

# PROGRAM 1

Consider the Insurance database given below. The primary keys are underlined and the data types are specified.

**PERSON** (driver-id #: String, name: String, address: String)

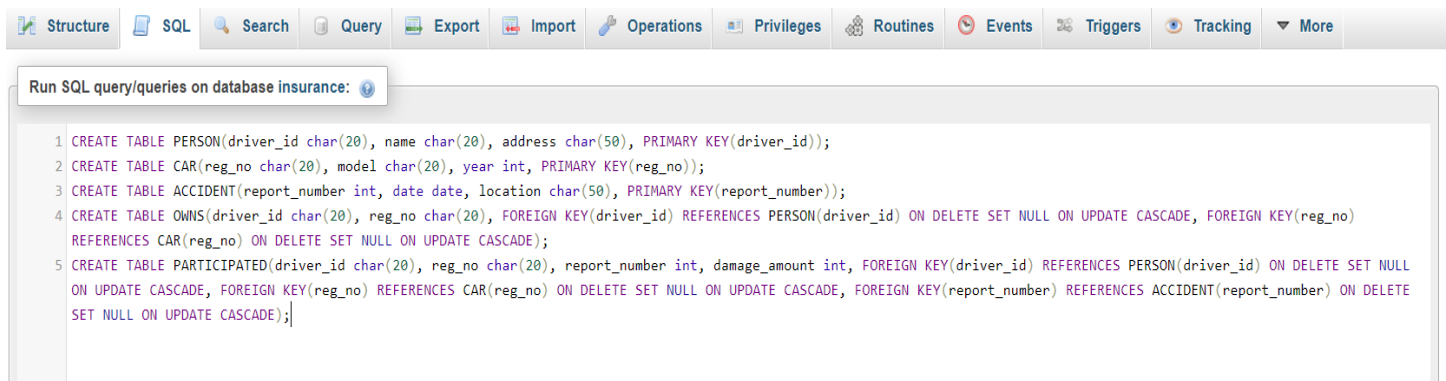
**CAR** (regno: String, model: String, year: int)

**ACCIDENT** (report-number: int, date: date, location: String)

**OWNS** (driver-id #: String, Regno: String)

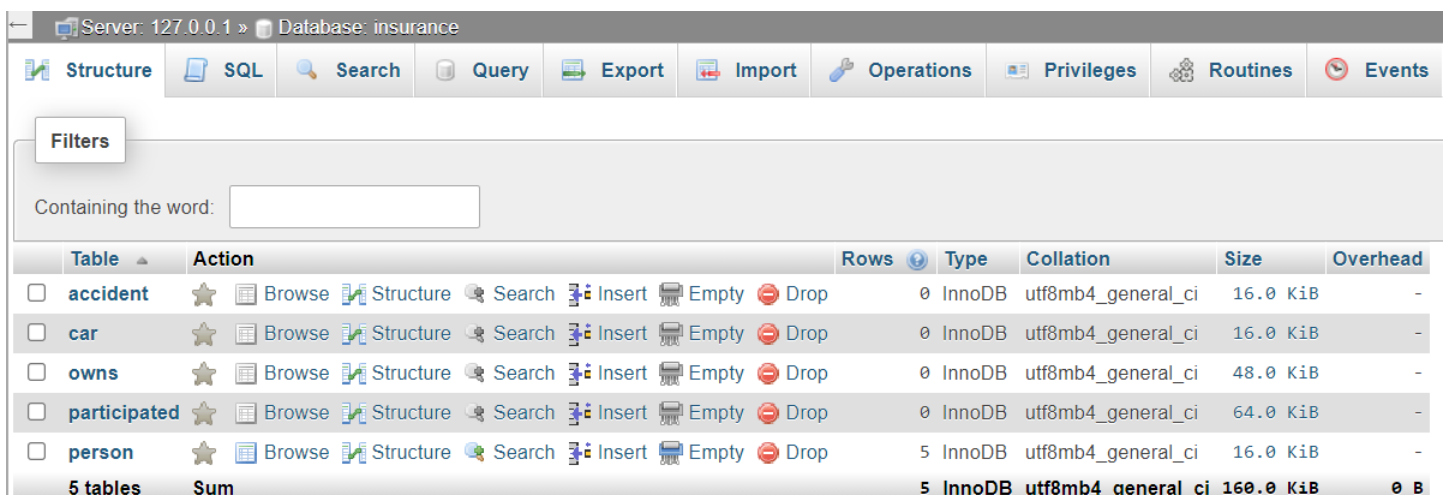
**PARTICIPATED** (driver-id: String, regno: String, report-number: int, damage-amount: int)

1) Create the above tables by properly specifying the primary keys and the foreign keys.



