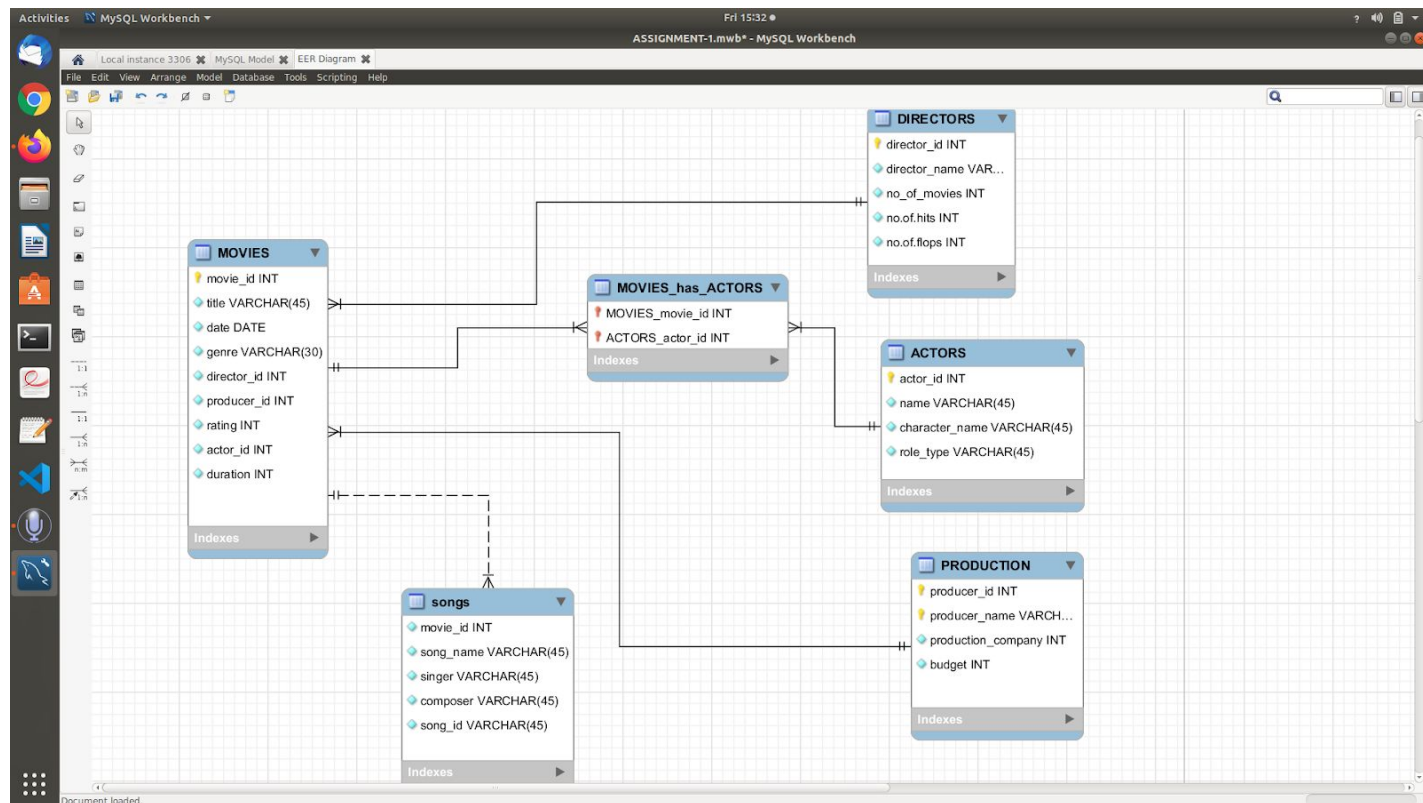


1. Showcase one Many-Many relation.

Output: Here MOVIES TO ACTORS has many to many relation.



