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Assignment 3

1. **Nothing to submit**
2. **Response of SQL Editor to requests that describe each of your relation schemas**

Region:

Field	Type	Null	Key	Default	Extra
▶ regionID	int	NO	PRI	NULL	auto_increment
regionName	varchar(50)	YES		NULL	

PostOffice:

Field	Type	Null	Key	Default	Extra
▶ officeNo	int	NO	PRI	NULL	auto_increment
capacity	int	NO		NULL	
regionID	int	NO	MUL	NULL	

PostOfficeStaff:

Field	Type	Null	Key	Default	Extra
▶ staffNo	int	NO	PRI	NULL	auto_increment
staffName	varchar(50)	NO		NULL	
staffPhoneNo	char(10)	YES		NULL	
dateHired	date	NO		NULL	
salary	bigint	NO		NULL	
officeNo	int	NO	MUL	NULL	

Payment:

Field	Type	Null	Key	Default	Extra
▶ transactionNo	int	NO	PRI	NULL	auto_increment
total	decimal(10,2)	YES		NULL	
payDate	date	YES		NULL	
staffNo	int	YES	MUL	NULL	

Truck:

Field	Type	Null	Key	Default	Extra
plateNo	char(7)	NO	PRI	NULL	
maxWeight	int	NO		NULL	
maxSize	int	NO		NULL	
yearPurchased	int	NO		NULL	
regionID	int	NO	MUL	NULL	

Location:

Field	Type	Null	Key	Default	Extra
postCode	char(6)	NO	PRI	NULL	
address	varchar(50)	NO		NULL	
officeNo	int	NO	MUL	NULL	

Customer:

Field	Type	Null	Key	Default	Extra
email	varchar(50)	NO	PRI	NULL	
custName	varchar(50)	NO		NULL	
postCode	char(6)	NO	MUL	NULL	
custPhoneNo	char(10)	YES		NULL	
cardNo	char(16)	YES		NULL	

Package:

Field	Type	Null	Key	Default	Extra
packageID	int	NO	PRI	NULL	auto_increment
weight	int	NO		NULL	
size	int	NO		NULL	
price	decimal(5,2)	YES		NULL	
destination	char(6)	NO		NULL	
orderDate	date	NO		NULL	
deliveryDate	date	YES		NULL	
senderEmail	varchar(50)	NO	MUL	NULL	
transactionNo	int	YES	MUL	NULL	
plateNo	char(7)	YES	MUL	NULL	

Driver:

Field	Type	Null	Key	Default	Extra
staffNo	int	NO	PRI	NULL	
staffName	varchar(50)	NO		NULL	
staffPhoneNo	char(10)	YES		NULL	
dateHired	date	NO		NULL	
licenseNo	char(15)	NO		NULL	
weeklyHours	int	NO		NULL	
plateNo	char(7)	YES	MUL	NULL	

Visit:

Field	Type	Null	Key	Default	Extra
officeNo	int	NO	PRI	NULL	
plateNo	char(7)	NO	PRI	NULL	
visitDate	date	NO		NULL	

3. **Show the response of the SQL Editor and the relation that results when you issue a SELECT * command**