The screenshot shows a database management tool interface with a menu bar (Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, Events, Triggers, Tracking, More) and a toolbar. Below the toolbar is a text area with the following SQL query:

```
1 CREATE TABLE PERSON(driver_id char(20), name char(20), address char(50), PRIMARY KEY(driver_id));
2 CREATE TABLE CAR(reg_no char(20), model char(20), year int, PRIMARY KEY(reg_no));
3 CREATE TABLE ACCIDENT(report_number int, date date, location char(50), PRIMARY KEY(report_number));
4 CREATE TABLE OWNS(driver_id char(20), reg_no char(20), FOREIGN KEY(driver_id) REFERENCES PERSON(driver_id) ON DELETE SET NULL ON UPDATE CASCADE, FOREIGN KEY(reg_no)
REFERENCES CAR(reg_no) ON DELETE SET NULL ON UPDATE CASCADE);
5 CREATE TABLE PARTICIPATED(driver_id char(20), reg_no char(20), report_number int, damage_amount int, FOREIGN KEY(driver_id) REFERENCES PERSON(driver_id) ON DELETE SET NULL
ON UPDATE CASCADE, FOREIGN KEY(reg_no) REFERENCES CAR(reg_no) ON DELETE SET NULL ON UPDATE CASCADE, FOREIGN KEY(report_number) REFERENCES ACCIDENT(report_number) ON DELETE
SET NULL ON UPDATE CASCADE);
```

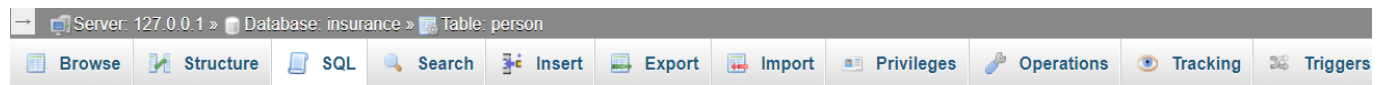


The screenshot shows a database management tool interface with a menu bar (Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, Events) and a toolbar. Below the toolbar is a 'Filters' section with a text input field labeled 'Containing the word:'. Below the filters is a table showing the structure of the database.

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> accident	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> car	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> owns	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
<input type="checkbox"/> participated	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	64.0 KiB	-
<input type="checkbox"/> person	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
5 tables	Sum	5	InnoDB	utf8mb4_general_ci	160.0 KiB	0 B

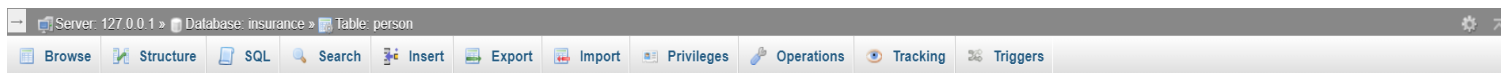
## 2) Enter at least 5 tuples for each relation.

### 'PERSON' table:



Run SQL query/queries on table insurance.person:

```
1 INSERT INTO person(driverid, name, address) VALUES ('D102','Abhishek','Hebbal');
2 INSERT INTO person(driverid, name, address) VALUES ('D101','Sakshi','Basavangudi');
3 INSERT INTO person(driverid, name, address) VALUES ('D104','Taniya','Sahakarnagar');
4 INSERT INTO person(driverid, name, address) VALUES ('D103','Akshay','Yelahanka');
5 INSERT INTO person(driverid, name, address) VALUES ('D105','Shreya','JP Nagar');
```



Show query box

✓ 1 row inserted. (Query took 0.4008 seconds.)

```
INSERT INTO PERSON(driver_id, name, address) VALUES ('D102','Abhishek','Hebbal')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0497 seconds.)

