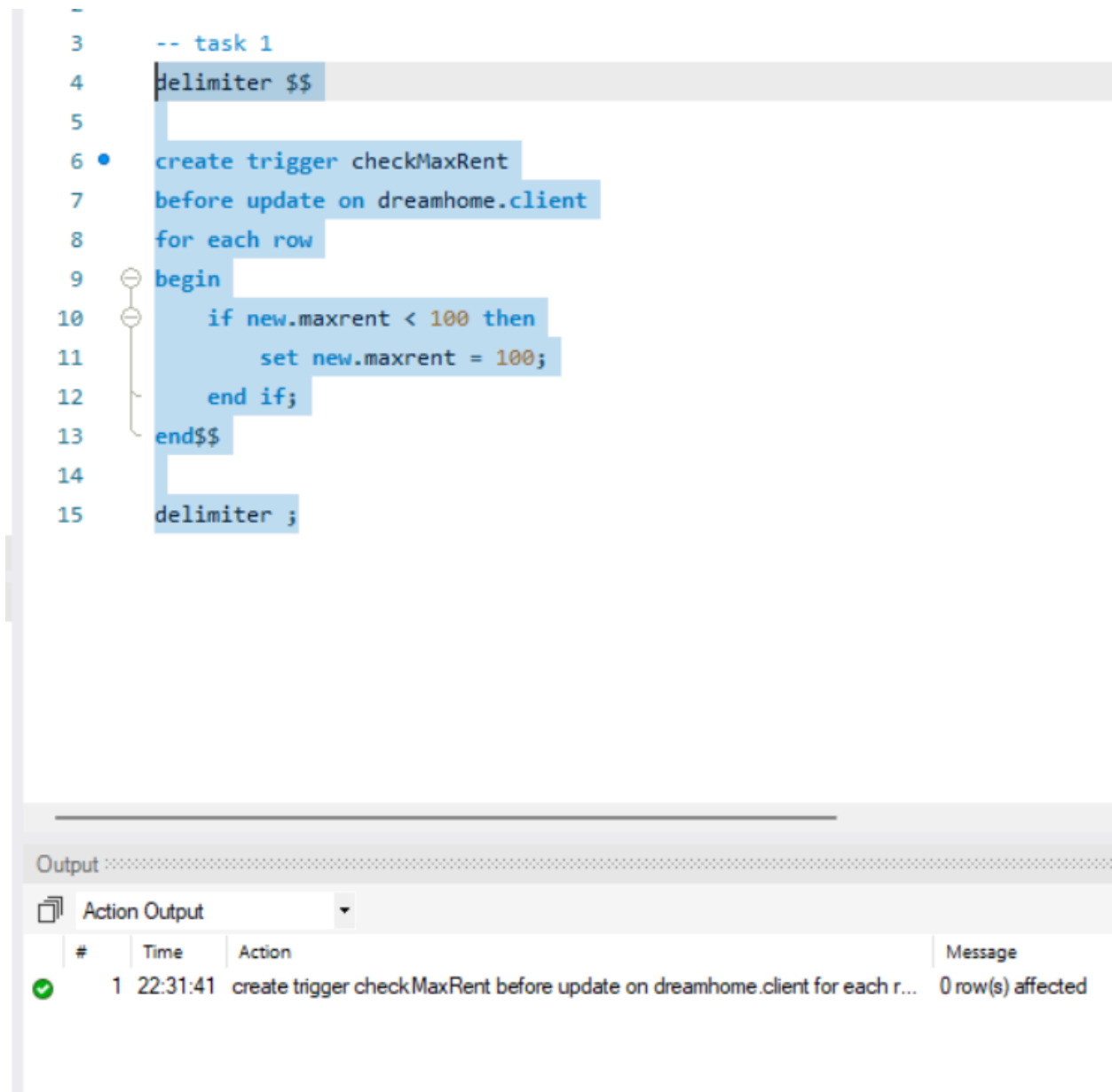


Keiran Berry

Database Lab 9

Task 1:



The screenshot displays a database IDE interface. The top section shows a SQL script being edited. The script defines a trigger named `checkMaxRent` that fires before an update on the `dreamhome.client` table. The trigger logic checks if the new `maxrent` value is less than 100; if so, it sets `maxrent` to 100. The script uses `delimiter $$` to separate the trigger definition from the rest of the code.

```
-- task 1
delimiter $$
create trigger checkMaxRent
before update on dreamhome.client
for each row
begin
    if new.maxrent < 100 then
        set new.maxrent = 100;
    end if;
end$$
delimiter ;
```

The bottom section of the IDE shows the 'Output' window, which is currently displaying 'Action Output'. It contains a single entry indicating that the trigger was successfully created.

#	Time	Action	Message
1	22:31:41	create trigger checkMaxRent before update on dreamhome.client for each r...	0 row(s) affected

We can see in the above screenshot that the trigger `checkMaxRent` has been created.

