

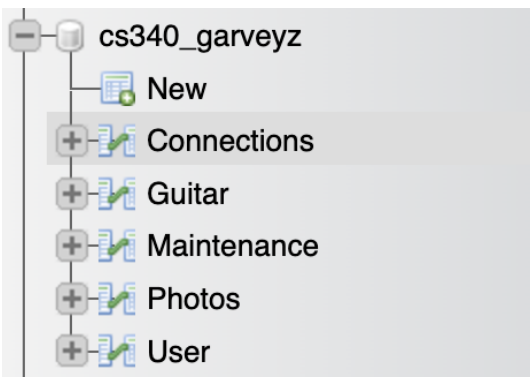
1) CREATE TABLES

Ran the following command:

```
CREATE TABLE User (  
  user_id INT AUTO_INCREMENT PRIMARY KEY,  
  username VARCHAR(50) NOT NULL,  
  email VARCHAR(100) UNIQUE NOT NULL,  
  password VARCHAR(255) NOT NULL  
);  
  
CREATE TABLE Guitar (  
  guitar_id INT AUTO_INCREMENT PRIMARY KEY,  
  serial_number VARCHAR(50) UNIQUE NOT NULL,  
  brand VARCHAR(50),  
  model VARCHAR(50),  
  year INT,  
  user_id INT,  
  genre VARCHAR(50),  
  body_type ENUM('acoustic', 'electric', 'classical'),  
  FOREIGN KEY (user_id) REFERENCES User(user_id) ON DELETE CASCADE ON UPDATE RESTRICT  
);  
  
CREATE TABLE Maintenance (  
  maintenance_id INT AUTO_INCREMENT PRIMARY KEY,  
  date DATE NOT NULL,  
  type VARCHAR(50),  
  notes TEXT,  
  guitar_id INT,  
  FOREIGN KEY (guitar_id) REFERENCES Guitar(guitar_id) ON DELETE CASCADE ON UPDATE RESTRICT  
);  
  
CREATE TABLE Photos (  
  photo_id INT AUTO_INCREMENT PRIMARY KEY,  
  url TEXT NOT NULL,  
  caption TEXT,  
  guitar_id INT,  
  FOREIGN KEY (guitar_id) REFERENCES Guitar(guitar_id) ON DELETE CASCADE ON UPDATE RESTRICT  
);  
  
CREATE TABLE Connections (  
  connection_id INT AUTO_INCREMENT PRIMARY KEY,  
  user1_id INT,  
  user2_id INT,  
  relationship VARCHAR(50),  
  FOREIGN KEY (user1_id) REFERENCES User(user_id) ON DELETE SET NULL ON UPDATE CASCADE,  
  FOREIGN KEY (user2_id) REFERENCES User(user_id) ON DELETE SET NULL ON UPDATE CASCADE  
);
```

Output the following tables (but unpopulated):

File Structure:

































Tables:































User

<div>←T→</div>						user_id	username	email	password
<input type="checkbox"/>	 Edit	 Copy	 Delete			1	guitar_hero	john@example.com	hashedpassword1
<input type="checkbox"/>	 Edit	 Copy	 Delete			2	rock_star	jane@example.com	hashedpassword2
<input type="checkbox"/>	 Edit	 Copy	 Delete			3	blues_master	mike@example.com	hashedpassword3
<input type="checkbox"/>	 Edit	 Copy	 Delete			4	acoustic_lover	sarah@example.com	hashedpassword4
<input type="checkbox"/>	 Edit	 Copy	 Delete			5	vintage_collector	tom@example.com	hashedpassword5
<input type="checkbox"/>	 Edit	 Copy	 Delete			6	metal_shredder	alex@example.com	hashedpassword6
<input type="checkbox"/>	 Edit	 Copy	 Delete			7	jazz_player	emma@example.com	hashedpassword7
<input type="checkbox"/>	 Edit	 Copy	 Delete			8	country_picker	david@example.com	hashedpassword8
<input type="checkbox"/>	 Edit	 Copy	 Delete			9	classical_maestro	lisa@example.com	hashedpassword9
<input type="checkbox"/>	 Edit	 Copy	 Delete			10	indie_rocker	chris@example.com	hashedpassword10
















Guitar

←T→					guitar_id	serial_number	brand	model	year	user_id	genre	body_type		
<input type="checkbox"/>		Edit		Copy		Delete	1	SN001	Fender	Stratocaster	1965	1	Rock	electric
<input type="checkbox"/>		Edit		Copy		Delete	2	SN002	Gibson	Les Paul	1959	2	Blues	electric
<input type="checkbox"/>		Edit		Copy		Delete	3	SN003	Martin	D-28	1970	3	Folk	acoustic
<input type="checkbox"/>		Edit		Copy		Delete	4	SN004	Taylor	114ce	2015	4	Acoustic Pop	acoustic
<input type="checkbox"/>		Edit		Copy		Delete	5	SN005	Gibson	ES-335	1964	5	Jazz	electric
<input type="checkbox"/>		Edit		Copy		Delete	6	SN006	ESP	LTD	2018	6	Metal	electric
<input type="checkbox"/>		Edit		Copy		Delete	7	SN007	Rickenbacker	360	1966	7	Indie Rock	electric
<input type="checkbox"/>		Edit		Copy		Delete	8	SN008	PRS	Custom 24	2020	8	Country	electric
<input type="checkbox"/>		Edit		Copy		Delete	9	SN009	Yamaha	CG	2010	9	Classical	classical
<input type="checkbox"/>		Edit		Copy		Delete	10	SN010	Gretsch	White Falcon	1955	10	Rockabilly	electric

Maintenance

←T→						maintenance_id	date	type	notes	guitar_id	
<input type="checkbox"/>		Edit		Copy		Delete	1	2023-01-15	String Change	Changed to D'Addario 10-46	1
<input type="checkbox"/>		Edit		Copy		Delete	2	2023-02-20	Setup	Adjusted action and intonation	2
<input type="checkbox"/>		Edit		Copy		Delete	3	2023-03-10	Fret Polish	Polished frets and cleaned fretboard	3
<input type="checkbox"/>		Edit		Copy		Delete	4	2023-04-05	Neck Adjustment	Truss rod adjustment	4
<input type="checkbox"/>		Edit		Copy		Delete	5	2023-05-12	Pickup Replacement	Replaced bridge pickup	5
<input type="checkbox"/>		Edit		Copy		Delete	6	2023-06-18	Complete Setup	Full professional setup	6
<input type="checkbox"/>		Edit		Copy		Delete	7	2023-07-22	String Change	Changed to Elixir Nanoweb	7
<input type="checkbox"/>		Edit		Copy		Delete	8	2023-08-30	Repair	Fixed minor crack near bridge	8
<input type="checkbox"/>		Edit		Copy		Delete	9	2023-09-15	Tuner Replacement	Replaced old tuning machines	9
<input type="checkbox"/>		Edit		Copy		Delete	10	2023-10-05	Electronics Check	Checked and cleaned electronics	10

Photos

<div>←T→</div>				photo_id	url	caption	guitar_id
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	https://example.com/strat1.jpg	Vintage Stratocaster	1
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	https://example.com/lespaul1.jpg	Sunburst Les Paul	2
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	https://example.com/martin1.jpg	Martin Acoustic	3
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	https://example.com/taylor1.jpg	Taylor Acoustic	4
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	https://example.com/es3351.jpg	Gibson ES-335	5
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	https://example.com/esp1.jpg	ESP Metal Guitar	6
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	https://example.com/rickenbacker1.jpg	Rickenbacker 360	7
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	https://example.com/prs1.jpg	PRS Custom 24	8
<input type="checkbox"/>	 Edit	 Copy	 Delete	9	https://example.com/yamaha1.jpg	Yamaha Classical	9
<input type="checkbox"/>	 Edit	 Copy	 Delete	10	https://example.com/gretsch1.jpg	Gretsch White Falcon	10

Connections

<div>←T→</div>				connection_id	user1_id	1	user2_id	relationship
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	1	2	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	1	3	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	2	4	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	3	5	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	4	6	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	5	7	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	6	8	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	7	9	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	9	8	10	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	10	9	1	follower	

2) POPULATE

Ran the following commands:

```
INSERT INTO User (username, email, password) VALUES
('guitar_hero', 'john@example.com', 'hashedpassword1'),
('rock_star', 'jane@example.com', 'hashedpassword2'),
('blues_master', 'mike@example.com', 'hashedpassword3'),
('acoustic_lover', 'sarah@example.com', 'hashedpassword4'),
('vintage_collector', 'tom@example.com', 'hashedpassword5'),
('metal_shredder', 'alex@example.com', 'hashedpassword6'),
('jazz_player', 'emma@example.com', 'hashedpassword7'),
('country_picker', 'david@example.com', 'hashedpassword8'),
('classical_maestro', 'lisa@example.com', 'hashedpassword9'),
('indie_rocker', 'chris@example.com', 'hashedpassword10');
```

```
INSERT INTO Guitar (serial_number, brand, model, year, user_id, genre, body_type) VALUES
('SN001', 'Fender', 'Stratocaster', 1965, 1, 'Rock', 'electric'),
('SN002', 'Gibson', 'Les Paul', 1959, 2, 'Blues', 'electric'),
('SN003', 'Martin', 'D-28', 1970, 3, 'Folk', 'acoustic'),
('SN004', 'Taylor', '114ce', 2015, 4, 'Acoustic Pop', 'acoustic'),
('SN005', 'Gibson', 'ES-335', 1964, 5, 'Jazz', 'electric'),
('SN006', 'ESP', 'LTD', 2018, 6, 'Metal', 'electric'),
('SN007', 'Rickenbacker', '360', 1966, 7, 'Indie Rock', 'electric'),
('SN008', 'PRS', 'Custom 24', 2020, 8, 'Country', 'electric'),
('SN009', 'Yamaha', 'CG', 2010, 9, 'Classical', 'classical'),
('SN010', 'Gretsch', 'White Falcon', 1955, 10, 'Rockabilly', 'electric');
```

```
INSERT INTO Maintenance (date, type, notes, guitar_id) VALUES
('2023-01-15', 'String Change', 'Changed to D'Addario 10-46', 1),
('2023-02-20', 'Setup', 'Adjusted action and intonation', 2),
('2023-03-10', 'Fret Polish', 'Polished frets and cleaned fretboard', 3),
('2023-04-05', 'Neck Adjustment', 'Truss rod adjustment', 4),
('2023-05-12', 'Pickup Replacement', 'Replaced bridge pickup', 5),
('2023-06-18', 'Complete Setup', 'Full professional setup', 6),
('2023-07-22', 'String Change', 'Changed to Elixir Nanoweb', 7),
('2023-08-30', 'Repair', 'Fixed minor crack near bridge', 8),
('2023-09-15', 'Tuner Replacement', 'Replaced old tuning machines', 9),
('2023-10-05', 'Electronics Check', 'Checked and cleaned electronics', 10);
```

```
INSERT INTO Photos (url, guitar_id, caption) VALUES
('https://example.com/strat1.jpg', 1, 'Vintage Stratocaster'),
('https://example.com/lespaul1.jpg', 2, 'Sunburst Les Paul'),
('https://example.com/martin1.jpg', 3, 'Martin Acoustic'),
('https://example.com/taylor1.jpg', 4, 'Taylor Acoustic'),
('https://example.com/es3351.jpg', 5, 'Gibson ES-335'),
('https://example.com/esp1.jpg', 6, 'ESP Metal Guitar'),
('https://example.com/rickenbacker1.jpg', 7, 'Rickenbacker 360'),
('https://example.com/prs1.jpg', 8, 'PRS Custom 24'),
('https://example.com/yamaha1.jpg', 9, 'Yamaha Classical'),
('https://example.com/gretsch1.jpg', 10, 'Gretsch White Falcon');
```































```
INSERT INTO Connections (user1_id, user2_id, relationship) VALUES
(1, 2, 'friend'),
(1, 3, 'follower'),
(2, 4, 'friend'),
(3, 5, 'follower'),
(4, 6, 'friend'),
(5, 7, 'follower'),
(6, 8, 'friend'),
(7, 9, 'follower'),
(8, 10, 'friend'),
(9, 1, 'follower');
```


And returned the following tables:































User

<div>←T→</div>		user_id	username	email	password
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		1	guitar_hero	john@example.com	hashedpassword1
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		2	rock_star	jane@example.com	hashedpassword2
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		3	blues_master	mike@example.com	hashedpassword3
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		4	acoustic_lover	sarah@example.com	hashedpassword4
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		5	vintage_collector	tom@example.com	hashedpassword5
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		6	metal_shredder	alex@example.com	hashedpassword6
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		7	jazz_player	emma@example.com	hashedpassword7
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		8	country_picker	david@example.com	hashedpassword8
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		9	classical_maestro	lisa@example.com	hashedpassword9
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		10	indie_rocker	chris@example.com	hashedpassword10































Guitar

<div>←T→</div>		guitar_id	serial_number	brand	model	year	user_id	genre	body_type
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		1	SN001	Fender	Stratocaster	1965	1	Rock	electric
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		2	SN002	Gibson	Les Paul	1959	2	Blues	electric
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		3	SN003	Martin	D-28	1970	3	Folk	acoustic
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		4	SN004	Taylor	114ce	2015	4	Acoustic Pop	acoustic
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		5	SN005	Gibson	ES-335	1964	5	Jazz	electric
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		6	SN006	ESP	LTD	2018	6	Metal	electric
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		7	SN007	Rickenbacker	360	1966	7	Indie Rock	electric
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		8	SN008	PRS	Custom 24	2020	8	Country	electric
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		9	SN009	Yamaha	CG	2010	9	Classical	classical
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		10	SN010	Gretsch	White Falcon	1955	10	Rockabilly	electric

Maintenance

<div>←T→</div>		maintenance_id	date	type	notes	guitar_id
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		1	2023-01-15	String Change	Changed to D'Addario 10-46	1
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		2	2023-02-20	Setup	Adjusted action and intonation	2
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		3	2023-03-10	Fret Polish	Polished frets and cleaned fretboard	3
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		4	2023-04-05	Neck Adjustment	Truss rod adjustment	4
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		5	2023-05-12	Pickup Replacement	Replaced bridge pickup	5
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		6	2023-06-18	Complete Setup	Full professional setup	6
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		7	2023-07-22	String Change	Changed to Elixir Nanoweb	7
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		8	2023-08-30	Repair	Fixed minor crack near bridge	8
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		9	2023-09-15	Tuner Replacement	Replaced old tuning machines	9
<div><input type="checkbox"/>  Edit  Copy  Delete</div>		10	2023-10-05	Electronics Check	Checked and cleaned electronics	10

Photos

<div>←T→</div>				photo_id	url	caption	guitar_id
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	https://example.com/strat1.jpg	Vintage Stratocaster	1
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	https://example.com/lespaul1.jpg	Sunburst Les Paul	2
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	https://example.com/martin1.jpg	Martin Acoustic	3
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	https://example.com/taylor1.jpg	Taylor Acoustic	4
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	https://example.com/es3351.jpg	Gibson ES-335	5
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	https://example.com/esp1.jpg	ESP Metal Guitar	6
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	https://example.com/rickenbacker1.jpg	Rickenbacker 360	7
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	https://example.com/prs1.jpg	PRS Custom 24	8
<input type="checkbox"/>	 Edit	 Copy	 Delete	9	https://example.com/yamaha1.jpg	Yamaha Classical	9
<input type="checkbox"/>	 Edit	 Copy	 Delete	10	https://example.com/gretsch1.jpg	Gretsch White Falcon	10

Connections

<div>←T→</div>				connection_id	user1_id	1	user2_id	relationship
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	1	2	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	1	3	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	2	4	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	3	5	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	4	6	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	5	7	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	6	8	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	7	9	follower	
<input type="checkbox"/>	 Edit	 Copy	 Delete	9	8	10	friend	
<input type="checkbox"/>	 Edit	 Copy	 Delete	10	9	1	follower	

3) SQL QUERIES

Query 1 (CREATE/INSERT):

```
INSERT INTO Guitar (serial_number, brand, model, year, user_id, genre, body_type)
VALUES ('SN12345', 'Fender', 'Stratocaster', 2019, 1, 'rock', 'electric');
```

Results:

In 'Guitar':

☐ Edit Copy Delete 11 SN12345 Fender Stratocaster 2019 1 rock electric

Use:

Adding a new guitar to the collection

Query 2 (RETRIEVE)

```
SELECT * FROM Guitar WHERE user_id = 1;
```

Results:

		guitar_id	serial_number	brand	model	year	user_id	genre	body_type
<input type="checkbox"/>	Edit Copy Delete	1	SN001	Fender	Stratocaster	1965	1	Rock	electric
<input type="checkbox"/>	Edit Copy Delete	11	SN12345	Fender	Stratocaster	2019	1	rock	electric

Use:

Selecting all guitars for a specified user

Query 3 (SELECT using a JOIN):

```
SELECT g.guitar_id, g.brand, g.model, u.username
FROM Guitar g
JOIN User u ON g.user_id = u.user_id;
```

Results:

guitar_id	brand	model	username
1	Fender	Stratocaster	guitar_hero
2	Gibson	Les Paul	rock_star
3	Martin	D-28	blues_master
4	Taylor	114ce	acoustic_lover
5	Gibson	ES-335	vintage_collector
6	ESP	LTD	metal_shredder
7	Rickenbacker	360	jazz_player
8	PRS	Custom 24	country_picker
9	Yamaha	CG	classical_maestro
10	Gretsch	White Falcon	indie_rocker
11	Fender	Stratocaster	guitar_hero

Use:

Getting guitars with their owner's username

Query 4 (SELECT using a GROUP BY):

```
SELECT u.username, COUNT(g.guitar_id) as guitar_count
FROM User u
LEFT JOIN Guitar g ON u.user_id = g.user_id
GROUP BY u.user_id;
```

Results:

username	guitar_count
guitar_hero	2
rock_star	1
blues_master	1
acoustic_lover	1
vintage_collector	1
metal_shredder	1
jazz_player	1
country_picker	1
classical_maestro	1
indie_rocker	1

