) REFERENCES user(user_id));
```

```
MariaDB [PES1UG20CS084_Railway]> create table user_train(
  -> date_time_stamp datetime,
  -> train_no int,
  -> user_id int,
  -> FOREIGN KEY(train_no) REFERENCES train(train_no),
  -> FOREIGN KEY(user_id) REFERENCES user(user_id));
Query OK, 0 rows affected (0.029 sec)
```

```
MariaDB [PES1UG20CS084_Railway]> desc user_train;
```

Field	Type	Null	Key	Default	Extra
date_time_stamp	datetime	YES		NULL	
train_no	int(11)	YES	MUL	NULL	
user_id	int(11)	YES	MUL	NULL	

```
3 rows in set (0.012 sec)
```

Creating table Ticket_passenger

```
create table ticket_passenger(
  -> name varchar(20),
  -> age int,
  -> seat_no varchar(6),
  -> VIN int,
  -> FOREIGN KEY(VIN) REFERENCES ticket(VIN));
```



```
MariaDB [PES1UG20CS084_Railway]> create table ticket_passenger(
-> name varchar(20),
-> age int,
-> seat_no varchar(6),
-> VIN int,
-> FOREIGN KEY(VIN) REFERENCES ticket(VIN));
Query OK, 0 rows affected (0.028 sec)
```

```
MariaDB [PES1UG20CS084_Railway]> desc ticket_passenger;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| name  | varchar(20) | YES  |     | NULL    |       |
| age   | int(11)     | YES  |     | NULL    |       |
| seat_no | varchar(6)  | YES  |     | NULL    |       |
| VIN   | int(11)     | YES  | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.012 sec)
```

Creating table User_phone

```
create table user_phone(
-> phone_number int(10),
-> user_id int,
-> FOREIGN KEY(user_id) REFERENCES user(user_id));
```

```
MariaDB [PES1UG20CS084_Railway]> create table user_phone(
-> phone_number int(10),
-> user_id int,
-> FOREIGN KEY(user_id) REFERENCES user(user_id));
Query OK, 0 rows affected (0.030 sec)
```

```
MariaDB [PES1UG20CS084_Railway]> desc user_phone;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| phone_number | int(10)   | YES  |     | NULL    |       |
| user_id     | int(11)   | YES  | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.012 sec)
```

PHPMyadmin

Visiting `localhost/phpmyadmin`

Adding `NOT NULL` constraint on `train_name` and `train_type`:

```
ALTER TABLE train
MODIFY train_type varchar(20) NOT NULL;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0016 seconds.)

```
ALTER TABLE train MODIFY train_type varchar(20) NOT NULL;
```

```
ALTER TABLE train  
MODIFY train_name varchar(30) NOT NULL;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
ALTER TABLE train MODIFY train_name varchar(30) NOT NULL;
```

Adding default constraint for compartment table setting `availability` attribute to Yes:

```
ALTER TABLE comp  
ALTER availability SET DEFAULT 1;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
ALTER TABLE comp ALTER availability SET DEFAULT 1;
```

VIN should be unique:

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
ALTER TABLE ticket ADD UNIQUE(VIN);
```

Add check constraints to Age in the invoice (Age to be greater than 5):

```
ALTER TABLE user  
ADD CONSTRAINT check_age CHECK(age>5);
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0512 seconds.)

```
ALTER TABLE user ADD CONSTRAINT check_age CHECK(age>5);
```

Rename any existing table name:

```
ALTER TABLE user_phone  
RENAME TO user_phno;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
ALTER TABLE user_phone RENAME TO user_phno;
```

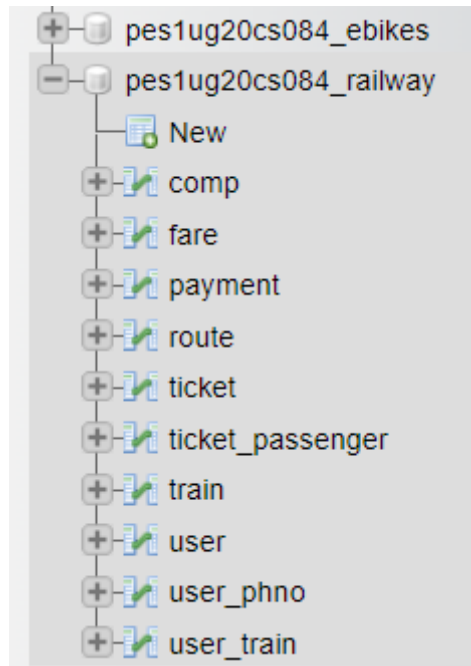

Use `truncate` and `drop` commands:

```
TRUNCATE table user_phno;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0009 seconds.)

```
TRUNCATE table user_phno;
```

Before Drop:



```
DROP table user_phno;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0010 seconds.)

```
DROP table user_phno;
```

After Drop:

