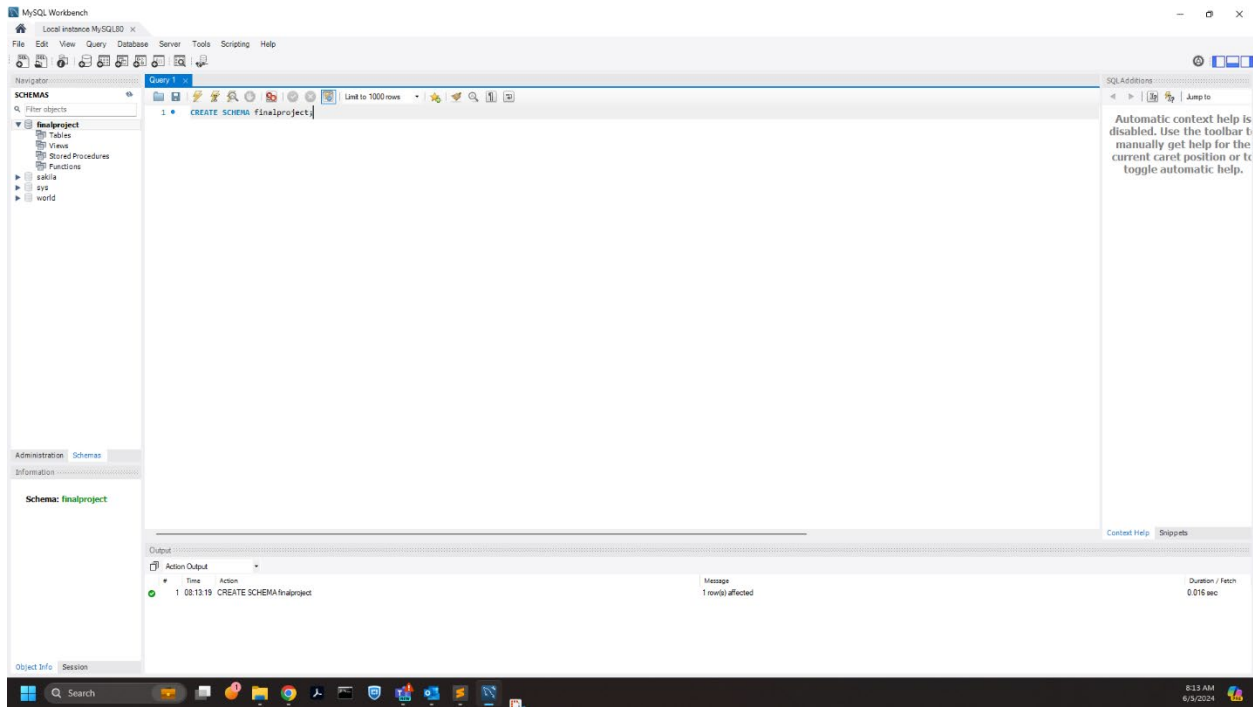


Warren Spears

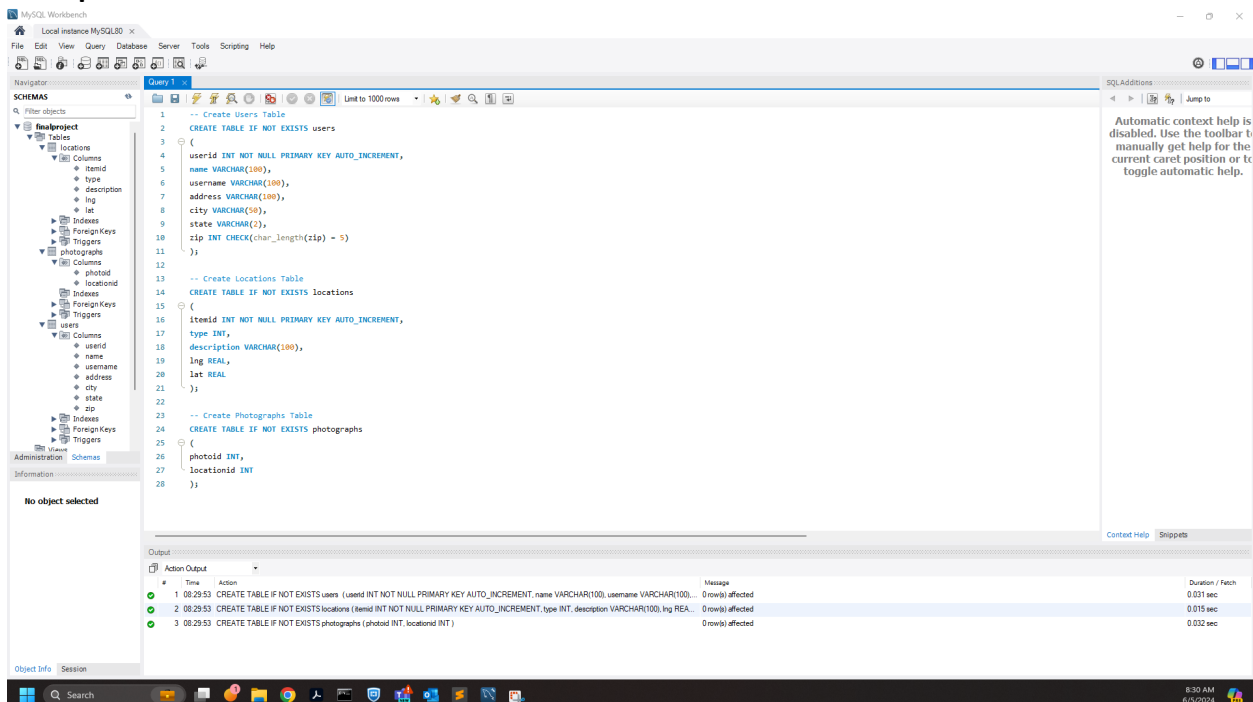
Computer Science 303 Database Management