```
INSERT INTO PERSON(driver_id, name, address) VALUES ('D101','Sakshi','Basavangudi')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0536 seconds.)

```
INSERT INTO PERSON(driver_id, name, address) VALUES ('D104','Taniya','Sahakarnagar')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.1037 seconds.)

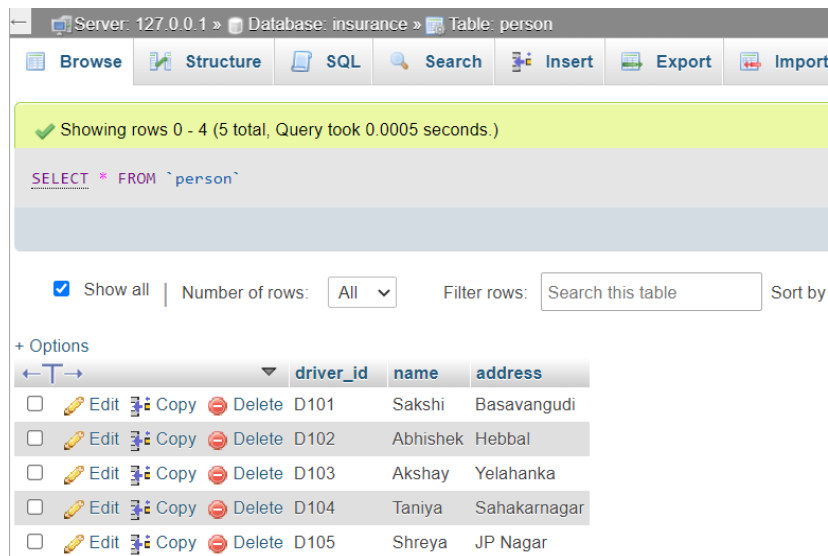
```
INSERT INTO PERSON(driver_id, name, address) VALUES ('D103','Akshay','Yelahanka')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0430 seconds.)

```
INSERT INTO PERSON(driver_id, name, address) VALUES ('D105','Shreya','JP Nagar')
```

[Edit inline] [Edit] [Create PHP code]



## 'CAR' table:

Server: 127.0.0.1 » Database: insurance » Table: car

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Privileges](#)

Run SQL query/queries on table insurance.car:

```
1 INSERT INTO CAR(reg_no, model, year) VALUES ('R201','Baleno',2012);
2 INSERT INTO CAR(reg_no, model, year) VALUES ('R202','Swift',2010);
3 INSERT INTO CAR(reg_no, model, year) VALUES ('R203','Maruti',2011);
4 INSERT INTO CAR(reg_no, model, year) VALUES ('R204','Honda',2008);
5 INSERT INTO CAR(reg_no, model, year) VALUES ('R205','Hyundai',2009);
```

Server: 127.0.0.1 » Database: insurance » Table: car

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Privileges](#) [Operations](#) [Tracking](#) [Triggers](#)

Show query box

✓ 1 row inserted. (Query took 0.1359 seconds.)

```
INSERT INTO CAR(reg_no, model, year) VALUES ('R201','Baleno',2012)
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ 1 row inserted. (Query took 0.0294 seconds.)

```
INSERT INTO CAR(reg_no, model, year) VALUES ('R202','Swift',2010)
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ 1 row inserted. (Query took 0.0708 seconds.)

```
INSERT INTO CAR(reg_no, model, year) VALUES ('R203','Maruti',2011)
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ 1 row inserted. (Query took 0.0316 seconds.)

```
INSERT INTO CAR(reg_no, model, year) VALUES ('R204','Honda',2008)
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ 1 row inserted. (Query took 0.0325 seconds.)

```
INSERT INTO CAR(reg_no, model, year) VALUES ('R205','Hyundai',2009)
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

Server: 127.0.0.1 » Database: insurance » Table: car

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Privileges](#)

✓ Showing rows 0 - 4 (5 total, Query took 0.0008 seconds.)

```
SELECT * FROM `car`
```

☐ Show all | Number of rows:  | Filter rows:  | Sort by key:

+ Options

			reg_no	model	year
<input type="checkbox"/>				R201	Baleno 2012
<input type="checkbox"/>				R202	Swift 2010
<input type="checkbox"/>				R203	Maruti 2011
<input type="checkbox"/>				R204	Honda 2008
<input type="checkbox"/>				R205	Hyundai 2009

## 'ACCIDENT' table:

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

Run SQL query/queries on table insurance.accident:

```
1 INSERT INTO ACCIDENT(report_number, date, location) VALUES (1001,'2020-08-14','MG Road');
2 INSERT INTO ACCIDENT(report_number, date, location) VALUES (1020,'2021-04-13','Church Street');
3 INSERT INTO ACCIDENT(report_number, date, location) VALUES (1031,'2021-04-01','Yelahanka');
4 INSERT INTO ACCIDENT(report_number, date, location) VALUES (1016,'2019-12-13','Whitefield');
5 INSERT INTO ACCIDENT(report_number, date, location) VALUES (1045,'2020-05-21','Basavanagudi');
```

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

Tracking

Triggers

Show query box

✓ 1 row inserted. (Query took 0.2212 seconds.)

```
INSERT INTO ACCIDENT(report_number, date, location) VALUES (1001,'2020-08-14','MG Road')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0863 seconds.)

```
INSERT INTO ACCIDENT(report_number, date, location) VALUES (1020,'2021-04-13','Church Street')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.1024 seconds.)

```
INSERT INTO ACCIDENT(report_number, date, location) VALUES (1031,'2021-04-01','Yelahanka')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0406 seconds.)

```
INSERT INTO ACCIDENT(report_number, date, location) VALUES (1016,'2019-12-13','Whitefield')
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0421 seconds.)

```
INSERT INTO ACCIDENT(report_number, date, location) VALUES (1045,'2020-05-21','Basavanagudi')
```

[Edit inline] [Edit] [Create PHP code]

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

✓ Showing rows 0 - 4 (5 total, Query took 0.0007 seconds.)

```
SELECT * FROM `accident`
```

☐ Show all

Number of rows: 25

Filter rows: Search this table

Sort by key: None

+ Options

report\_number

date

location

☐ Edit ☐ Copy ☐ Delete

10012020-08-14MG Road

☐ Edit ☐ Copy ☐ Delete

10162019-12-13Whitefield

☐ Edit ☐ Copy ☐ Delete

10202021-04-13Church Street

☐ Edit ☐ Copy ☐ Delete

10312021-04-01Yelahanka

☐ Edit ☐ Copy ☐ Delete

10452020-05-21Basavanagudi

## 'OWNS' table:

Server: 127.0.0.1 » Database: insurance » Table: owns

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Privileges](#)

Run SQL query/queries on table insurance.owns: [?](#)

```
1 INSERT INTO OWNS(driver_id, reg_no) VALUES ('D102','R201');
2 INSERT INTO OWNS(driver_id, reg_no) VALUES ('D103','R204');
3 INSERT INTO OWNS(driver_id, reg_no) VALUES ('D105','R202') ;
4
```

Server: 127.0.0.1 » Database: insurance » Table: owns

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Privileges](#) [Operations](#) [Tracking](#) [Triggers](#)

Show query box

✓ 1 row inserted. (Query took 0.1512 seconds.)

```
INSERT INTO OWNS(driver_id, reg_no) VALUES ('D102','R201')
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ 1 row inserted. (Query took 0.0264 seconds.)

```
INSERT INTO OWNS(driver_id, reg_no) VALUES ('D103','R204')
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ 1 row inserted. (Query took 0.0684 seconds.)

```
INSERT INTO OWNS(driver_id, reg_no) VALUES ('D105','R202')
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

Server: 127.0.0.1 » Database: insurance » Table: owns

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#)

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy a

✓ Showing rows 0 - 2 (3 total, Query took 0.0007 seconds.)

```
SELECT * FROM `owns`
```

☐ Show all | Number of rows:  Filter rows:

+ Options

driver_id	reg_no
-----------	--------

D102	R201
------	------

D103	R204
------	------

D105	R202
------	------

## 'PARTICIPATED' table:

Server: 127.0.0.1 » Database: insurance » Table: participated

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

Run SQL query/queries on table insurance.participated:

1

2

3

4

```
INSERT INTO PARTICIPATED(driver_id, reg_no, report_number, damage_amount) VALUES ('D102','R201',1020,1500);
INSERT INTO PARTICIPATED(driver_id, reg_no, report_number, damage_amount) VALUES ('D103','R204',1031,2000);
INSERT INTO PARTICIPATED(driver_id, reg_no, report_number, damage_amount) VALUES ('D104','R205',1045,3000);
```

Server: 127.0.0.1 » Database: insurance » Table: participated

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

Tracking

Triggers

Show query box

✓ 1 row inserted. (Query took 0.1562 seconds.)

```
INSERT INTO PARTICIPATED(driver_id, reg_no, report_number, damage_amount) VALUES ('D102','R201',1020,1500)
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0278 seconds.)