Task 2:

- a. Updating max rent to 450:

```
17 • -- task 2
18   update client
19   set maxrent = 450
20   where clientno = 'CR56';
21
22 • select * from client;
23
```

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap

	clientNo	fName	lName	telNo	prefType	maxRent	email
▶	CR56	Aline	Stewart	0141-848-1825	Flat	450	astewart@hotmail.com
	CR62	Mary	Tregear	01224-196720	Flat	600	maryt@hotmail.co.uk
	CR74	Mike	Ritchie	01475-392178	House	750	mr Ritchie01@yahoo.co.uk
	CR76	John	Kay	0207-774-5632	Flat	425	john.kay@gmail.com
✱	NULL	NULL	NULL	NULL	NULL	NULL	NULL

We can see that the max rent for CR56 has been updated to 450, and the trigger did not do anything since all of the max rents are above 100.

- b. Updating max rent to 85:

```
24 • update client
25   set maxrent = 85
26   where clientno = 'CR56';
27
28 • select * from client;
```

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap C

	clientNo	fName	lName	telNo	prefType	maxRent	email
▶	CR56	Aline	Stewart	0141-848-1825	Flat	100	astewart@hotmail.com
	CR62	Mary	Tregear	01224-196720	Flat	600	maryt@hotmail.co.uk
	CR74	Mike	Ritchie	01475-392178	House	750	mritchie01@yahoo.co.uk
	CR76	John	Kay	0207-774-5632	Flat	425	john.kay@gmail.com
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

We can see in the screenshot that the trigger worked and set the new max rent to 100 rather than the 85 that we put in.

Task 3:

```
30  -- task 3
31  delimiter $$
32
33  create trigger checkMaxRentBeforeInsert
34  before insert on dreamhome.client
35  for each row
36  begin
37      if new.maxrent < 100 then
38          signal sqlstate '45000' -- throw a custom exception
39          set message_text = 'maxrent must be at least $100';
40      end if;
41  end$$
42
43  delimiter ;
```

Output

Action Output

#	Time	Action	Message
1	22:40:00	create trigger checkMaxRentBeforeInsert before insert on dreamhome.client ...	0 row(s) affected

We can see in the above screenshot that we created a trigger which alerts the user that the maxrent should be at least 100 and aborts, using a signal command.

Task 4:

- Insert a user with max rent 450:

```

45 • -- task 4
46 insert into dreamhome.client (clientno, fname, lname, telno, preftype, maxrent, email)
47 values ('CR01', 'keiran', 'berry', '012-345-6789', 'House', 450, 'keiranberry@gmail.com');
48
49 • select * from client;
50

```

Result Grid

	clientNo	fName	lName	telNo	prefType	maxRent	email
▶	CR01	keiran	berry	012-345-6789	House	450	keiranberry@gmail.com
	CR56	Aline	Stewart	0141-848-1825	Flat	100	astewart@hotmail.com
	CR62	Mary	Tregear	01224-196720	Flat	600	maryt@hotmail.co.uk
	CR74	Mike	Ritchie	01475-392178	House	750	mritchie01@yahoo.co.uk
	CR76	John	Kay	0207-774-5632	Flat	425	john.kay@gmail.com

We can see in the screenshot that I was able to add myself as a client with no issues, since the max rent was above \$100.

b. Insert a user with max rent 85:

```

50
51 • insert into dreamhome.client (clientno, fname, lname, telno, preftype, maxrent, email)
52 values ('CR02', 'john', 'smith', '123-456-7890', 'Flat', 85, 'john.smith@email.com');

```

Output

Action Output

#	Time	Action	Message
1	22:46:51	insert into dreamhome.client (clientno, fname, lname, telno, preftype, maxrent...	Error Code: 1644. maxrent must be at least \$100

We can see that the trigger succeeded, and the insert failed with a message explaining that the max rent should be at least 100.

Task 5:

```


54  -- task 5
55  • create table dreamhome.deletedClients (
56      id int auto_increment primary key,
57      clientNo varchar(10),
58      deletedAt timestamp default current_timestamp
59  );
60
61  delimiter $$
62
63  • create trigger logDeletion
64  after delete on dreamhome.client
65  for each row
66  begin
67      insert into dreamhome.deletedClients (clientno)
68      values (old.clientno);
69  end$$
70
71  delimiter ;

```

Output			
Action Output			
#	Time	Action	Message
✓ 1	22:51:30	create table dreamhome.deletedClients (id int auto_increment primary key,...	0 row(s) affected
✓ 2	22:51:30	create trigger logDeletion after delete on dreamhome.client for each row begi...	0 row(s) affected

I have created a table for deleted clients and created a trigger which will log the deletion of a client with a timestamp of when they were deleted.

```
72
73 • delete from client
74     where clientno = 'CR01';
75
76 • select * from deletedClients;
```

Result Grid			
Filter Rows: <input type="text"/>			
Edit: 			
	id	clientNo	deletedAt
▶	1	CR01	2025-04-27 22:54:57
★	NULL	NULL	NULL

We can see that the deletion now adds the deleted client to the deletedClients table, as expected!