6/5/2024

Prompt 1



Prompt 2



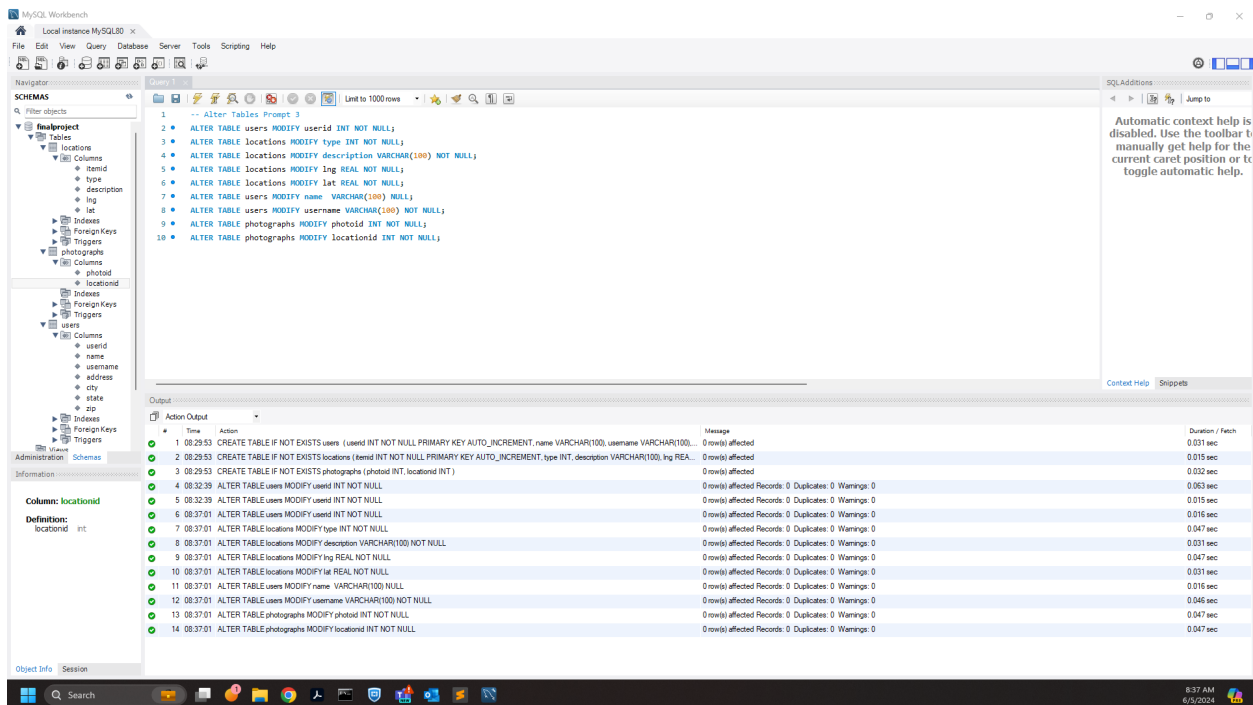
-- Create Tables Prompt 2

```
CREATE TABLE IF NOT EXISTS users ( userid INT NOT NULL PRIMARY KEY AUTO_INCREMENT,  
name VARCHAR(100), username VARCHAR(100), address VARCHAR(100), city VARCHAR(50),  
state VARCHAR(2), zip INT CHECK(char_length(zip) = 5) );
```

```
CREATE TABLE IF NOT EXISTS locations ( itemid INT NOT NULL PRIMARY KEY AUTO_INCREMENT,  
type INT, description VARCHAR(100), lng REAL, lat REAL );
```

```
CREATE TABLE IF NOT EXISTS photographs ( photoid INT, locationid INT );
```

Prompt 3



The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'Schemas' tree with 'finalproject' selected. The main window shows 'Query 1' with 14 SQL statements. The 'Output' tab at the bottom displays the execution results for each statement, including timestamps, actions, and status messages.

Time	Action	Message	Duration / Fetch
1 08:29:53	CREATE TABLE IF NOT EXISTS users (userid INT NOT NULL PRIMARY KEY AUTO_INCREMENT, name VARCHAR(100), username VARCHAR(100), address VARCHAR(100), city VARCHAR(50), state VARCHAR(2), zip INT CHECK(char_length(zip) = 5));	0 rows(s) affected	0.031 sec
2 08:29:53	CREATE TABLE IF NOT EXISTS locations (itemid INT NOT NULL PRIMARY KEY AUTO_INCREMENT, type INT, description VARCHAR(100), lng REAL, lat REAL);	0 rows(s) affected	0.015 sec
3 08:29:53	CREATE TABLE IF NOT EXISTS photographs (photoid INT, locationid INT);	0 rows(s) affected	0.032 sec
4 08:32:39	ALTER TABLE users MODIFY userid INT NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.063 sec
5 08:32:39	ALTER TABLE users MODIFY username VARCHAR(100) NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
6 08:37:01	ALTER TABLE users MODIFY name VARCHAR(100) NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.016 sec
7 08:37:01	ALTER TABLE locations MODIFY type INT NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
8 08:37:01	ALTER TABLE locations MODIFY description VARCHAR(100) NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
9 08:37:01	ALTER TABLE locations MODIFY lng REAL NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
10 08:37:01	ALTER TABLE locations MODIFY lat REAL NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
11 08:37:01	ALTER TABLE users MODIFY address VARCHAR(100) NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.016 sec
12 08:37:01	ALTER TABLE users MODIFY city VARCHAR(50) NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.046 sec
13 08:37:01	ALTER TABLE photographs MODIFY photoid INT NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
14 08:37:01	ALTER TABLE photographs MODIFY locationid INT NOT NULL;	0 rows(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec

-- Alter Tables Prompt 3

```
ALTER TABLE users MODIFY userid INT NOT NULL;
```

```
ALTER TABLE users MODIFY userid INT NOT NULL;
```

```
ALTER TABLE users MODIFY userid INT NOT NULL;
```

```
ALTER TABLE locations MODIFY type INT NOT NULL;
```

```
ALTER TABLE locations MODIFY description VARCHAR(100) NOT NULL;
```

```
ALTER TABLE locations MODIFY lng REAL NOT NULL;
```

ALTER TABLE locations MODIFY lat REAL NOT NULL;

