

All SQL commands can be found in the GitHub repo in assignment3/sql. Each Question has a file dedicated to it.

2,

✓	7	16:47:46	CREATE TABLE Users (UserID IN...	0 row(s) affected
✓	8	16:47:46	CREATE TABLE Companies (Com...	0 row(s) affected
✓	9	16:47:46	CREATE TABLE Tools (ToolID INT...	0 row(s) affected
✓	10	16:47:47	CREATE TABLE UnavialableTools (...)	0 row(s) affected
✓	11	16:47:47	CREATE TABLE FavouriteTools (T...	0 row(s) affected
✓	12	16:47:47	CREATE TABLE UserTransactions (...)	0 row(s) affected
✓	13	16:47:47	CREATE TABLE CompanyTransaction...	0 row(s) affected

DESCRIBE command responses:

1. users:

	Field	Type	Null	Key	Default	Extra
▶	UserID	int	NO	PRI	NULL	auto_increment
	Username	varchar(50)	NO		NULL	
	Password	varchar(50)	NO		NULL	
	CreditCardNo	varchar(16)	YES		NULL	
	Address	varchar(100)	YES		NULL	
	Rating	int	YES		3	
	TransDone	int	YES		0	

2. companyTransactions:

	Field	Type	Null	Key	Default	Extra
▶	ToolID	int	YES	MUL	NULL	
	CompanyID	int	YES	MUL	NULL	
	BuyerID	int	YES	MUL	NULL	
	TransactionDate	date	YES		NULL	

3. companies:

	Field	Type	Null	Key	Default	Extra
▶	CompanyID	int	NO	PRI	NULL	auto_increment
	Name	varchar(50)	NO		NULL	
	Address	varchar(100)	YES		NULL	
	Rating	int	YES		3	

4. favouriteTools:

	Field	Type	Null	Key	Default	Extra
▶	ToolID	int	YES	MUL	NULL	
	UserID	int	YES	MUL	NULL	

5. tools:

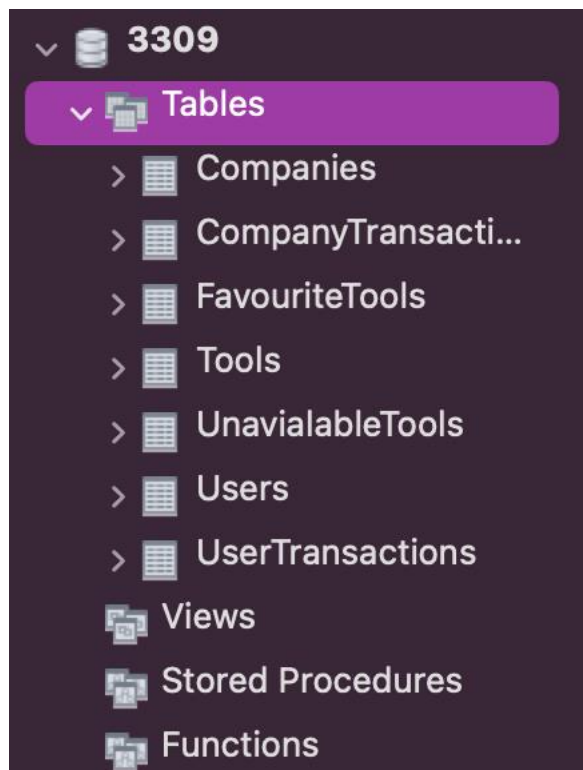
	Field	Type	Null	Key	Default	Extra
▶	ToolID	int	NO	PRI	NULL	auto_increment
	ToolType	varchar(50)	YES		NULL	
	ToolName	varchar(50)	NO		NULL	
	UserID	int	NO	MUL	NULL	
	CompanyID	int	YES	MUL	NULL	
	Price	decimal(10,2)	NO		NULL	
	ForSale	tinyint(1)	YES		NULL	
	ForRent	tinyint(1)	YES		NULL	

6. userTransactions:

	Field	Type	Null	Key	Default	Extra
▶	ToolID	int	YES	MUL	NULL	
	SellerID	int	YES	MUL	NULL	
	BuyerID	int	YES	MUL	NULL	
	TransactionDate	date	YES		NULL	

7. unavailableTools:

	Field	Type	Null	Key	Default	Extra
▶	ToolID	int	NO	MUL	NULL	
	UserID	int	NO	MUL	NULL	
	ReturnDate	date	NO		NULL	



3,

```

✓ 36 17:12:41 INSERT INTO Users VALUES ( NULL , 'amani' , 'jimbeam' , '0584573226377491' , '3085 Kuhl Avenue, Atlanta, GA, 30305' , 4 , 4 )
✓ 37 17:12:41 INSERT INTO Users ( Username , Password , CreditCardNo , Address , Rating ) VALUES ( 'jayson' , 'Allen@03' , '4080336091246025' , '1779 Windy F
✓ 38 17:12:41 INSERT INTO UnavialableTools ( ToolID , UserID , ReturnDate ) ( SELECT ToolID , UserID , CURDATE() + INTERVAL 10 DAY AS ReturnDate FR

```

4,

64	16:55:06		2000 row(s) affected Records: 2000 Duplicates: 0 Warnings: 0	0.031 sec
65	16:55:13	SELECT * FROM 3309db.users LIMIT 0, 1000	1000 row(s) returned	0.000 sec / 0.015 sec
66	16:55:31		2000 row(s) affected Records: 2000 Duplicates: 0 Warnings: 0	0.063 sec
67	16:56:19	INSERT INTO Companies (Name, Address, Rating) VALUES ('UgKAUwOWT', 'hK3vTjmAlfg2se2oCW', 0), ('101Gmnhn', 'F0w0l698obDCa8nU...	300 row(s) affected Records: 300 Duplicates: 0 Warnings: 0	0.016 sec

Users and tools both have 2000 tuples in them, and companies has 300 tuples in it.

a, We used a java program to generate 2000 insert statements. With our program we guaranteed that duplicates were not generated for keys.

b, We have checked and our insert statements only go through if there is a matching value. For example, when we add tools, we randomize an id between 1-2000 so it will match a userID.

