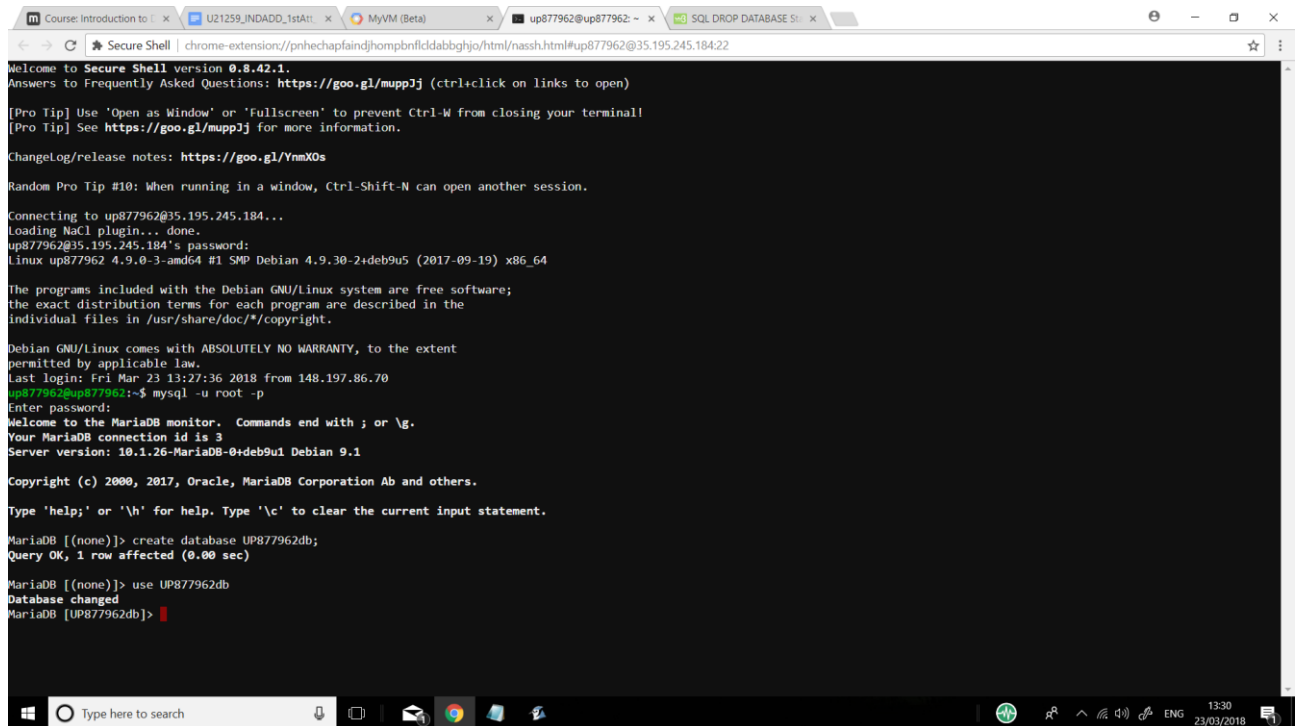


## Submission 3: The Database

### Task 3a: Database Creation

#### 1) Screenshot of create and use commands:



The screenshot shows a terminal window titled "Secure Shell" with the following content:

```
Welcome to Secure Shell version 0.8.42.1.
Answers to Frequently Asked Questions: https://goo.gl/mupplj (ctrl+click on links to open)

[Pro Tip] Use 'Open as Window' or 'Fullscreen' to prevent Ctrl-W from closing your terminal!
[Pro Tip] See https://goo.gl/mupplj for more information.

Changelog/release notes: https://goo.gl/YnmX0s

Random Pro Tip #10: When running in a window, Ctrl-Shift-N can open another session.

Connecting to up877962@35.195.245.184...
Loading NaCl plugin... done.
up877962@35.195.245.184's password:
Linux up877962 4.9.0-3-amd64 #1 SMP Debian 4.9.30-2+deb9u5 (2017-09-19) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Mar 23 13:27:36 2018 from 148.197.86.70
up877962@up877962:~$ mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 3
Server version: 10.1.26-MariaDB-0+deb9u1 Debian 9.1

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database UP877962db;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use UP877962db
Database changed
MariaDB [UP877962db]>
```