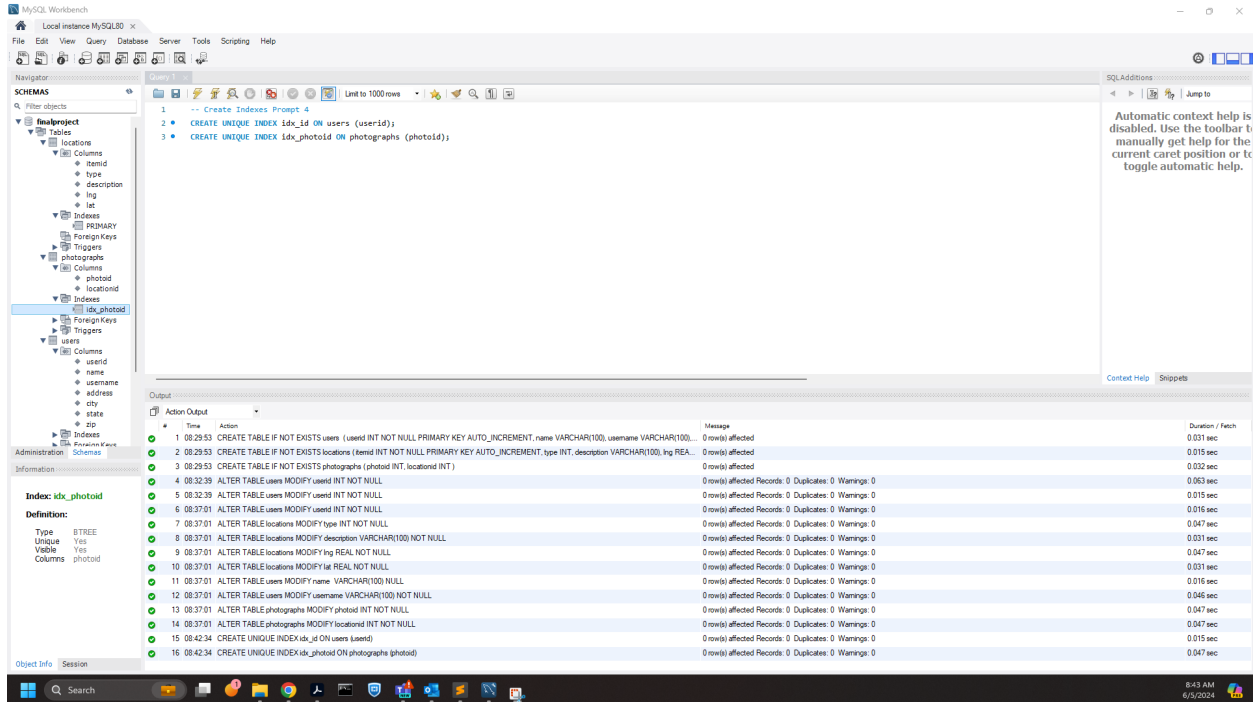
ALTER TABLE users MODIFY name VARCHAR(100) NULL;

ALTER TABLE users MODIFY username VARCHAR(100) NOT NULL;

ALTER TABLE photographs MODIFY photoid INT NOT NULL;

ALTER TABLE photographs MODIFY locationid INT NOT NULL;

Prompt 4



-- Create Indexes Prompt 4

CREATE UNIQUE INDEX idx_id ON users (userid);

CREATE UNIQUE INDEX idx_photoid ON photographs (photoid);

Prompt 5

The screenshot displays the MySQL Workbench interface. The 'Query' tab is active, showing a SQL prompt to insert data into the 'users' table. The prompt is as follows:

```
-- Insert data into Users Table Prompt 5
1  INSERT INTO users (userid, name, username, address, city, state, zip) VALUES
2  (1, 'Bonnie Buntcake', 'bbunt', '6709 Wonder Street', 'Wonderbread', 'OH', '46106'),
3  (2, 'Sam Smarf', 'ssmarf', '356 A Street', 'Beefy', 'PA', '19943'),
4  (3, 'Wendy Grog', 'wgrog', '900 Star Street', 'Mary', 'MD', '21340'),
5  (4, 'Joe Jogger', 'jjogger', '183713 N North Street', 'Nortner', 'WV', '51423');
6
7
8  SELECT * FROM users;
```

The 'Results' grid shows the output of the query, displaying four rows of user data:

userid	name	username	address	city	state	zip
1	Bonnie Buntcake	bbunt	6709 Wonder Street	Wonderbread	OH	46106
2	Sam Smarf	ssmarf	356 A Street	Beefy	PA	19943
3	Wendy Grog	wgrog	900 Star Street	Mary	MD	21340
4	Joe Jogger	jjogger	183713 N North Street	Nortner	WV	51423

The 'Output' tab shows the execution log, including the following actions:

- ALTER TABLE locations MODIFY description VARCHAR(100) NOT NULL
- ALTER TABLE locations MODIFY id REAL NOT NULL
- ALTER TABLE locations MODIFY id REAL NOT NULL
- ALTER TABLE users MODIFY name VARCHAR(100) NOT NULL
- ALTER TABLE users MODIFY username VARCHAR(100) NOT NULL
- ALTER TABLE photographs MODIFY photo_id INT NOT NULL
- ALTER TABLE photographs MODIFY photo_id INT NOT NULL
- CREATE UNIQUE INDEX id_idx ON users (userid)
- CREATE UNIQUE INDEX id_idx ON photographs (photo_id)
- INSERT INTO users (name, username, address, city, state, zip) VALUES ('Bonnie Buntcake', 'bbunt', '6709 Wonder Street', 'Wonderbread', 'OH', '46106')
- INSERT INTO users (name, username, address, city, state, zip) VALUES ('Sam Smarf', 'ssmarf', '356 A Street', 'Beefy', 'PA', '19943')
- INSERT INTO users (name, username, address, city, state, zip) VALUES ('Wendy Grog', 'wgrog', '900 Star Street', 'Mary', 'MD', '21340')
- INSERT INTO users (name, username, address, city, state, zip) VALUES ('Joe Jogger', 'jjogger', '183713 N North Street', 'Nortner', 'WV', '51423')