2. Represent Composite key and Weak Entity in your Database

Weak entity :

Songs

(because it has no primary key and it is completely dependent on MOVIES)

Composite key :

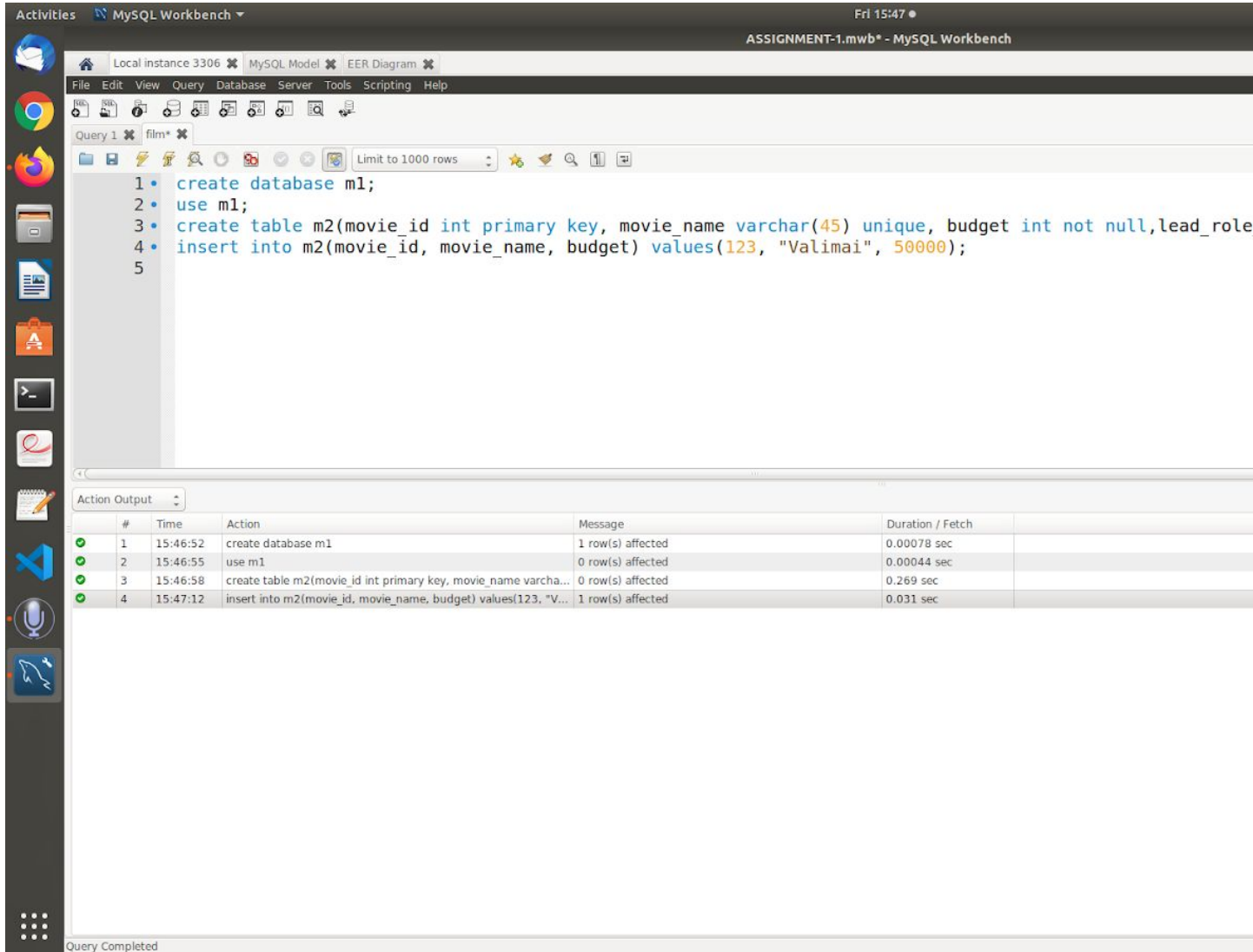
In MOVIES_has_ACTORS entity:

primary_key(MOVIES_movie_id,ACTORS_actor_id)