✓ 232	20:03:36	INSERT INTO Region VALUES(null, 'London')	1 row(s) affected		0.0045 sec
✓ 233	20:03:36	INSERT INTO Region VALUES(null, 'Toronto')	1 row(s) affected		0.0017 sec
✓ 234	20:03:36	INSERT INTO PostOffice VALUES(null, 500, 1)	1 row(s) affected		0.0018 sec
✓ 235	20:03:36	INSERT INTO PostOffice VALUES(null, 250, 1)	1 row(s) affected		0.0011 sec
✓ 236	20:03:36	INSERT INTO PostOffice VALUES(null, 500, 2)	1 row(s) affected		0.0031 sec
✓ 237	20:03:36	INSERT INTO PostOffice VALUES(null, 200, 2)	1 row(s) affected		0.0011 sec
✓ 238	20:03:36	INSERT INTO PostOffice VALUES(null, 300, 2)	1 row(s) affected		0.0012 sec
✓ 239	20:03:36	INSERT INTO PostOfficeStaff VALUES(null, 'Justin Beaudry', '0000000000', CURRENT_DATE(), 100000, 1)	1 row(s) affected		0.0016 sec
✓ 240	20:03:36	INSERT INTO Location VALUES('A1A1A1', '123 Example St', 1)	1 row(s) affected		0.0018 sec
✓ 241	20:03:36	INSERT INTO Customer VALUES('example@gmail.com', 'Liam Sharkey', 'A1A1A1', '1000000000', '0000000000000000')	1 row(s) affected		0.0018 sec
✓ 242	20:03:36	INSERT INTO Payment VALUES(null, null, CURRENT_DATE(), 1)	1 row(s) affected		0.0020 sec
✓ 243	20:03:36	INSERT INTO Package VALUES(null, 10, 2, 25, 'B1A1A1', CURRENT_DATE(), null, 'example@gmail.com', 1, null)	1 row(s) affected		0.0022 sec
✓ 244	20:03:36	INSERT INTO Truck VALUES('AV00000', 800, 250, 2019, 1)	1 row(s) affected		0.0017 sec
✓ 245	20:03:36	INSERT INTO Driver VALUES(null, 'Warren Sucklal', '0000000000', CURRENT_DATE(), 'B23600000000000', 400, 'AV...	1 row(s) affected		0.0019 sec
✓ 246	20:03:36	INSERT INTO Visit VALUES((SELECT officeNo FROM PostOffice ORDER BY RAND() LIMIT 1), (SELECT plateNo FRO...	1 row(s) affected		0.0020 sec
✓ 247	20:03:36	INSERT INTO Location VALUES('C1A1A1', '234 Example St', (SELECT MAX(officeNo) as officeNo FROM PostOffic...	1 row(s) affected		0.0011 sec
✓ 248	20:03:36	SELECT * FROM PostOffice LIMIT 0, 1000	5 row(s) returned		0.00032 sec / 0.0000...

```
39
40 ●    SELECT * FROM PostOffice;
41
```

100% ⬍ 26:40

Result Grid | 🔍 Filter Rows: Q Search

officeNo	capacity	regionID
▶ 1	500	1
2	250	1
3	500	2
4	200	2
5	300	2
NULL	NULL	NULL

4. **Turn in a small sample of the records generated for each relation**

Wrote a program to fabricate data for Location, Customer, Package, PostOfficeStaff, Payment and Truck.

Location:

	postCode	address	officeNo
▶	A1A1A1	123 Example St	1
	A1K7Q2	123 Example St	5
	A1L7L5	123 Example St	3
	A1Q3J6	123 Example St	2
	A1U2S4	123 Example St	4
	A2C5Q2	123 Example St	4
	A2J7W2	123 Example St	5
	A2P2W1	123 Example St	4

Customer:

email	custName	postCode	custPhoneNo	cardNo
avawashington2731@msn.com	Ava Washington	D2Q5B7	6470000000	0000000000000000
avawashington5126@yahoo.com	Ava Washington	V4X2P6	6470000000	0000000000000000
avawood2936@msn.com	Ava Wood	B5H3T6	6470000000	0000000000000000
avawood5379@aol.com	Ava Wood	N5I5Q4	6470000000	0000000000000000
avawood8902@uwo.ca	Ava Wood	M6N7E1	6470000000	0000000000000000
benjaminbezos7189@icloud.com	Benjamin Bezos	U4U1D4	6470000000	0000000000000000
benjamincaufield447@gmail.com	Benjamin Caufi...	X7A6Y3	6470000000	0000000000000000
benjaminchevalier8025@aol.com	Benjamin Chev...	O3K4Y6	6470000000	0000000000000000

Payment:

transaction...	total	payDate	staffNo
1	NULL	2021-11-26	1
2	NULL	2021-11-26	31
3	NULL	2021-11-26	17
4	NULL	2021-11-26	15
5	NULL	2021-11-26	41
6	NULL	2021-11-26	20
7	NULL	2021-11-26	15

Package:

packageID	weight	size	price	destination	orderDate	deliveryDate	senderEmail	transaction...	plateNo
1	10	2	25.00	B1A1A1	2021-11-26	NULL	example@gmail.com	1	NULL
2	36	6	5.00	H2K3C2	2021-11-26	2021-11-26	jacksonsharkey9408@hotmail.com	170	NULL
3	83	8	5.00	N1J6B4	2021-11-26	2021-11-26	oliverdimaline8173@yahoo.com	169	NULL
4	8	2	5.00	F4K1T3	2021-11-26	2021-11-26	gordonchevalier1404@uwo.ca	37	NULL
5	83	7	5.00	N5N5F2	2021-11-26	2021-11-26	zoeyjohnson1387@msn.com	117	NULL
6	5	10	5.00	C4E3O3	2021-11-26	2021-11-26	jameschen6803@uwo.ca	246	NULL
7	70	10	5.00	O4W3M6	2021-11-26	2021-11-26	matthewbraun7735@aol.com	30	NULL

PostOfficeStaff:

staffNo	staffName	staffPhoneNo	dateHired	salary	officeNo
1	Justin Beaudry	0000000000	2021-11-26	100000	1
2	Matthew Wilson	0000000000	2021-11-26	67000	1
3	Amilia Sankara	0000000000	2021-11-26	56000	4
4	Omar Johnson	0000000000	2021-11-26	55000	2
5	Benjamin Neff	0000000000	2021-11-26	75000	2
6	Lucas Lavoie	0000000000	2021-11-26	77000	3

Truck:

plateNo	maxWeight	maxSize	yearPurchased	regionID
AV00000	800	250	2019	1
CJ80817	477	297	2019	1
HE15263	255	253	2011	1
LT16002	371	251	2020	2
NB53800	264	200	2019	2
NO71098	419	281	2010	1
OQ95233	301	232	2021	2

5. Turn in a copy of all your SQL queries and the response of the system

```sql
1    -- 1. Selecting all packages sent by a certain customer
2    SELECT packageID, destination, orderDate, deliveryDate, plateNo
3    FROM Package
4    WHERE senderEmail = 'example@gmail.com';
5
6    -- 2. Selecting all staff with an above average salary
7    SELECT * FROM PostOfficeStaff
8    WHERE salary > (SELECT AVG(salary) FROM PostOfficeStaff);
9
10   -- 3. Selecting all trucks purchased before 2020, showing total for each region
11   SELECT regionID, COUNT(*) AS numTrucks
12   FROM Truck
13   WHERE yearPurchased < 2020
14   GROUP BY regionID;
15
16   -- 4. Selecting all undelivered packages
17   SELECT p.packageID, p.destination, p.orderDate, c.custName
18   FROM Package p, Customer c
19   WHERE p.deliveryDate IS NULL AND p.senderEmail = c.email;
20
21   -- 5. Selecting staff with highest sales
22   SELECT sub2.staffNo, staffName, sub2.MaxSum AS "Winning Revenue"
23   FROM (SELECT sub1.staffNo, staffName, Max(sub1.SumTotal) AS MaxSum
24       FROM (SELECT pos.staffNo , staffName, SUM(total) AS SumTotal
25           FROM (PostOfficeStaff pos JOIN Payment py ON pos.staffNo = py.staffNo) GROUP BY pos.staffNo
26           ) sub1 GROUP BY sub1.staffNo
27       ) sub2 ORDER BY sub2.MaxSum DESC LIMIT 1;
28
29   -- 6. Selecting all customers with gmail addresses
30   SELECT * FROM Customer WHERE email LIKE "%@gmail.com%";
31
32   -- 7. Selecting total revenue for each post office *NOTE THIS WON'T WORK UNTIL YOU RUN UPDATES IN ex6.sql
33   SELECT officeNO , SUM(total) AS "Total Revenue"
34   FROM (PostOfficeStaff pos JOIN Payment py ON pos.staffNo =  py.staffNo)
35   GROUP BY officeNo;
```