## 2) Screenshots of table creation

Table DeliveryCollection:

```

Course: Introduction to ... x  JM ERD to Implement ... x  basictablesTESTED.txt ... x  U21259_INDADD_1stA ... x  MyVM (Beta) ... x  up877962@up877962 ... x  Inbox (38) - up877962 ... x
Secure Shell | chrome-extension://pnhechapfaindjhompbnfildabbghjo/html/nassh.html#up877962@35.195.245.184:22
MariaDB [(none)]> use UP877962db;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| Outlet                |
| Publication            |
| Publisher              |
| RestockOrder           |
| Staff                  |
| Vehicle                |
+-----+
6 rows in set (0.00 sec)

MariaDB [UP877962db]> create table DeliveryCollection(
  -> delColl_ID int auto_increment primary key,
  -> delColl_Date date not null,
  -> delColl_veh_RegNo varchar(30) not null,
  -> delColl_staff_ID int not null,
  -> foreign key (delColl_veh_RegNo) references Vehicle(veh_RegNo),
  -> foreign key (delColl_staff_ID) references Staff(staff_ID)
  -> );
Query OK, 0 rows affected (0.00 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| DeliveryCollection     |
| Outlet                |
| Publication            |
| Publisher              |
| RestockOrder           |
| Staff                  |
| Vehicle                |
+-----+
7 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

```

MariaDB [UP877962db]> describe DeliveryCollection;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| delColl_ID     | int(11)       | NO   | PRI | NULL    | auto_increment |
| delColl_Date   | date          | NO   |     | NULL    |                |
| delColl_veh_RegNo | varchar(30)   | NO   | MUL | NULL    |                |
| delColl_staff_ID | int(11)       | NO   | MUL | NULL    |                |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.03 sec)

MariaDB [UP877962db]>

```

## Table Outlet Order

```

Course: Introduction to ... x JM ERD to Implement x basicTablesTESTED.txt x U21259_INDADD_1stA x MyVM (Beta) x up877962@up877962 x Inbox (38) - up877962 x
Secure Shell | chrome-extension://pnhechapfaindjhompbnrlcldabbghjo/html/nassh.html#up877962@35.195.245.184:22
Query OK, 0 rows affected (0.08 sec)
MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| DeliveryCollection   |
| Outlet              |
| Publication          |
| Publisher            |
| RestockOrder         |
| Staff               |
| Vehicle              |
+-----+
7 rows in set (0.00 sec)

MariaDB [UP877962db]> create table OutletOrder(
  -> outOrd_ID int auto increment primary key,
  -> outOrd_outlet_ID int not null,
  -> outOrd_delColl_ID int not null,
  ->
  -> foreign key (outOrd_outlet_ID) references Outlet(outlet_ID),
  -> foreign key (outOrd_delColl_ID) references DeliveryCollection(delColl_ID)
  ->
  -> );
Query OK, 0 rows affected (0.10 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| DeliveryCollection   |
| Outlet              |
| OutletOrder          |
| Publication          |
| Publisher            |
| RestockOrder         |
| Staff               |
| Vehicle              |
+-----+
8 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

```

MariaDB [UP877962db]> describe OutletOrder;
+-----+-----+-----+-----+-----+-----+
| Field          | Type   | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| outOrd_ID      | int(11)| NO   | PRI | NULL    | auto_increment |
| outOrd_outlet_ID | int(11)| NO   | MUL | NULL    |                |
| outOrd_delColl_ID | int(11)| NO   | MUL | NULL    |                |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table Outlet Return

```

Course: Introduction to ... x  JM ERD to Implement ... x  basicstablesTESTED.txt ... x  U21259_INDADD_1st ... x  MyVM (Beta) ... x  up877962@up877962 ... x  Inbox (38) - up877962 ... x
chrome-extension://pnhechapfaindjhompbnfclddabbghjo/html/nassh.html#up877962@35.195.245.184:22

+-----+
| DeliveryCollection |
| Outlet             |
| OutletOrder        |
| Publication         |
| PublicationInOrder  |
| Publisher           |
| RestockOrder        |
| Staff              |
| Vehicle             |
+-----+
9 rows in set (0.00 sec)

MariaDB [UP877962db]> create table OutletReturn(
  -> outRtn_ID int auto increment primary key,
  -> outRtn_outlet_ID int not null,
  -> outRtn_delColl_ID int not null,
  ->
  ->
  -> foreign key (outRtn_outlet_ID) references Outlet(outlet_ID),
  -> foreign key (outRtn_delColl_ID) references DeliveryCollection(delColl_ID)
  -> );
Query OK, 0 rows affected (0.04 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| DeliveryCollection    |
| Outlet                |
| OutletOrder           |
| OutletReturn          |
| Publication            |
| PublicationInOrder     |
| Publisher              |
| RestockOrder           |
| Staff                 |
| Vehicle               |
+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

```
MariaDB [UP877962db]> describe OutletReturn;
```

Field	Type	Null	Key	Default	Extra
outRtn_ID	int(11)	NO	PRI	NULL	auto_increment
outRtn_outlet_ID	int(11)	NO	MUL	NULL	
outRtn_delColl_ID	int(11)	NO	MUL	NULL	

3 rows in set (0.00 sec)

```
MariaDB [UP877962db]>
```

## Table PublicationInOrder

```

Tables_in_UP877962db
+-----+
| DeliveryCollection |
| Outlet |
| OutletOrder |
| Publication |
| Publisher |
| RestockOrder |
| Staff |
| Vehicle |
+-----+
8 rows in set (0.00 sec)

MariaDB [UP877962db]> create table PublicationInOrder(
  -> pubInOrder_DateTime datetime primary key,
  -> pubInOrd_Qty int,
  -> pubOrd_public_ID int not null,
  -> outOrd_outOrd_ID int not null,
  ->
  -> foreign key (pubOrd_public_ID) references Publication(public_ID),
  -> foreign key (outOrd_outOrd_ID) references OutletOrder(outOrd_ID)
  -> );
Query OK, 0 rows affected (0.04 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| DeliveryCollection |
| Outlet |
| OutletOrder |
| Publication |
| PublicationInOrder |
| Publisher |
| RestockOrder |
| Staff |
| Vehicle |
+-----+
9 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

```

MariaDB [UP877962db]> describe PublicationInOrder;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| pubInOrder_DateTime | datetime | NO | PRI | NULL |  |
| pubInOrd_Qty | int(11) | YES |  | NULL |  |
| pubOrd_public_ID | int(11) | NO | MUL | NULL |  |
| outOrd_outOrd_ID | int(11) | NO | MUL | NULL |  |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table PublicationInReturn

```

Course: Introduction to ... x  JM ERD to Implement ... x  basicstablesTESTED.txt ... x  U21259_INDADD_1st ... x  MyVM (Beta) ... x  up877962@up877962 ... x  Inbox (38) - up877962 ... x
Secure Shell  chrome-extension://pnhechapfaindjhompbnfildabbghjo/html/nassh.html#up877962@35.195.245.184:22
OutletOrder
OutletReturn
Publication
PublicationInOrder
Publisher
RestockOrder
Staff
Vehicle
-----
10 rows in set (0.00 sec)

MariaDB [UP877962db]> create table PublicationInReturn(
  -> pubInRtn_DateTime datetime primary key,
  -> pubInRtn_Qty int ,
  -> pubInRet_OutRtn_ID int not null,
  -> pubInRet_public_ID int not null,
  ->
  ->
  -> foreign key (pubInRet_OutRtn_ID) references OutletReturn(outRtn_ID),
  -> foreign key (pubInRet_public_ID) references Publication(public_ID)
  ->
  -> );
Query OK, 0 rows affected (0.05 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| DeliveryCollection    |
| Outlet                |
| OutletOrder           |
| OutletReturn          |
| Publication            |
| PublicationInOrder     |
| PublicationInReturn    |
| Publisher              |
| RestockOrder           |
| Staff                  |
| Vehicle                |
+-----+
11 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

```

MariaDB [UP877962db]> describe PublicationInReturn;
+-----+-----+-----+-----+-----+-----+
| Field                | Type      | Null  | Key  | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| pubInRtn_DateTime    | datetime  | NO    | PRI  | NULL    |       |
| pubInRtn_Qty          | int(11)   | YES   |      | NULL    |       |
| pubInRet_OutRtn_ID    | int(11)   | NO    | MUL  | NULL    |       |
| pubInRet_public_ID    | int(11)   | NO    | MUL  | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table PublicationInRestockOrder

```

Course: Introduction to ... JM ERD to Implement ... basic tables TESTED.txt ... U21259_INDADD_1st/ ... MyVM (Beta) ... up877962@up877962 ... Inbox (38) - up877962 ...
Secure Shell | chrome-extension://pnhechapfaindjhompbnrlfclddbghjo/html/nassh.html#up877962@35.195.245.184:22
Publication
PublicationInOrder
PublicationInReturn
Publisher
RestockOrder
Staff
Vehicle
-----+
11 rows in set (0.00 sec)

MariaDB [UP877962db]> create table PublicationInRestockOrder(
-> pubRestock_DateTime datetime primary key,
-> pubRestock_Qty int ,
-> pubRestock_restock_ID int not null,
-> pubRestock_public_ID int not null,
->
-> foreign key (pubRestock_restock_ID) references RestockOrder(restock_ID),
-> foreign key (pubRestock_public_ID) references Publication(public_ID)
-> );
Query OK, 0 rows affected (0.08 sec)

MariaDB [UP877962db]> show tables;
+-----+
Tables_in_UP877962db
+-----+
DeliveryCollection
Outlet
OutletOrder
OutletReturn
Publication
PublicationInOrder
PublicationInRestockOrder
PublicationInReturn
Publisher
RestockOrder
Staff
Vehicle
+-----+
12 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