Use:

Counting guitars per user

Query 5 (SELECT using an aggregate function):

```
SELECT brand, COUNT(*) as brand_count
FROM Guitar
GROUP BY brand
ORDER BY brand_count DESC
LIMIT 1;
```

Results:

brand	brand_count
Gibson	2

Use:

Finding the most common guitar brand

Query 6 (UPDATE):

```
UPDATE Guitar
SET genre = 'Blues Rock'
WHERE guitar_id = 2;
```

Results:

In ‘Guitar’:

<input type="checkbox"/>	Edit	Copy	Delete	2	SN002	Gibson	Les Paul	1959	2	Blues Rock	electric
--------------------------	------	------	--------	---	-------	--------	----------	------	---	------------	----------

Use:

Updating a guitar’s details

Query 7 (DELETE):

```
DELETE FROM Maintenance
WHERE maintenance_id = 5;
```

Results:

In ‘Maintenance’:

	Edit	Copy	Delete		maintenance_id	date	type	notes	guitar_id
<input type="checkbox"/>	Edit	Copy	Delete		1	2023-01-15	String Change	Changed to D'Addario 10-46	1
<input type="checkbox"/>	Edit	Copy	Delete		2	2023-02-20	Setup	Adjusted action and intonation	2
<input type="checkbox"/>	Edit	Copy	Delete		3	2023-03-10	Fret Polish	Polished frets and cleaned fretboard	3
<input type="checkbox"/>	Edit	Copy	Delete		4	2023-04-05	Neck Adjustment	Truss rod adjustment	4
<input type="checkbox"/>	Edit	Copy	Delete		6	2023-06-18	Complete Setup	Full professional setup	6
<input type="checkbox"/>	Edit	Copy	Delete		7	2023-07-22	String Change	Changed to Elixir Nanoweb	7
<input type="checkbox"/>	Edit	Copy	Delete		8	2023-08-30	Repair	Fixed minor crack near bridge	8
<input type="checkbox"/>	Edit	Copy	Delete		9	2023-09-15	Tuner Replacement	Replaced old tuning machines	9
<input type="checkbox"/>	Edit	Copy	Delete		10	2023-10-05	Electronics Check	Checked and cleaned electronics	10

Use:

Removing a maintenance record

4) TRIGGERS/FUNCTIONS/PROCEDURES

Function

```
DELIMITER //
CREATE FUNCTION count_user_connections(p_user_id INT)
RETURNS INT
DETERMINISTIC
BEGIN
    DECLARE connection_count INT;

    SELECT COUNT(*) INTO connection_count
    FROM (
        SELECT user1_id AS connected_user FROM Connections WHERE user2_id = p_user_id
        UNION
        SELECT user2_id AS connected_user FROM Connections WHERE user1_id = p_user_id
    ) as user_connections;

    RETURN connection_count;
END;//
DELIMITER ;
```

Use:

Counts user connections

Trigger:

```
DELIMITER //
CREATE TRIGGER prevent_duplicate_serial_numbers
BEFORE INSERT ON Guitar
FOR EACH ROW
BEGIN
    IF EXISTS (
        SELECT 1
        FROM Guitar
        WHERE serial_number = NEW.serial_number
    ) THEN
        SIGNAL SQLSTATE '45000'
        SET MESSAGE_TEXT = 'Serial number must be unique across all guitars';
    END IF;
END;//
DELIMITER ;
```

Use:

Prevents duplicate serial numbers across Users

Procedure:

```
DELIMITER //
```

```
CREATE PROCEDURE add_new_guitar(  
    IN p_serial_number VARCHAR(50),  
    IN p_brand VARCHAR(50),  
    IN p_model VARCHAR(50),  
    IN p_year INT,  
    IN p_user_id INT,  
    IN p_genre VARCHAR(50),  
    IN p_body_type ENUM('acoustic', 'electric', 'classical')  
)  
BEGIN  
    -- Check if serial number already exists  
    IF EXISTS (SELECT 1 FROM Guitars WHERE serial_number = p_serial_number) THEN  
        SIGNAL SQLSTATE '45000'  
        SET MESSAGE_TEXT = 'Serial number must be unique';  
    END IF;  
  
    -- Insert the new guitar  
    INSERT INTO Guitars (serial_number, brand, model, year, user_id, genre, body_type)  
    VALUES (p_serial_number, p_brand, p_model, p_year, p_user_id, p_genre, p_body_type);  
END; //
```

```
DELIMITER ;
```

Use:

Adds a new guitar with validation