1:

packageID	destination	orderDate	deliveryDate	plateNo
1	B1A1A1	2021-11-26	2021-11-26	NULL
NULL	NULL	NULL	NULL	NULL

2:

staffNo	staffName	staffPhoneNo	dateHired	salary	officeNo
1	Justin Beaudry	0000000000	2021-11-26	100000	1
2	Sophia Martin	0000000000	2021-11-26	91000	4
3	Mary Atwood	0000000000	2021-11-26	82000	4
6	Justin Austen	0000000000	2021-11-26	100000	1
8	Ava Wilson	0000000000	2021-11-26	89000	4
9	Logan Wood	0000000000	2021-11-26	93000	2
12	Karen Rodriguez	0000000000	2021-11-26	96000	3
20	Keith Lee	0000000000	2021-11-26	75000	1
28	Benjamin Kropotkin	0000000000	2021-11-26	80000	3
30	Taitum Braun	0000000000	2021-11-26	77000	4
31	Chloe Northup	0000000000	2021-11-26	85000	1
32	Ahmed Lavoie	0000000000	2021-11-26	92000	5
36	Kenny Atwood	0000000000	2021-11-26	88000	3
37	Heather Bouchard	0000000000	2021-11-26	91000	2
39	Amilia Northup	0000000000	2021-11-26	77000	1
40	Warren Miller	0000000000	2021-11-26	92000	3
44	Aria Towels	0000000000	2021-11-26	98000	3
46	Sophia Morin	0000000000	2021-11-26	83000	2
49	Omar Kropotkin	0000000000	2021-11-26	97000	5
51	Gordon Stienbeck	0000000000	2021-11-26	93000	4

3:

regionID	numTrucks
1	4
2	3

4:

packageID	destination	orderDate	custName
1115	T8X8A4	2021-11-26	Joel Towels
1212	F2V5D2	2021-11-26	Cole Tremblay
1214	Q2V5W8	2021-11-26	Cole Tremblay
1276	L3R7Z4	2021-11-26	Noah Washington
1314	P6A1J6	2021-11-26	Aria Caufield
1325	M8E4H2	2021-11-26	James Washington
1359	E1Y7Y1	2021-11-26	Karen Chevalier
1394	G3R3K3	2021-11-26	Thomas Tremblay
1481	K4A6L5	2021-11-26	Matthew Northup
1537	N7F5O7	2021-11-26	Amilia Neff
1561	T8Q1U1	2021-11-26	Oliver Sharkey
1701	A4B4S4	2021-11-26	Abigail Wood
1712	I7B5F8	2021-11-26	Amilia Wood
1789	B4I3X6	2021-11-26	Carl Chen
1812	C7N8L7	2021-11-26	Patricia Ramsey
1828	H3O2B3	2021-11-26	Abigail Braun
1835	W7J5P6	2021-11-26	Bill Dimaline
1840	X5L6J1	2021-11-26	Angela Martin
1952	C2U7W8	2021-11-26	Mario Austen
2101	Z8X8S6	2021-11-26	Candace Brown
2138	Y1F2J2	2021-11-26	Patrick Martin
2170	M7Z8K6	2021-11-26	Oliver Garcia
2225	C1X3I4	2021-11-26	Mary Bezos
2249	Z7N3X3	2021-11-26	Bill Martinez