```

MariaDB [UP877962db]> describe PublicationInRestockOrder;
+-----+-----+-----+-----+-----+-----+
| Field          | Type      | Null  | Key  | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| pubRestock_DateTime | datetime  | NO    | PRI  | NULL    |       |
| pubRestock_Qty      | int(11)   | YES   |      | NULL    |       |
| pubRestock_restock_ID | int(11)   | NO    | MUL  | NULL    |       |
| pubRestock_public_ID | int(11)   | NO    | MUL  | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table Contract

```

Course: Introduction to ... x JM ERD to Implement x basictablesTESTED.txt x U21259_INDADD_1stA x MyVM (Beta) x up877962@up877962 x Inbox (38) - up877962 x
Secure Shell | chrome-extension://pnhechapfaindjhompbnfclcdabbghjo/html/nassh.html#up877962@35.195.245.184:22
RestockOrder
Staff
Vehicle
-----
12 rows in set (0.00 sec)

MariaDB [UP877962db]> create table Contract(
  -> contract_ID int auto_increment primary key,
  -> contract_StartDate date,
  -> contract_EndDate date,
  -> contract_Public_ID int not null,
  -> contract_publish_ID int not null,
  -> contract_outlet_ID int not null,
  ->
  ->
  -> foreign key (contract_Public_ID) references Publication(public_ID),
  -> foreign key (contract_publish_ID) references Publisher(publish_ID),
  -> foreign key (contract_outlet_ID) references Outlet(outlet_ID)
  -> );
Query OK, 0 rows affected (0.10 sec)

MariaDB [UP877962db]> show tables;
+-----+
Tables_in_UP877962db
+-----+
Contract
DeliveryCollection
Outlet
OutletOrder
OutletReturn
Publication
PublicationInOrder
PublicationInRestockOrder
PublicationInReturn
Publisher
RestockOrder
Staff
Vehicle
-----
13 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

MariaDB [UP877962db]> describe Contract;

Field	Type	Null	Key	Default	Extra
contract_ID	int(11)	NO	PRI	NULL	auto_increment
contract_StartDate	date	YES		NULL	
contract_EndDate	date	YES		NULL	
contract_Public_ID	int(11)	NO	MUL	NULL	
contract_publish_ID	int(11)	NO	MUL	NULL	
contract_outlet_ID	int(11)	NO	MUL	NULL	

6 rows in set (0.00 sec)

MariaDB [UP877962db]>



## Screenshots of table population

### Table DeliveryCollection

```

11 rows in set (0.00 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| Contract              |
| DeliveryCollection    |
| Outlet                |
| OutletOrder           |
| OutletReturn          |
| Publication            |
| PublicationInOrder     |
| PublicationInRestockOrder |
| PublicationInReturn    |
| Publisher             |
| RestockOrder          |
| Staff                 |
| Vehicle               |
+-----+

13 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from DeliveryCollection;
+-----+-----+-----+-----+
| delColl_ID | delColl_Date | delColl_veh_RegNo | delColl_staff_ID |
+-----+-----+-----+-----+
| 1          | 2018-04-01   | AB15 TRW         | 1                 |
| 2          | 2018-04-03   | AB16 TRW         | 2                 |
| 3          | 2018-03-29   | AB17 TRW         | 3                 |
| 4          | 2018-04-03   | AB18 TRW         | 5                 |
| 5          | 2018-04-02   | AB19 TRW         | 4                 |
| 6          | 2018-04-08   | AB17 TRW         | 2                 |
| 7          | 2018-04-01   | AB16 TRW         | 3                 |
| 8          | 2018-03-30   | AB18 TRW         | 1                 |
| 9          | 2018-04-02   | AB16 TRW         | 4                 |
| 10         | 2018-04-11   | AB19 TRW         | 5                 |
| 11         | 2018-03-29   | AB18 TRW         | 2                 |
| 12         | 2018-04-10   | AB18 TRW         | 1                 |
| 13         | 2018-04-06   | AB15 TRW         | 4                 |
+-----+-----+-----+-----+