-- Insert Data Into Users Table Prompt 5

INSERT INTO users (userid, name, username, address, city, state, zip) VALUES

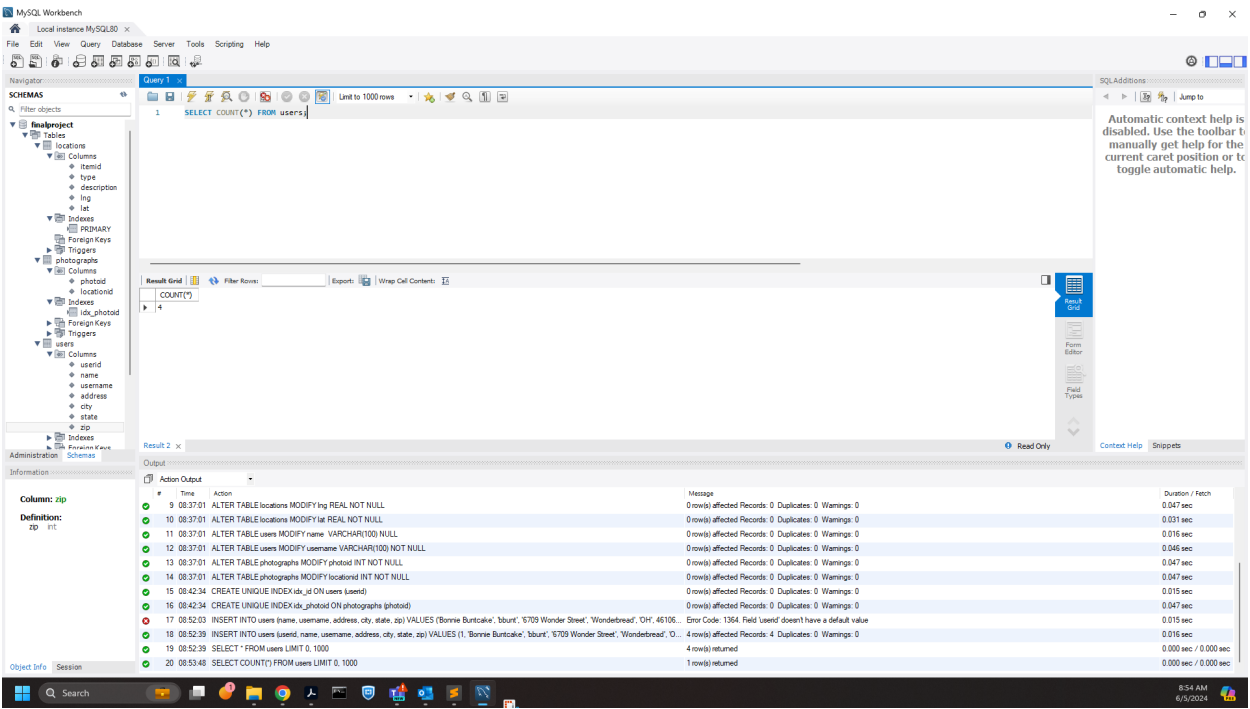
(1, 'Bonnie Buntcake', 'bbunt', '6709 Wonder Street', 'Wonderbread', 'OH', '46106'),

(2, 'Sam Smarf', 'ssmarf', '356 A Street', 'Beefy', 'PA', '19943'),

(3, 'Wendy Grog', 'wgrog', '900 Star Street', 'Mary', 'MD', '21340'),

(4, 'Joe Jogger', 'jjogger', '183713 N North Street', 'Nortner', 'WV', '51423');

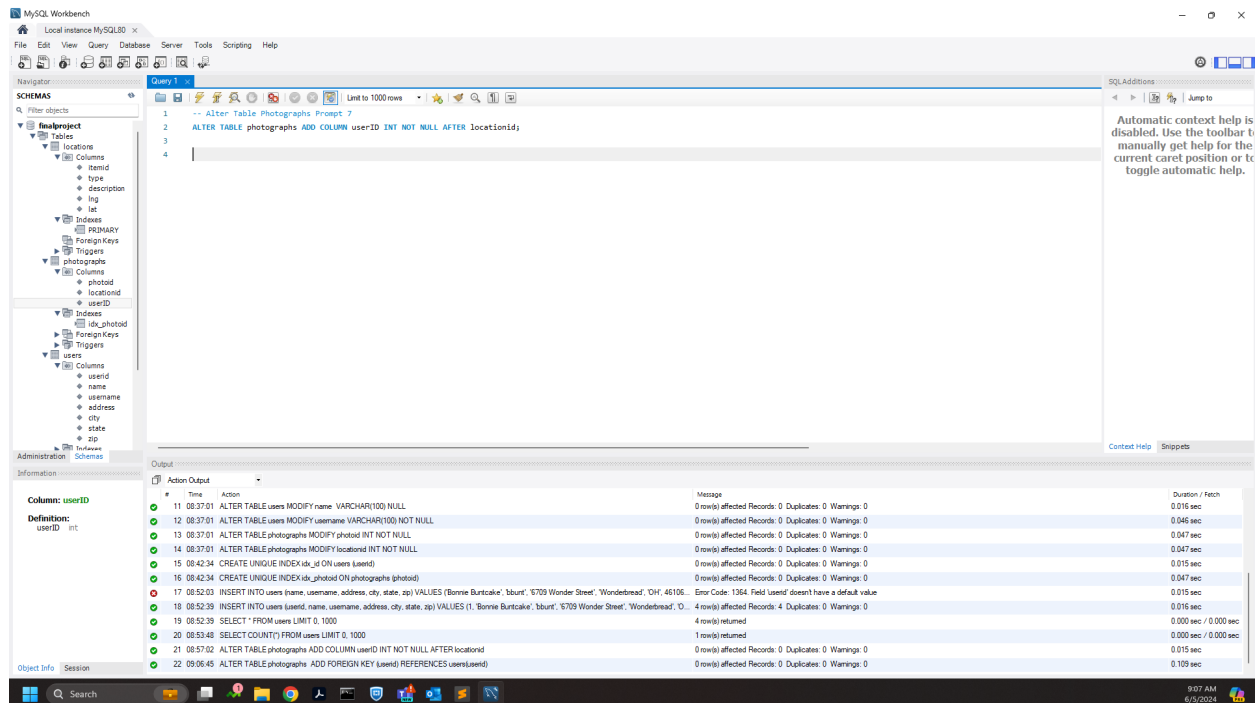
Prompt 6



-- Prompt 6

SELECT count(*) from users;