```
INSERT INTO PARTICIPATED(driver_id, reg_no, report_number, damage_amount) VALUES ('D103','R204',1031,2000)
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.1018 seconds.)

```
INSERT INTO PARTICIPATED(driver_id, reg_no, report_number, damage_amount) VALUES ('D104','R205',1045,3000)
```

[Edit inline] [Edit] [Create PHP code]

Server: 127.0.0.1 » Database: insurance » Table: participated

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available

✓ Showing rows 0 - 2 (3 total, Query took 0.0006 seconds.)

```
SELECT * FROM `participated`
```

☐ Show all

Number of rows: 

25

Filter rows: 

Search this table

Sort by key: 

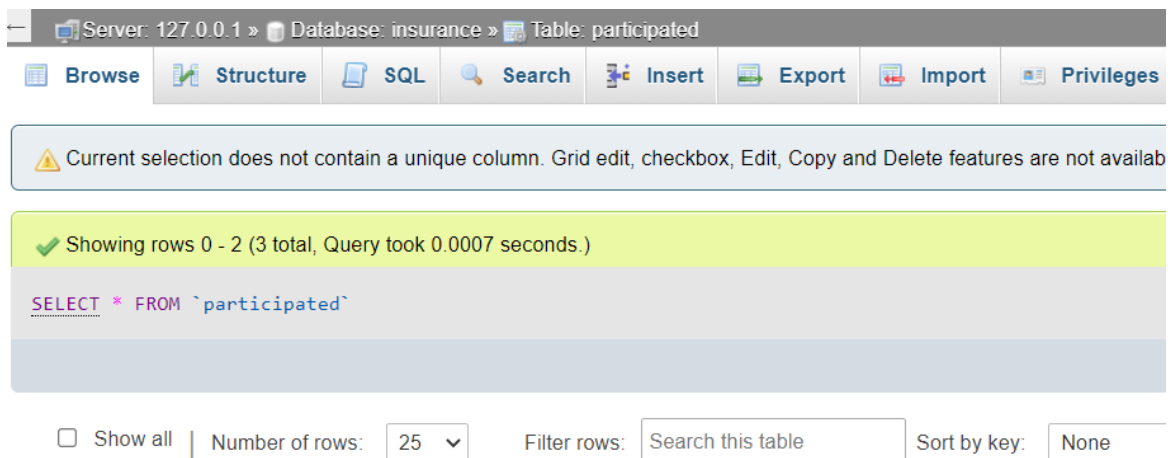
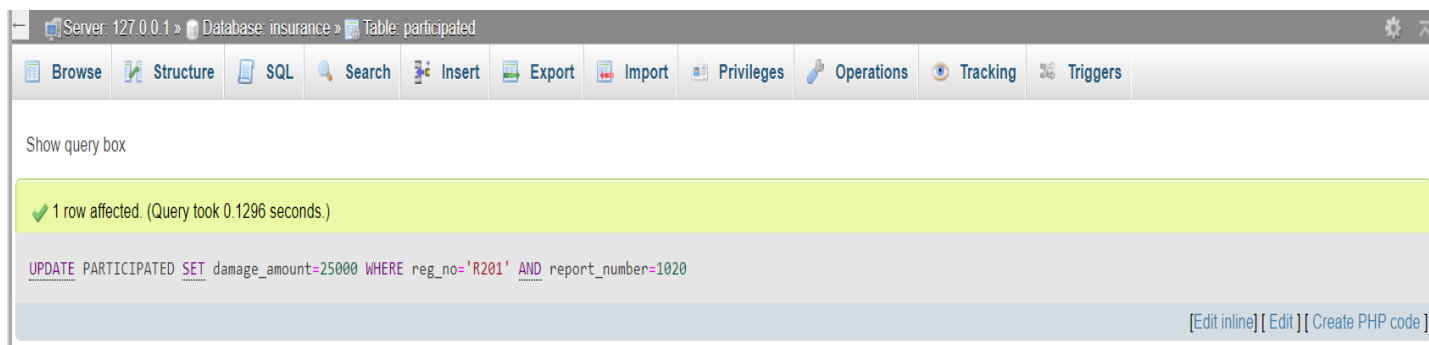
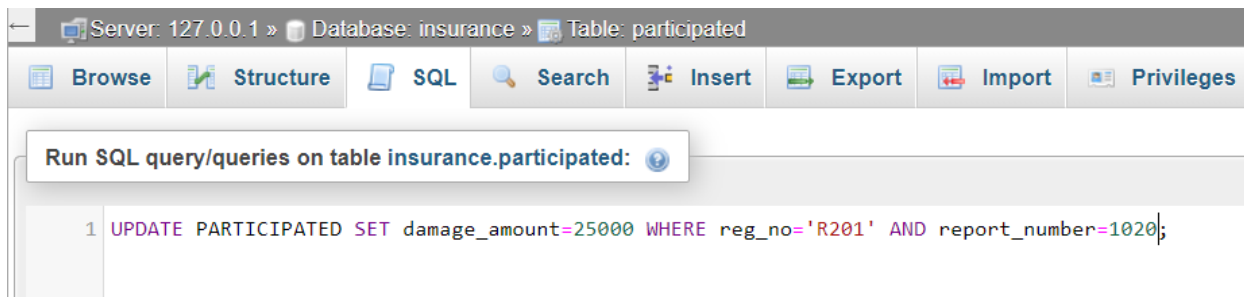
None