3. Show Violation of Primary Key, Unique Not Null and default key constraints through insertion.

i)violation of primary key

Created table m2 with primary key 123 :



The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The main editor window displays the following SQL queries:

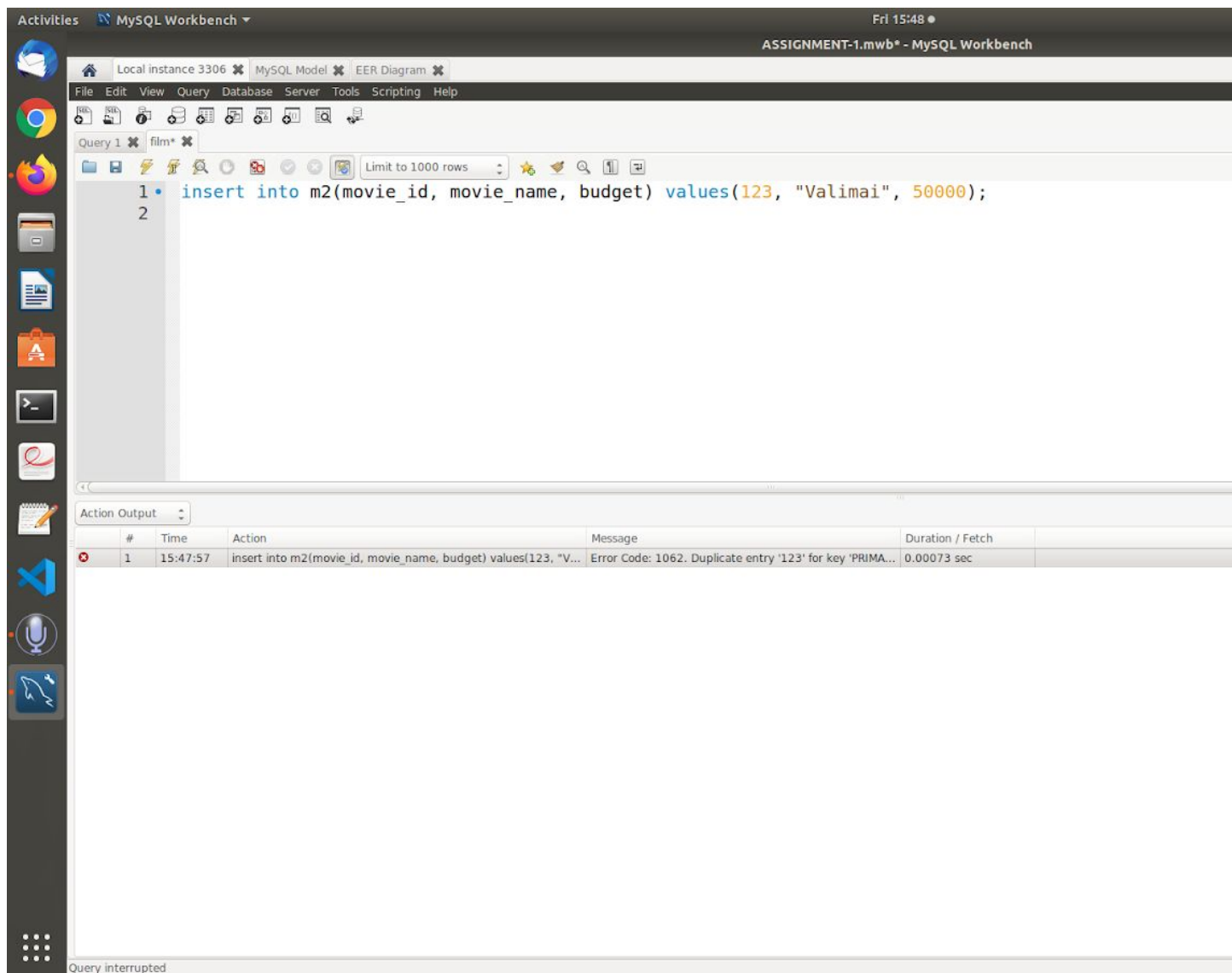
```
1 • create database m1;
2 • use m1;
3 • create table m2(movie_id int primary key, movie_name varchar(45) unique, budget int not null, lead_role
4 • insert into m2(movie_id, movie_name, budget) values(123, "Valimai", 50000);
5
```