Prompt 7



The screenshot displays the MySQL Workbench interface. The query editor shows the following SQL command:

```
-- Alter Table Photographs Prompt 7
ALTER TABLE photographs ADD COLUMN userID INT NOT NULL AFTER locationid;
```

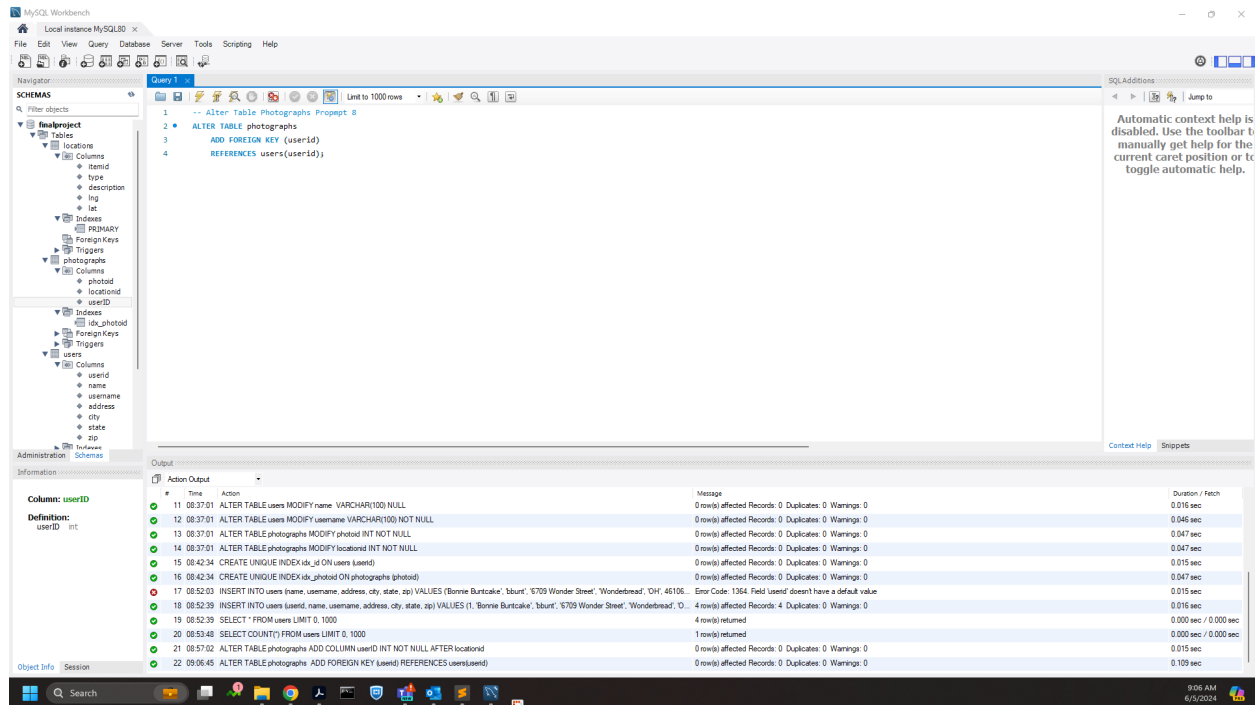
The output pane shows the results of the queries. The first query, `ALTER TABLE users MODIFY name VARCHAR(100) NULL`, was executed successfully. The second query, `ALTER TABLE users MODIFY username VARCHAR(100) NOT NULL`, was also executed successfully. The third query, `ALTER TABLE photographs MODIFY photoid INT NOT NULL`, was executed successfully. The fourth query, `ALTER TABLE photographs MODIFY locationid INT NOT NULL`, was executed successfully. The fifth query, `CREATE UNIQUE INDEX idx_id ON users (userid)`, was executed successfully. The sixth query, `CREATE UNIQUE INDEX idx_photoid ON photographs (photoid)`, was executed successfully. The seventh query, `INSERT INTO users (name, username, address, city, state, zip) VALUES ('Bonnie Burtcake', 'bburt', '6709 Wonder Street', 'Wonderbread', 'OH', 45106)`, was executed successfully. The eighth query, `SELECT * FROM users LIMIT 0, 1000`, returned 4 rows. The ninth query, `SELECT COUNT(*) FROM users LIMIT 0, 1000`, returned 1 row. The tenth query, `ALTER TABLE photographs ADD COLUMN userID INT NOT NULL AFTER locationid`, was executed successfully. The eleventh query, `ALTER TABLE photographs ADD FOREIGN KEY (userID) REFERENCES users(userID)`, was executed successfully.

Action	Time	Message	Duration / Match
ALTER TABLE users MODIFY name VARCHAR(100) NULL	11 08:37:01	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.016 sec
ALTER TABLE users MODIFY username VARCHAR(100) NOT NULL	12 08:37:01	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.046 sec
ALTER TABLE photographs MODIFY photoid INT NOT NULL	13 08:37:01	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
ALTER TABLE photographs MODIFY locationid INT NOT NULL	14 08:37:01	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
CREATE UNIQUE INDEX idx_id ON users (userid)	15 08:42:34	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
CREATE UNIQUE INDEX idx_photoid ON photographs (photoid)	16 08:42:34	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
INSERT INTO users (name, username, address, city, state, zip) VALUES ('Bonnie Burtcake', 'bburt', '6709 Wonder Street', 'Wonderbread', 'OH', 45106)	17 08:52:03	Error Code: 1364. Field 'userid' doesn't have a default value	0.015 sec
SELECT * FROM users LIMIT 0, 1000	18 08:52:39	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.016 sec
SELECT COUNT(*) FROM users LIMIT 0, 1000	20 08:53:48	1 row(s) returned	0.000 sec / 0.000 sec
ALTER TABLE photographs ADD COLUMN userID INT NOT NULL AFTER locationid	21 08:57:02	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
ALTER TABLE photographs ADD FOREIGN KEY (userID) REFERENCES users(userID)	22 09:06:45	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.109 sec

-- Alter Table Photographs Prompt 7

ALTER TABLE photographs ADD COLUMN userID INT NOT NULL AFTER locationid;

Prompt 8



The new column created in the the Photographs table called userid has no reference or relationship to the rest of the database. It is a field without context.