+ Options

driver_id	reg_no	report_number	damage_amount
D102	R201	1020	1500
D103	R204	1031	2000
D104	R205	1045	3000

### 3) Demonstrate how you

- a) Update the damage amount for the car with a specific Regno in the accident with report number 12 to 25000.



+ Options

driver_id	reg_no	report_number	damage_amount
D102	R201	1020	25000
D103	R204	1031	2000
D104	R205	1045	3000

## b) Add a new accident to the database.

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse Structure SQL Search Insert Export Import Privileges Operations

Run SQL query/queries on table insurance.accident:

```
1 INSERT INTO ACCIDENT (report_number,date, location) VALUES (1037,'2021-03-17','Sahakarnagar')
```

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers

Show query box

✓ 1 row inserted. (Query took 0.1072 seconds.)

```
INSERT INTO ACCIDENT (report_number,date, location) VALUES (1037,'2021-03-17','Sahakarnagar')
```

[Edit inline] [Edit] [Create PHP code]

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse Structure SQL Search Insert Export Import Privileges Operations

✓ Showing rows 0 - 5 (6 total, Query took 0.0006 seconds.)

```
SELECT * FROM `accident`
```

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	report_number	date	location
<input type="checkbox"/> Edit Copy Delete	1001	2020-08-14	MG Road
<input type="checkbox"/> Edit Copy Delete	1016	2019-12-13	Whitefield
<input type="checkbox"/> Edit Copy Delete	1020	2021-04-13	Church Street
<input type="checkbox"/> Edit Copy Delete	1031	2021-04-01	Yelahanka
<input type="checkbox"/> Edit Copy Delete	1037	2021-03-17	Sahakarnagar
<input type="checkbox"/> Edit Copy Delete	1045	2020-05-21	Basavanagudi



4) Find the total number of people who owned cars that were involved in accidents in 2021.

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse Structure SQL Search Insert Export Import Privileges

Run SQL query/queries on table insurance.accident:

```
1 SELECT COUNT(DISTINCT driver_id) CNT FROM PARTICIPATED A, ACCIDENT B WHERE
2 A.report_number=B.report_number AND B.date LIKE '2021%';
```

Server: 127.0.0.1 » Database: insurance » Table: accident

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking

Show query box

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Your SQL query has been executed successfully.

```
SELECT COUNT(DISTINCT driver_id) CNT FROM PARTICIPATED A, ACCIDENT B WHERE A.report_number=B.report_number AND B.date LIKE '2021%'
```

☐ Profiling

+ Options

CNT
2

5) Find the number of accidents in which cars belonging to a specific model (say 'Hyundai') were involved.

Server: 127.0.0.1 » Database: insurance » Table: car

Browse Structure SQL Search Insert Export Import Privileges

Run SQL query/queries on table insurance.car: ?

```
1 SELECT COUNT(report_number) CNT FROM PARTICIPATED A, CAR B WHERE A.reg_no=B.reg_no AND
2 model='Hyundai';
```

Server: 127.0.0.1 » Database: insurance » Table: car

Browse Structure SQL Search Insert Export Import Privileges Operations

Show query box

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available. ?

Your SQL query has been executed successfully.

```
SELECT COUNT(report_number) CNT FROM PARTICIPATED A, CAR B WHERE A.reg_no=B.reg_no AND model='Hyundai'
```

+ Options

CNT
1