Below the editor, the 'Action Output' tab is selected, showing a table with the execution results of the queries:

#	Time	Action	Message	Duration / Fetch
1	15:46:52	create database m1	1 row(s) affected	0.00078 sec
2	15:46:55	use m1	0 row(s) affected	0.00044 sec
3	15:46:58	create table m2(movie_id int primary key, movie_name varchar(45) unique, budget int not null, lead_role	0 row(s) affected	0.269 sec
4	15:47:12	insert into m2(movie_id, movie_name, budget) values(123, "V...	1 row(s) affected	0.031 sec

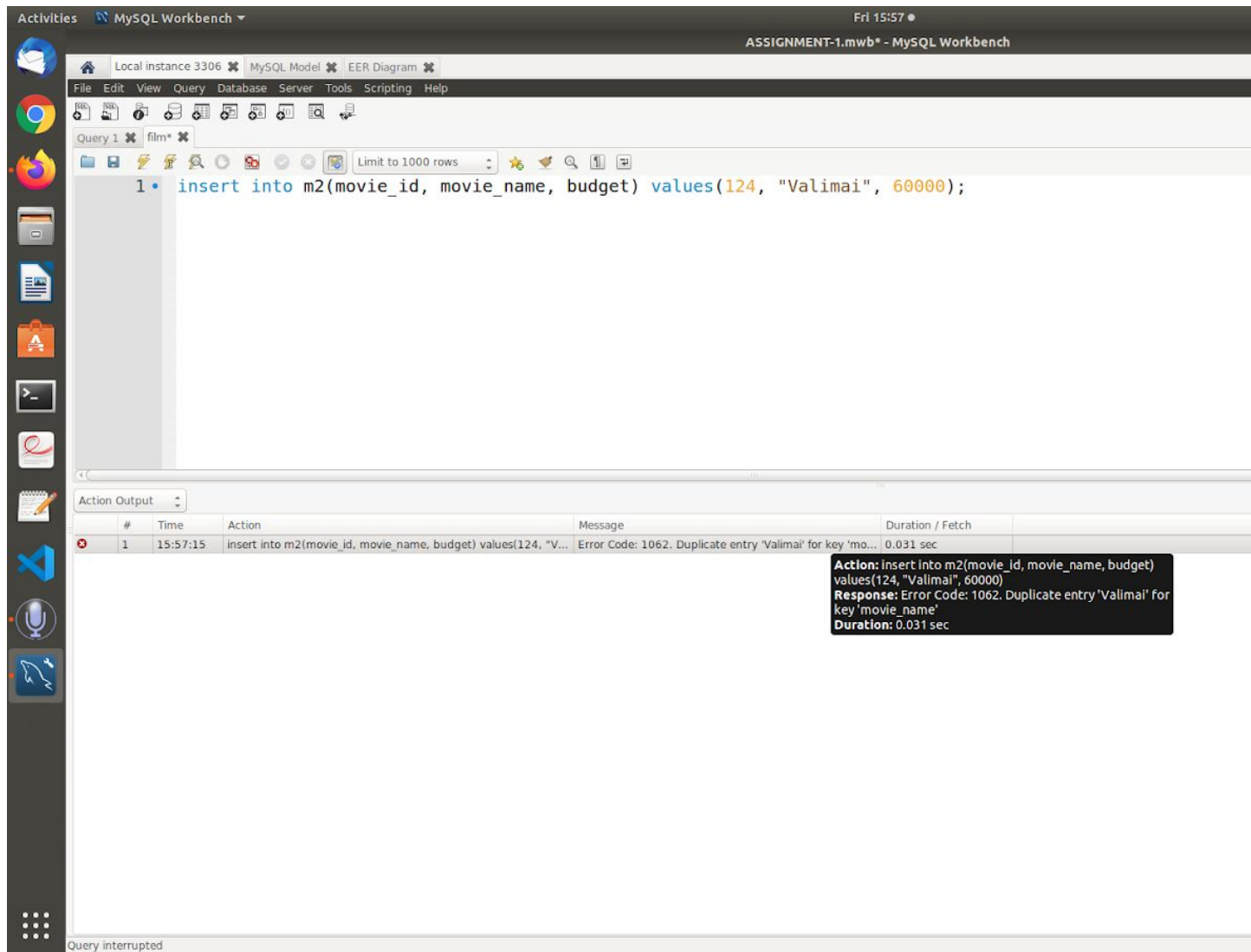
The status bar at the bottom indicates 'Query Completed'.