5,

22	16:26:22	SELECT * FROM Users LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
23	16:26:22	SELECT u.UserID ,Username ,COUNT(*) AS ToolCount FROM Users u JOIN Tools t ON (u.UserID = t.UserID) GROUP BY u.UserID LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
24	16:26:22	SELECT t.ToolID ,COUNT(*) AS Offers FROM Tools t JOIN UserTransactions t ON t.ToolID = t.ToolID GROUP BY t.ToolID LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
25	16:26:22	SELECT ct.CompanyID ,ut.SellerID ,ct.BuyerID AS CompanyCustomer ,ut.BuyerID ,ct.TransactionDate AS CompanyTransactionDate ,ut... 0 row(s) returned	0 row(s) returned	0.000 sec / 0.000 sec
26	16:26:22	SELECT t.ToolName , t.Price , t.ToolType , u.Username , u.Rating FROM Users u, Tools t WHERE u.UserID = t.UserID LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
27	16:26:22	SELECT t.ToolName AS Tool ,COUNT(*) AS UsersFav FROM FavoutiteTools f JOIN Users u ON f.UserID = u.UserID JOIN Tools t ON t.ToolID = f.ToolID ORDER B...	0 row(s) returned	0.000 sec / 0.000 sec
28	16:26:22	SELECT Username ,Address ,Rating ,TransDone FROM Users u JOIN UserTransactions ut ON (u.UserID = ut.SellerID) ORDER B...	0 row(s) returned	0.000 sec / 0.000 sec

We tested the statements with no data to make sure the commands run successfully.

6,

8	16:18:39	CREATE TABLE UnavailableTools (ToolID INT NOT NULL ,UserID INT NOT NULL ,ReturnDate DATE NOT NULL ,FOREIGN KEY (ToolID) ...	0 row(s) affected	0.031 sec
9	16:18:59	UPDATE Users u, (SELECT SellerID FROM UserTransactions GROUP BY SellerID HAVING MAX(TransactionDate) < CURDATE) - INTERVAL 3 MO...	0 row(s) affected Rows matched: 0 Changed: 0 Warnings: 0	0.000 sec
10	16:18:59	DELETE FROM UnavailableTools ut WHERE ut.ReturnDate < CURDATE)	0 row(s) affected	0.000 sec
11	16:18:59	UPDATE Tools t SET t.ForSale = False WHERE t.ForSale = True	0 row(s) affected Rows matched: 0 Changed: 0 Warnings: 0	0.000 sec

Again, tested to make sure the commands run.

7,

a. Query to create three views and the system response

19	16:24:04	CREATE VIEW searchTools(toolName, Price, Username, Rating) AS SELECT t.ToolName, t.Price, t.ToolType, u.Username, u.Ratin...	0 row(s) affected	0.000 sec
20	16:24:04	CREATE VIEW popularTransactions(Username, Address, Rating, TransDone) AS SELECT Username ,Address ,Rating ,TransDone FROM Us...	0 row(s) affected	0.000 sec
21	16:24:04	CREATE VIEW userView AS SELECT UserID ,Username ,Address ,Rating ,TransDone FROM Users	0 row(s) affected	0.016 sec

b. Query involving each view with the systems response

1	•	USE 3309db;		
2				
3	•	SELECT * FROM popularTransactions;		
4				
5	•	SELECT toolname, Price FROM searchTools;		
6				
7	•	SELECT AVG(Rating) FROM userView;		
8				
20	17:26:58	SELECT toolname, Price FROM searchTools LIMIT 0, 1000	1000 row(s) returned	0.000 sec / 0.016 sec
21	17:26:58	SELECT AVG(Rating) FROM userView LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
22	17:27:04	EXPLAIN SELECT toolname, Price FROM searchTools	OK	0.000 sec

c. Query involving inserting in each view

```
1 • USE 3309db;
2
3 • INSERT INTO popularTransactions VALUES (
4     'user0'
5     , 'Richmon Street'
6     , 3
7     , 0
8 );
9
10 • INSERT INTO searchTools VALUES (
11     'Jarrod\'s wrench'
12     , 'hand tool'
13     , 20
14     , 'user0'
15     , 3
16 );
17
18 • INSERT INTO userView VALUES (
19     NULL
20     , 'user1'
21     , 'Richmond Street'
22     , 2
23     , 0
24 );
```

29 17:38:57	INSERT INTO popularTransactions VALUES ('user0' , 'Richmon Street' , 3 , 0)	Error Code: 1471. The target table popularTransactions of the INSERT is not insertable-into	0.000 sec
32 17:39:35	INSERT INTO searchTools VALUES ('Jarrod\'s wrench' , 'hand tool' , 20 , 'user0' , 3)	Error Code: 1394. Can not insert into join view '3309db.searchtools' without fields list	0.000 sec
35 17:40:20	INSERT INTO userView VALUES (NULL , 'user1' , 'Richmond Street' , 2 , 0)	Error Code: 1423. Field of view '3309db.userview' underlying table doesn't have a default value	0.000 sec

none of the views created can be updated as most of them were made involving joins without all the mandatory columns and one of them hides sensitive information such as password and credit card number which would be required to create a user tuple.

8,

No we did not run into this issue.