The photograph table stores a photo take by a 'user'. The V1.0 of the database, the photographs table was stand along and had no relationship to any other table and no way to discern what information in the table was to a specific individual. To correct this we create a 'FOREIGN KEY' reference from the 'userid' in the photographs table to the 'userid' in the 'users' table. This will create a meaningful relationship between the two tables and allow for correct response from queries on the database as a whole.

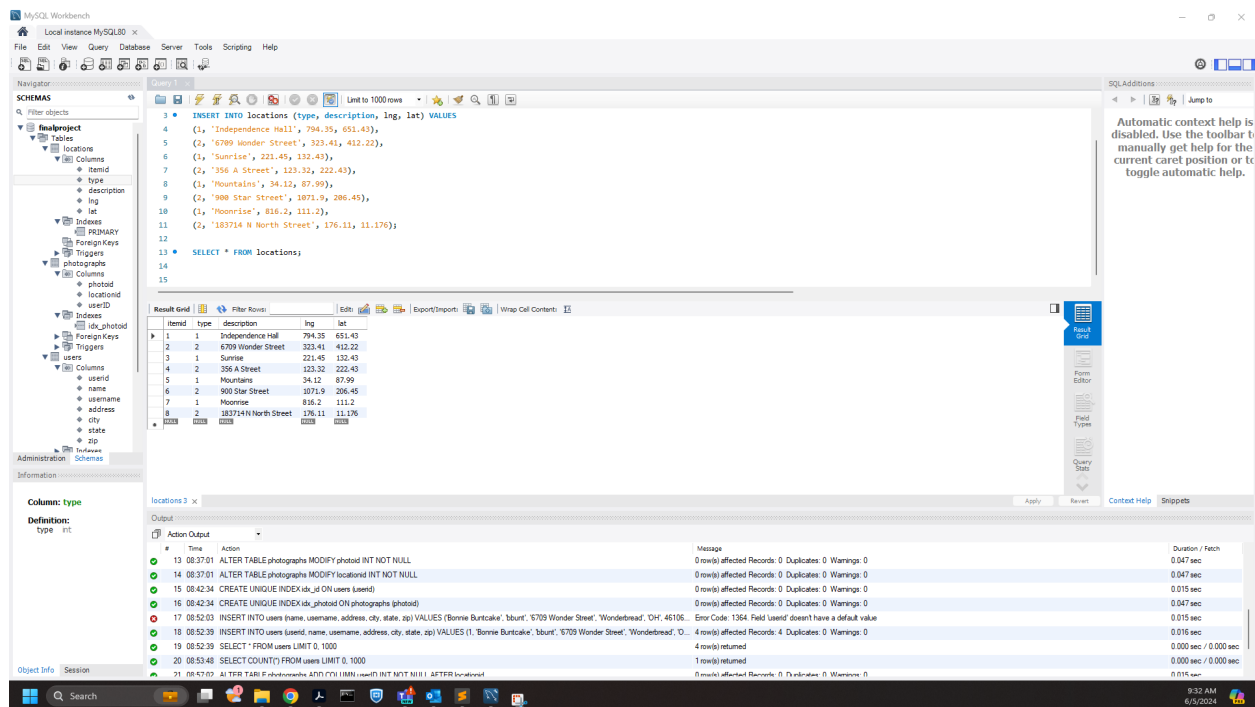
-- Alter Table Photographs Prompt 8

ALTER TABLE photographs

ADD FOREIGN KEY (userid)

REFERENCES users(userid);