Now if we try to insert values with the same primary key(123) ,it shows duplicate entry, which means there is already a tuple with primary key as 123. So it clearly shows the violation of the primary key.



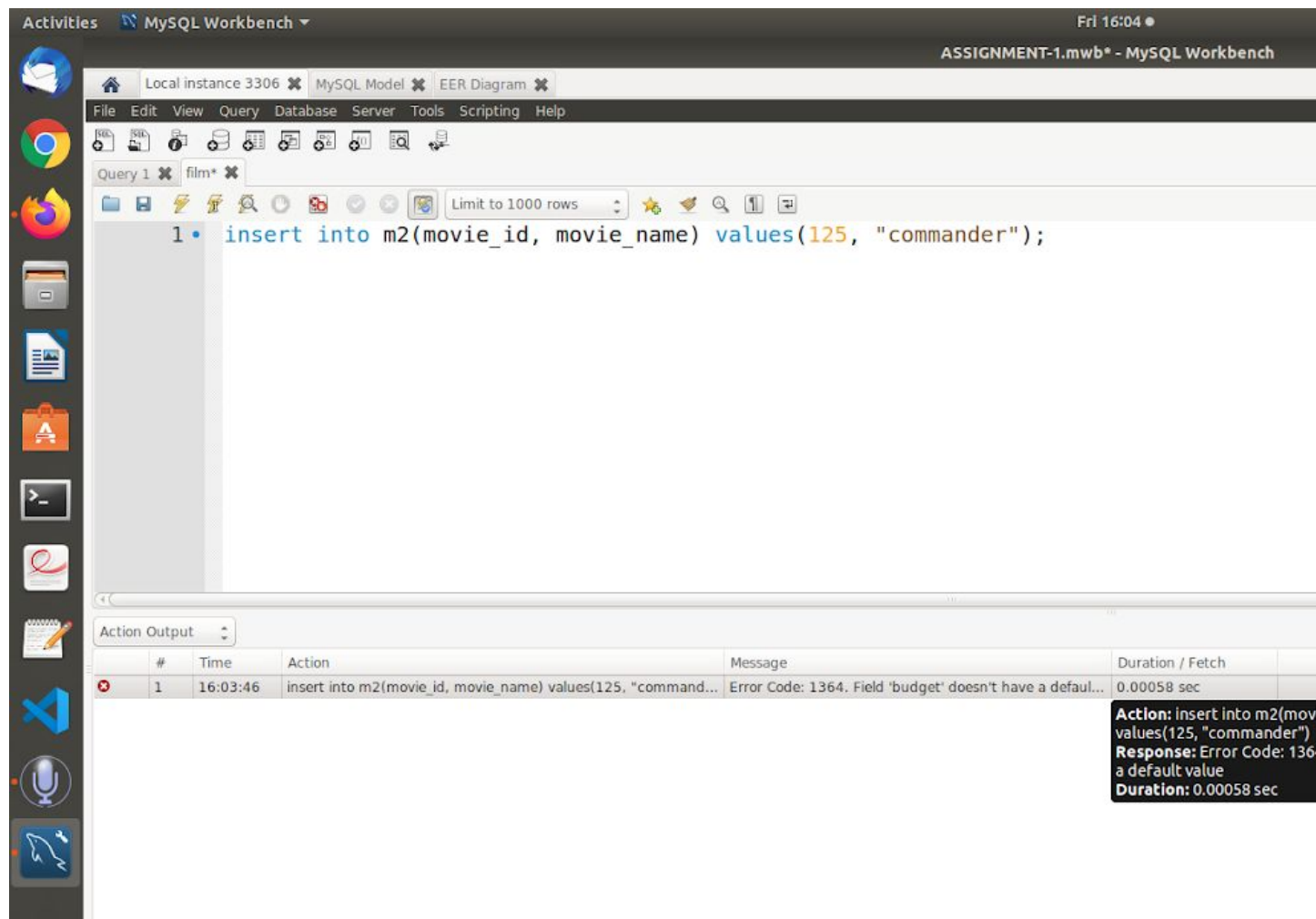
ii)violation of unique constraint

In the above screenshot we can see that movie_name “valimai” has already been inserted ,now if we try to insert the same movie_name “valimai” with a different primary key,it shows that movie_name should be unique.