13 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

### Table Outlet Order

```

13 rows in set (0.00 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| Contract              |
| DeliveryCollection    |
| Outlet                |
| OutletOrder           |
| OutletReturn          |
| Publication            |
| PublicationInOrder     |
| PublicationInRestockOrder |
| PublicationInReturn    |
| Publisher             |
| RestockOrder          |
| Staff                 |
| Vehicle               |
+-----+

13 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from OutletOrder;
+-----+-----+-----+
| outOrd_ID | outOrd_outlet_ID | outOrd_delColl_ID |
+-----+-----+-----+
| 1          | 12                | 1                  |
| 2          | 1                 | 2                  |
| 3          | 16                | 10                 |
| 4          | 6                 | 4                  |
| 5          | 26                | 5                  |
| 6          | 22                | 9                  |
| 7          | 3                 | 7                  |
| 8          | 8                 | 8                  |
| 9          | 17                | 6                  |
| 10         | 11                | 3                  |
| 11         | 28                | 11                 |
| 12         | 14                | 13                 |
| 13         | 7                 | 12                 |
+-----+-----+-----+

13 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table Outlet Return

```

Course: Intro x JM ERD to i x basicables x U21259_IN x MyVM (Be x up877962@ x Inbox (37) - x SQL DELETE x auto incre x datetime for x
Secure Shell | chrome-extension://pnhechapfaindjhompbnfildabbghjo/html/nassh.html#up877962@35.195.245.184:22

Staff
Vehicle
-----
13 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from OutletOrder;
+-----+-----+-----+
| outOrd_ID | outOrd_outlet_ID | outOrd_delColl_ID |
+-----+-----+-----+
| 1 | 12 | 1 |
| 2 | 1 | 2 |
| 3 | 16 | 10 |
| 4 | 6 | 4 |
| 5 | 26 | 5 |
| 6 | 22 | 9 |
| 7 | 3 | 7 |
| 8 | 8 | 8 |
| 9 | 17 | 6 |
| 10 | 11 | 3 |
| 11 | 28 | 11 |
| 12 | 14 | 13 |
| 13 | 7 | 12 |
+-----+-----+-----+
13 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from OutletReturn;
+-----+-----+-----+
| outRtn_ID | outRtn_outlet_ID | outRtn_delColl_ID |
+-----+-----+-----+
| 1 | 12 | 3 |
| 2 | 23 | 4 |
| 3 | 1 | 9 |
| 4 | 17 | 2 |
| 5 | 8 | 1 |
| 6 | 29 | 5 |
| 7 | 4 | 11 |
| 8 | 16 | 8 |
| 9 | 26 | 9 |
| 10 | 11 | 13 |
+-----+-----+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table PublicationInOrder

```

Course: Intro x JM ERD to i x basicables x U21259_IN x MyVM (Be x up877962@ x Inbox (37) - x SQL DELETE x auto incre x datetime for x
Secure Shell | chrome-extension://pnhechapfaindjhompbnfildabbghjo/html/nassh.html#up877962@35.195.245.184:22

Staff
Vehicle
-----
13 rows in set (0.00 sec)

MariaDB [UP877962db]> show tables;
+-----+
| Tables_in_UP877962db |
+-----+
| Contract |
| DeliveryCollection |
| Outlet |
| OutletOrder |
| OutletReturn |
| Publication |
| PublicationInOrder |
| PublicationInRestockOrder |
| PublicationInReturn |
| Publisher |
| RestockOrder |
| Staff |
| Vehicle |
+-----+
13 rows in set (0.00 sec)

MariaDB [UP877962db]> select* from PublicationInOrder;
+-----+-----+-----+-----+
| pubInOrd_DateTime | pubInOrd_Qty | pubOrd_public_ID | outOrd_outOrd_ID |
+-----+-----+-----+-----+
| 2018-03-28 15:17:23 | 5000 | 4 | 5 |
| 2018-03-29 14:26:02 | 2000 | 7 | 3 |
| 2018-04-01 11:46:09 | 2000 | 16 | 1 |
| 2018-04-02 14:30:18 | 5000 | 1 | 4 |
| 2018-04-02 16:57:45 | 800 | 23 | 2 |
| 2018-04-03 09:40:16 | 700 | 18 | 9 |
| 2018-04-04 13:11:11 | 3000 | 19 | 8 |
| 2018-04-04 14:30:17 | 200 | 26 | 7 |
| 2018-04-05 11:45:33 | 400 | 12 | 11 |
| 2018-04-06 10:18:05 | 1000 | 29 | 12 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table PublicationInReturn