Prompt 9



-- Insert Data Into Locations and Photographs Tables Prompt 9

-- Step 1: Insert data into locations table

INSERT INTO locations (type, description, lng, lat) VALUES

(1, 'Independence Hall', 794.35, 651.43),

(2, '6709 Wonder Street', 323.41, 412.22),

(1, 'Sunrise', 221.45, 132.43),

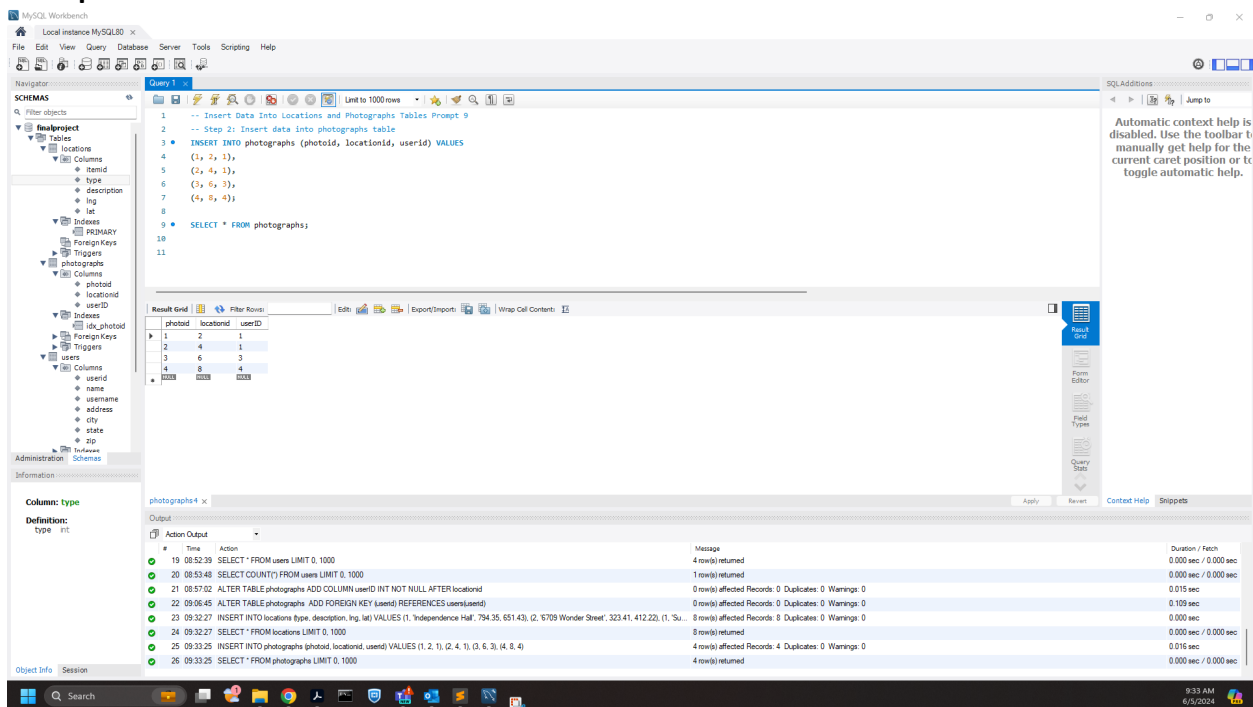
(2, '356 A Street', 123.32, 222.43),

(1, 'Mountains', 34.12, 87.99),

(2, '900 Star Street', 1071.9, 206.45),


```
(1, 'Moonrise', 816.2, 111.2),
(2, '183714 N North Street', 176.11, 11.176);
SELECT * FROM locations;
```

Prompt 9 Cont.



-- Step 2: Insert data into photographs table

INSERT INTO photographs (photoid, locationid, userid) VALUES

(1, 2, 1),

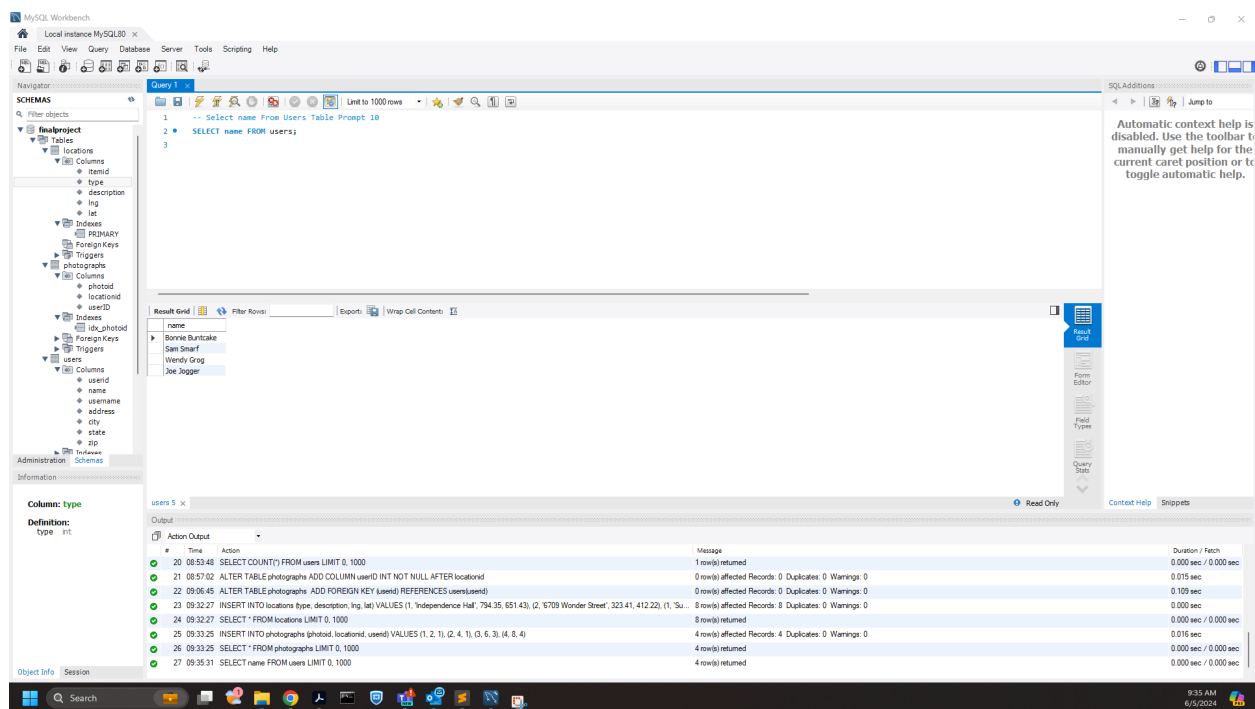
(2, 4, 1),

(3, 6, 3),

(4, 8, 4);

SELECT * FROM photographs;

Prompt 10



MySQL Workbench interface showing a query execution. The query is:

```
-- Select name From Users Table Prompt 10
SELECT name FROM users;
```

The result grid displays the following data:

name
Bonnie Buntstake
Sam Sharp
Wendy Grog
Joe Jagger

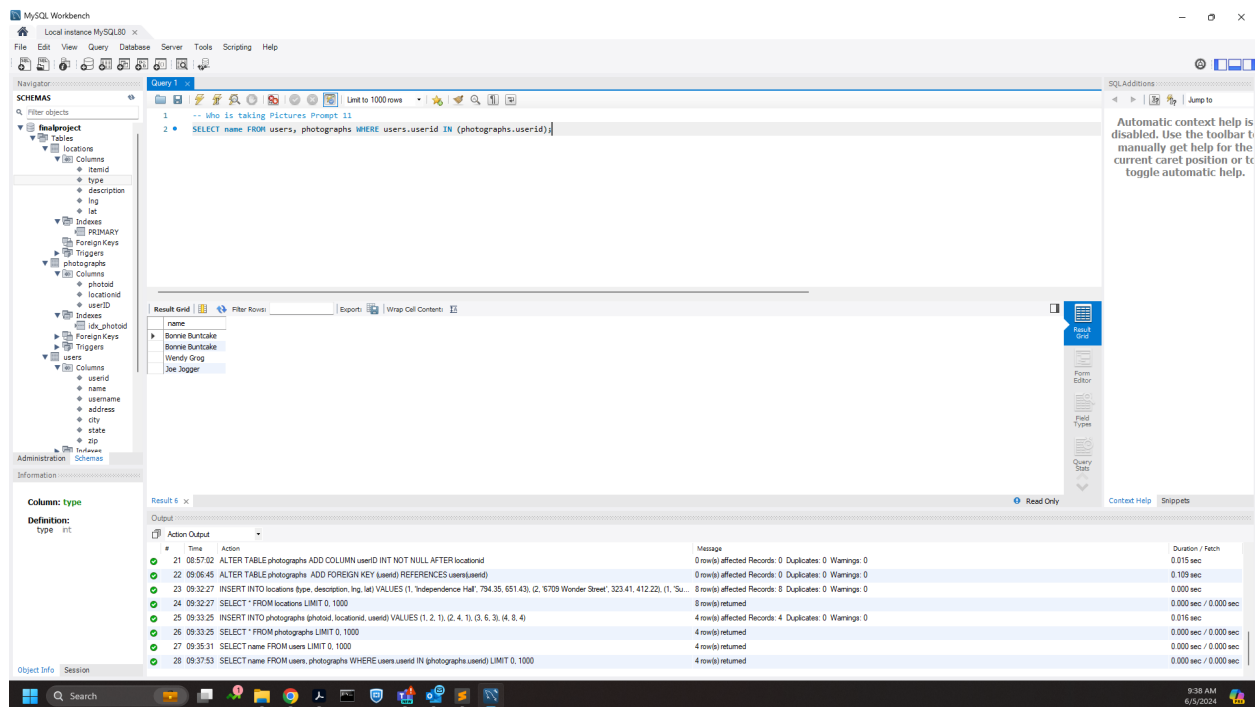
The output pane shows the execution log with various database actions and their durations:

#	Time	Action	Message	Duration / Fetch
20	08:53:48	SELECT COUNT(*) FROM users LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
21	08:57:02	ALTER TABLE photographs ADD COLUMN userID INT NOT NULL AFTER locationid	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
22	09:06:48	ALTER TABLE photographs ADD FOREIGN KEY (userid) REFERENCES users(userid)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.109 sec
23	09:32:27	INSERT INTO locations (type, description, lng, lat) VALUES (1, 'Independence Hall', 794.35, 551.43), (2, '6709 Wonder Street', 323.41, 412.22), (1, 'Su...	8 row(s) affected Records: 8 Duplicates: 0 Warnings: 0	0.000 sec
24	09:32:27	SELECT * FROM locations LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
25	09:33:25	INSERT INTO photographs (photoid, locationid, userid) VALUES (1, 2, 1), (2, 4, 1), (3, 6, 3), (4, 8, 4)	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.016 sec
26	09:33:25	SELECT * FROM photographs LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
27	09:35:31	SELECT name FROM users LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec

-- Select name From Users Table Prompt 10

SELECT name FROM users;

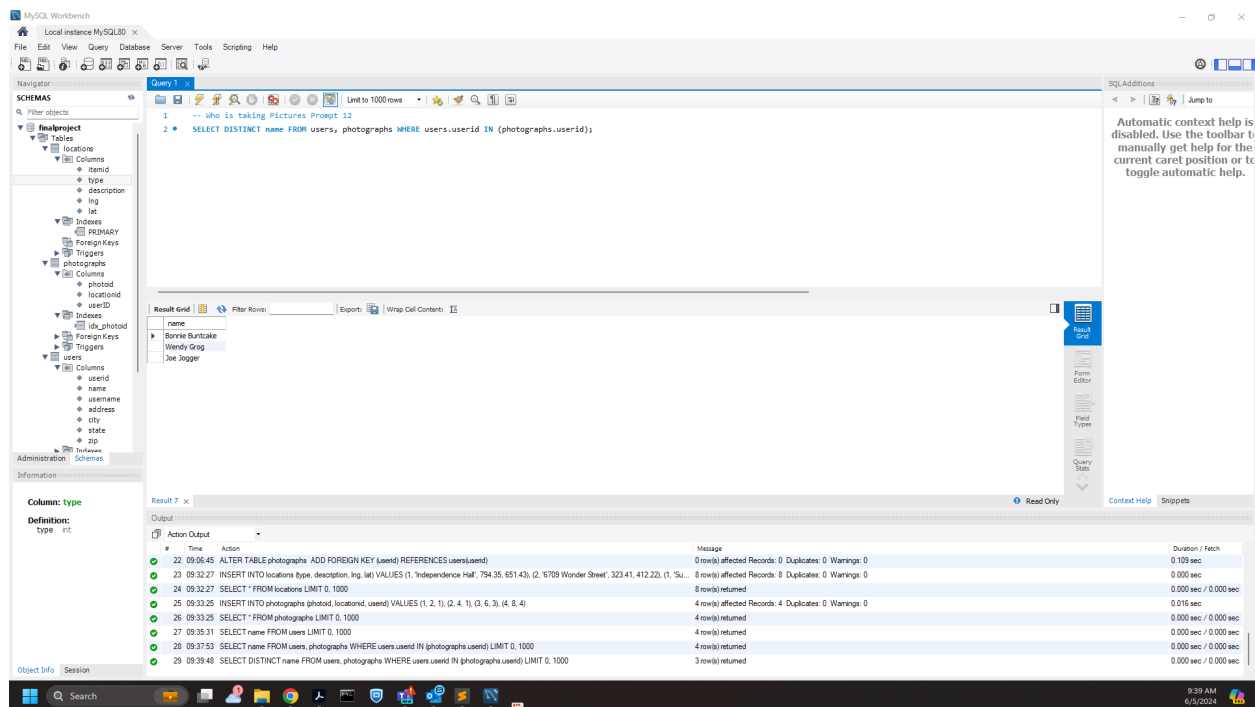
Prompt 11



-- Who is taking Pictures Prompt 11

SELECT name FROM users, photographs WHERE users.userid IN (photographs.userid);

Prompt 12



-- Who is taking Pictures Prompt 12

SELECT DISTINCT name FROM users, photographs WHERE users.userid IN (photographs.userid);