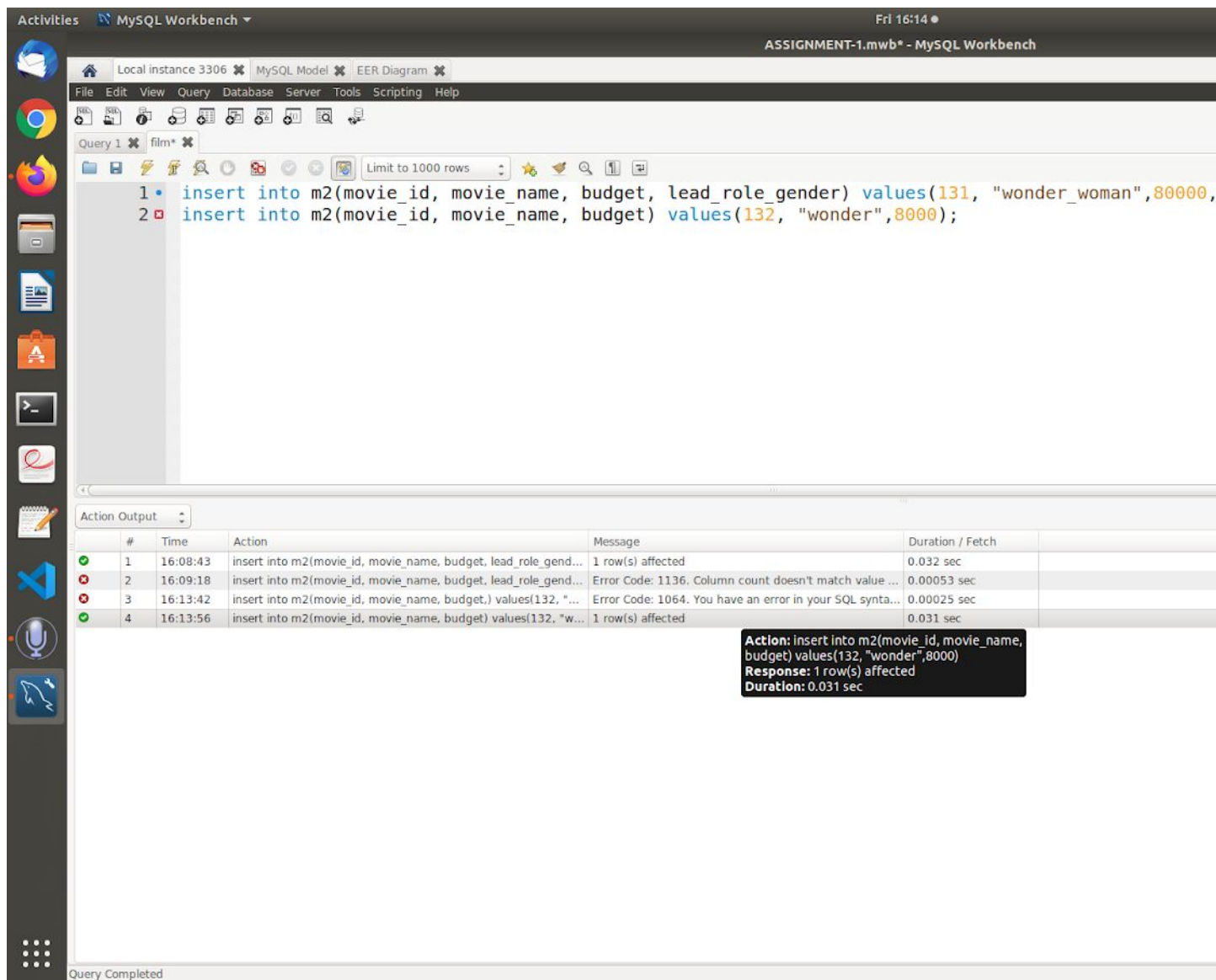
iii) violation of not null constraint

While creating table m2 we created attribute “budget” with not null constraint now if we try to insert into table with no value for “budget” it violates the not null constraint



iv) default key constraints

Here for lead_role_gender attribute we gave default value as "male", so if we try to insert values into table without mentioning any value for lead_role_gender, it will successfully execute without any error.



4. One Derived attribute should be added to the Database design

Here in the table producer, the attribute profits is derived from attributes collections and investments i.e $\text{profits} = \text{collections} - \text{investments}$.

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The main window displays a query in the 'Query 1' tab:

```

1 create table producer(producer_id int primary key,company_name varchar(50) not null,investmen
2 insert into producer values(1,'abcd',1000,9000,collections-investment);
3 desc producer;
4 select * from producer;

```

The 'Result Grid' shows the output of the query. It has columns: #, producer_id, company_name, investment, collections, profit. The first row shows the result of the 'select * from producer' query:

#	producer_id	company_name	investment	collections	profit
1	1	abcd	1000	9000	8000

The 'Action Output' tab shows the execution details of the queries:

#	Time	Action	Message	Duration / Fetch
1	16:26:47	create table producer(producer_id int primary key,company_n...	0 row(s) affected	0.235 sec
2	16:28:06	insert into producer values(1,'abcd',1000,9000,collections-inv...	1 row(s) affected	0.031 sec