5:

staffNo	staffName	Winning Revenue
▶ 1	Justin Beaudry	1015.00

6:

email	custName	postCode	custPhoneNo	cardNo
▶ abigaildimaline5948@gmail.com	Abigail Dimaline	T5X4H8	6470000000	0000000000000000
abigailmiller7788@gmail.com	Abigail Miller	Z1T6D2	6470000000	0000000000000000
abigailmiller981@gmail.com	Abigail Miller	V4A3W6	6470000000	0000000000000000
abigailramsey1115@gmail.com	Abigail Ramsey	S3J4Q5	6470000000	0000000000000000
abigailstienbeck3421@gmail.com	Abigail Stienbeck	S7G7V8	6470000000	0000000000000000
ahmeddavis462@gmail.com	Ahmed Davis	A6Q6X7	6470000000	0000000000000000
ahmedkeefe6284@gmail.com	Ahmed Keefe	U4H1G4	6470000000	0000000000000000
ahmedkeefe9514@gmail.com	Ahmed Keefe	W8Z2Z7	6470000000	0000000000000000
ahmedsharkey7274@gmail.com	Ahmed Sharkey	B8S6D6	6470000000	0000000000000000
amiliaausten776@gmail.com	Amilia Austen	I7N2A2	6470000000	0000000000000000
amiliabraun657@gmail.com	Amilia Braun	L3R7Z4	6470000000	0000000000000000
amiliamiller6512@gmail.com	Amilia Miller	P5D7E3	6470000000	0000000000000000
amilianeff9152@gmail.com	Amilia Neff	F6H6A5	6470000000	0000000000000000
amiliasmith6613@gmail.com	Amilia Smith	O2S3B3	6470000000	0000000000000000
angelaatwood5029@gmail.com	Angela Atwood	G5H2S8	6470000000	0000000000000000
angelagauthier8553@gmail.com	Angela Gauthier	Q2G4L8	6470000000	0000000000000000
angelajones1821@gmail.com	Angela Jones	Y7R3O3	6470000000	0000000000000000
angelajones3989@gmail.com	Angela Jones	F6W2V1	6470000000	0000000000000000
angelamartin704@gmail.com	Angela Martin	F1Q4W3	6470000000	0000000000000000
ariacaufield2387@gmail.com	Aria Caufield	E1V7J2	6470000000	0000000000000000
ariachen5993@gmail.com	Aria Chen	L3R7Z4	6470000000	0000000000000000
ariaprice7282@gmail.com	Aria Price	J1U7K5	6470000000	0000000000000000
ariaprimeau8369@gmail.com	Aria Primeau	L7P2N6	6470000000	0000000000000000

7:

officeNO	Total Revenue
▶ 1	5000.00
2	3845.00
3	5675.00
4	3955.00
5	4050.00

6. Hand in your modification commands and the response of the system

```sql
1    -- 1. Sets delivery date of undelivered packages with ID under 1000 to today
2    UPDATE Package
3    SET deliveryDate = CURRENT_DATE()
4    WHERE packageID < 1000 AND deliveryDate IS NULL;
5
6    -- 2. Calculate the total of each payment from the package prices related to them
7    SET SQL_SAFE_UPDATES = 0;
8
9    UPDATE Payment py
10   SET total = (SELECT SUM(price) FROM Package pk
11                 WHERE py.transactionNo = pk.transactionNo);
12
13   -- 3. Delete trucks that are over 8 years old
14   DELETE FROM Truck WHERE YEAR(CURDATE()) - yearPurchased > 8;
15   SET SQL_SAFE_UPDATES = 1;
```

✓ 45	19:33:33	UPDATE Package SET deliveryDate = CURRENT_DATE() WHERE packageID < 1000 AND deliveryDate IS NULL	15 row(s) affected Rows matched: 15 Changed: 15 W...	0.0046 sec
✓ 46	19:33:33	SET SQL_SAFE_UPDATES = 0	0 row(s) affected	0.00018 sec
✓ 47	19:33:33	UPDATE Payment py SET total = (SELECT SUM(price) FROM Package pk WHERE py.transactionNo = pk.transaction...	400 row(s) affected Rows matched: 4001 Changed:...	0.068 sec
✓ 48	19:33:34	DELETE FROM Truck WHERE YEAR(CURDATE()) - yearPurchased > 8	4 row(s) affected	0.0013 sec
✓ 49	19:33:34	SET SQL_SAFE_UPDATES = 1	0 row(s) affected	0.00021 sec