```

Course: Intro x JM ERD to x basicables x U21259_IN x MyVM (Beta x up877962@ x Inbox (37) x SQL DELETE x auto incre x datetime for x
Secure Shell | chrome-extension://pnhechapfaindjhompbnrlcldabbghjo/html/nassh.html#up877962@35.195.245.184:22
PublicationInReturn
Publisher
RestockOrder
Staff
Vehicle
-----
13 rows in set (0.00 sec)

MariaDB [UP877962db]> select* from PublicationInOrder;
+-----+-----+-----+-----+
| pubInOrd_DateTime | pubInOrd_Qty | pubOrd_public_ID | outOrd_outOrd_ID |
+-----+-----+-----+-----+
| 2018-03-28 15:17:23 | 5000 | 4 | 5 |
| 2018-03-29 14:26:02 | 2000 | 7 | 3 |
| 2018-04-01 11:46:09 | 2000 | 16 | 1 |
| 2018-04-02 14:30:18 | 5000 | 1 | 4 |
| 2018-04-02 16:57:45 | 800 | 23 | 2 |
| 2018-04-03 09:40:16 | 700 | 18 | 9 |
| 2018-04-04 13:11:11 | 3000 | 19 | 8 |
| 2018-04-04 14:30:17 | 200 | 26 | 7 |
| 2018-04-05 11:45:33 | 400 | 12 | 11 |
| 2018-04-06 10:18:05 | 1000 | 29 | 12 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from PublicationInReturn;
+-----+-----+-----+-----+
| pubInRtn_DateTime | pubInRtn_Qty | pubInRet_OutRtn_ID | pubInRet_public_ID |
+-----+-----+-----+-----+
| 2018-03-30 14:30:18 | 50 | 8 | 9 |
| 2018-03-30 14:44:01 | 50 | 9 | 14 |
| 2018-04-01 11:33:23 | 40 | 7 | 17 |
| 2018-04-01 13:31:44 | 140 | 4 | 19 |
| 2018-04-02 13:29:12 | 150 | 1 | 22 |
| 2018-04-02 14:29:18 | 150 | 4 | 27 |
| 2018-04-02 14:32:12 | 100 | 6 | 30 |
| 2018-04-02 16:34:09 | 30 | 3 | 2 |
| 2018-04-03 09:19:04 | 70 | 5 | 12 |
| 2018-04-04 12:32:43 | 150 | 2 | 7 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table PublicationInRestockOrder

```

Course: Intro x JM ERD to x basicables x U21259_IN x MyVM (Beta x up877962@ x Inbox (37) x SQL DELETE x auto incre x datetime for x