3	16:28:18	desc producer	5 row(s) returned	0.00063 sec / 0.000...
4	16:28:43	select * from producer LIMIT 0, 1000	1 row(s) returned	0.00034 sec / 0.000...

The status bar at the bottom indicates 'Query Completed'.

5. Insert tuples into the table and see how foreign key constraint works if you try to insert into the dependent table first.

Here in table songs1 the foreign key is “movie_id” referencing table “m2”. Initially we did not insert any value with primary key “456” in table “m2”,so if we try to insert values to table “songs1” with movie_id as “456” it violates foreign key constraint.

ActivitiesMySQL Workbench

Fri 16:38

ASSIGNMENT-1.mwb - MySQL Workbench

Local instance 3306MySQL ModelEER Diagram

FileEditViewQueryDatabaseServerToolsScriptingHelp

Query 1film*Limit to 1000 rows

```
1 create table songs1(movie_id int,song_id int,song_name varchar(45), singer varchar(45), composer
2 foreign key(movie_id) references m2(movie_id));
3 insert into songs1 values(456,5,"Dil_bechara", "Mariam", "ar_rahman");
4
```

Action Output

#	Time	Action	Message	Duration / Fetch
1	16:38:24	create table songs1(movie_id int,song_id int,song_name varchar...	0 row(s) affected	0.365 sec
2	16:38:28	insert into songs1 values(456,5,"Dil_bechara", "Mariam", "ar_r...	Error Code: 1452. Cannot add or update a child row: a...	0.044 sec

Action: insert into songs1 values(456,5,"Dil_bechara", "Mariam", "ar_rahman")

Response: Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails CONSTRAINT `songs1_ibfk_1` FOREIGN KEY (`movie_id`) REFERENCES `m2` (`movie_id`))

Duration: 0.044 sec

Query interrupted