7. **Hand in your CREATE VIEW statements and the response of the system. Also, show a query involving each view and the system response (but truncate the response if there are more than a few tuples produced). Finally, show a script of what happens when you try to modify your view, say by inserting a new tuple into it. Are your views updatable? Tell why or why not?**

After attempting to update our VIEW statements it was clear by our results in the screenshots below we were not able to. Thus our views are not updatable because of the two tables present, making it unchangeable.

```
1     -- 1.
2  ●  CREATE VIEW driverRegion AS
3     SELECT d.staffNo, d.staffName, d.licenseNo, t.plateNo, t.regionID
4     FROM Driver AS d INNER JOIN Truck AS t
5     ON d.plateNo = t.plateNo;
6
7     -- SELECT * FROM driverRegion WHERE regionID = 1;
8
9     -- 2.
10 ●  CREATE VIEW paymentHandler AS
11    SELECT p.transactionNo, p.total, p.payDate, s.staffName, s.staffNo
12    FROM Payment AS p INNER JOIN PostOfficeStaff AS s
13    ON p.staffNo = s.staffNo;
14
15    -- Select's All payments made by Justin Beaudry (Employee of the month)
16    -- SELECT * FROM paymentHandler WHERE staffNo =  1;
17
18
19    -- 3.
20 ●  CREATE VIEW packageInfo AS
21    SELECT p.packageID, p.destination, p.orderDate, p.deliveryDate, d.staffName, d.plateNo
22    FROM Package AS p INNER JOIN Driver AS d
23    ON p.plateNo = d.plateNo;
24
25    -- SELECT * FROM packageInfo WHERE orderDate > 2021/01/01;
26
```

✓ 78	19:53:34	CREATE VIEW driverRegion AS SELECT d.staffNo, d.staffName, d.licenseNo, t.regionID FROM Driver AS d INNER JOIN... 0 row(s) affected		0.022 sec
✓ 79	19:53:34	CREATE VIEW paymentHandler AS SELECT p.transactionNo, p.total, p.payDate, s.staffName, s.staffNo FROM Payment... 0 row(s) affected		0.0050 sec
✓ 80	19:53:34	CREATE VIEW packageInfo AS SELECT p.packageID, p.destination, p.orderDate, p.deliveryDate, d.staffName, d.plateN... 0 row(s) affected		0.0028 sec

1:

staffNo	staffName	licenseNo	plateNo	regionID
▶ 1	Warren Sucklal	B23600000000000	AV00000	1

2:

transaction...	total	payDate	staffName	staffNo
▶ 1	25.00	2021-11-26	Justin Beaudry	1
29	5.00	2021-11-26	Justin Beaudry	1
180	NULL	2021-11-26	Justin Beaudry	1
193	5.00	2021-11-26	Justin Beaudry	1
265	NULL	2021-11-26	Justin Beaudry	1
353	NULL	2021-11-26	Justin Beaudry	1
399	NULL	2021-11-26	Justin Beaudry	1
404	NULL	2021-11-26	Justin Beaudry	1
490	15.00	2021-11-26	Justin Beaudry	1
567	5.00	2021-11-26	Justin Beaudry	1
588	NULL	2021-11-26	Justin Beaudry	1
854	30.00	2021-11-26	Justin Beaudry	1
983	NULL	2021-11-26	Justin Beaudry	1

3:

Trying to modify view:

8. **Was there an SQL clause that you learned in class (from ISO standard) that you were not able to use in MySQL because the dialect has not implemented it?**

In the project's entirety, we have not encountered a SQL clause that could not be implemented using MySQL workbench.