Secure Shell | chrome-extension://pnhechapfaindjhompbnrlcldabbghjo/html/nassh.html#up877962@35.195.245.184:22
+-----+-----+-----+-----+
| 2018-04-04 13:11:11 | 3000 | 19 | 8 |
| 2018-04-04 14:30:17 | 200 | 26 | 7 |
| 2018-04-05 11:45:33 | 400 | 12 | 11 |
| 2018-04-06 10:18:05 | 1000 | 29 | 12 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

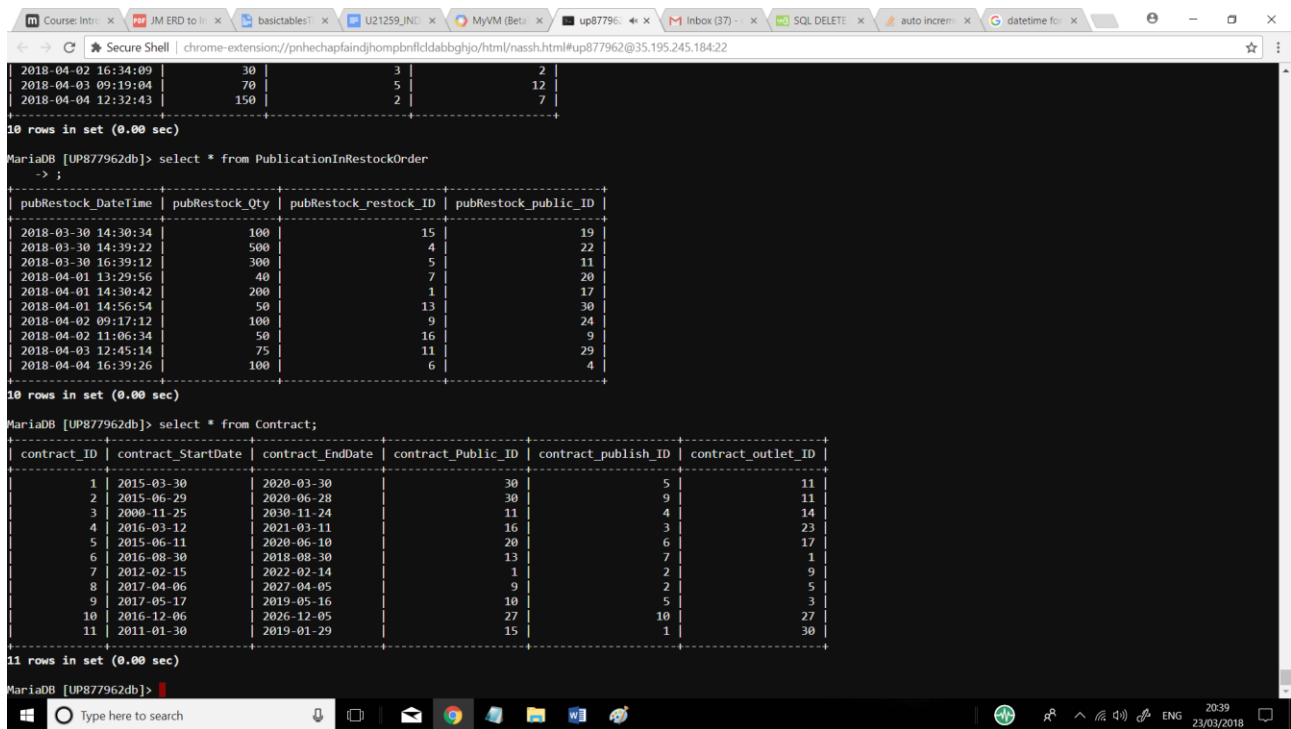
MariaDB [UP877962db]> select * from PublicationInReturn;
+-----+-----+-----+-----+
| pubInRtn_DateTime | pubInRtn_Qty | pubInRet_OutRtn_ID | pubInRet_public_ID |
+-----+-----+-----+-----+
| 2018-03-30 14:30:18 | 50 | 8 | 9 |
| 2018-03-30 14:44:01 | 50 | 9 | 14 |
| 2018-04-01 11:33:23 | 40 | 7 | 17 |
| 2018-04-01 13:31:44 | 140 | 4 | 19 |
| 2018-04-02 13:29:12 | 150 | 1 | 22 |
| 2018-04-02 14:29:18 | 150 | 4 | 27 |
| 2018-04-02 14:32:12 | 100 | 6 | 30 |
| 2018-04-02 16:34:09 | 30 | 3 | 2 |
| 2018-04-03 09:19:04 | 70 | 5 | 12 |
| 2018-04-04 12:32:43 | 150 | 2 | 7 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from PublicationInRestockOrder
-> ;
+-----+-----+-----+-----+
| pubRestock_DateTime | pubRestock_Qty | pubRestock_restock_ID | pubRestock_public_ID |
+-----+-----+-----+-----+
| 2018-03-30 14:30:34 | 100 | 15 | 19 |
| 2018-03-30 14:39:22 | 500 | 4 | 22 |
| 2018-03-30 16:39:12 | 300 | 5 | 11 |
| 2018-04-01 13:29:56 | 40 | 7 | 20 |
| 2018-04-01 14:30:42 | 200 | 1 | 30 |
| 2018-04-01 14:56:54 | 50 | 13 | 30 |
| 2018-04-02 09:17:12 | 100 | 9 | 24 |
| 2018-04-02 11:06:34 | 50 | 16 | 9 |
| 2018-04-03 12:45:14 | 75 | 11 | 29 |
| 2018-04-04 16:39:26 | 100 | 6 | 4 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]>

```

## Table Contract



The screenshot shows a terminal window with a Secure Shell connection. The terminal displays two SQL queries and their results. The first query selects all data from the 'PublicationInRestockOrder' table, returning 10 rows. The second query selects all data from the 'Contract' table, returning 11 rows. The terminal output is as follows:

```
10 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from PublicationInRestockOrder
-> ;
+-----+-----+-----+-----+
| pubRestock_DateTime | pubRestock_Qty | pubRestock_restock_ID | pubRestock_public_ID |
+-----+-----+-----+-----+
| 2018-03-30 14:30:34 | 100 | 15 | 19 |
| 2018-03-30 14:39:22 | 500 | 4 | 22 |
| 2018-03-30 16:39:12 | 300 | 5 | 11 |
| 2018-04-01 13:29:56 | 40 | 7 | 20 |
| 2018-04-01 14:30:42 | 200 | 1 | 17 |
| 2018-04-01 14:56:54 | 50 | 13 | 30 |
| 2018-04-02 09:17:12 | 100 | 9 | 24 |
| 2018-04-02 11:06:34 | 50 | 16 | 9 |
| 2018-04-03 12:45:14 | 75 | 11 | 29 |
| 2018-04-04 16:39:26 | 100 | 6 | 4 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

MariaDB [UP877962db]> select * from Contract;
+-----+-----+-----+-----+-----+-----+
| contract_ID | contract_StartDate | contract_EndDate | contract_Public_ID | contract_publish_ID | contract_outlet_ID |
+-----+-----+-----+-----+-----+-----+
| 1 | 2015-03-30 | 2020-03-30 | 30 | 5 | 11 |
| 2 | 2015-06-29 | 2020-06-28 | 30 | 9 | 11 |
| 3 | 2000-11-25 | 2030-11-24 | 11 | 4 | 14 |
| 4 | 2016-03-12 | 2021-03-11 | 16 | 3 | 23 |
| 5 | 2015-06-11 | 2020-06-10 | 20 | 6 | 17 |
| 6 | 2016-08-30 | 2018-08-30 | 13 | 7 | 1 |
| 7 | 2012-02-15 | 2022-02-14 | 1 | 2 | 9 |
| 8 | 2017-04-06 | 2027-04-05 | 9 | 2 | 5 |
| 9 | 2017-05-17 | 2019-05-16 | 10 | 5 | 3 |
| 10 | 2016-12-06 | 2026-12-05 | 27 | 10 | 27 |
| 11 | 2011-01-30 | 2019-01-29 | 15 | 1 | 30 |
+-----+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

MariaDB [UP877962db]>
```

## Task 3b: General SQL Queries

### Query 1

Query Description and why it's of use to JM:

This query pulls up the relevant information about the deliveries and collections associated with a driver on a given date. This could be of use if drivers are unable to work that day or just to check what they are doing that day.

Screenshot of results:

```
MariaDB [UP877962db]> select * from DeliveryCollection
-> where delColl_Date = "2018-04-03"
-> and delColl_staff_ID = 2;
```

delColl_ID	delColl_Date	delColl_veh_RegNo	delColl_staff_ID
2	2018-04-03	AB16 TRW	2

```
1 row in set (0.00 sec)
MariaDB [UP877962db]>
```

### Query 2

Query Description and why it's of use to JM:

This query brings up the current publications in order and the outlet ID's of the outlets ordering them, as well as the total amount of publications and the date and time they were ordered. This is of use to keep a check on what is being ordered by who and when.

Screenshot of results:

```
MariaDB [UP877962db]> SELECT PublicationInOrder.pubInOrd_Qty, OutletOrder.outOrd_outlet_ID, PublicationInOrder.pubOrd_public_ID, PublicationInOrder.pubInOrder_DateTime
-> FROM PublicationInOrder
-> INNER JOIN OutletOrder
-> ON PublicationInOrder.pubOrd_public_ID=OutletOrder.outOrd_outlet_ID;
```

pubInOrd_Qty	outOrd_outlet_ID	pubOrd_public_ID	pubInOrder_DateTime
2000	7	7	2018-03-29 14:26:02
2000	16	16	2018-04-01 11:46:09
5000	1	1	2018-04-02 14:30:18
200	26	26	2018-04-04 14:30:17
400	12	12	2018-04-05 11:45:33

```
5 rows in set (0.02 sec)
MariaDB [UP877962db]>
```

### Query 3

Query Description and why it's of use to JM:

This query brings up the profit margins for the publications in the database. This could be used to renegotiate prices where necessary or to get rid of publications if they are not very profitable and not selling well.

Screenshot of results:

The screenshot shows a terminal window with a Secure Shell App. The terminal displays the execution of a SQL query to calculate profit margins for publications. The query is: `SELECT public_Title, public_CoverPrice - public_WholesalePrice AS profit_Margin FROM Publication ORDER BY profit_Margin desc;`. The results are displayed in a table with two columns: `public_Title` and `profit_Margin`. The results are sorted in descending order of profit margin. The terminal also shows the number of rows in the set (30 rows) and the time taken to execute the query (0.00 sec).

public_Title	profit_Margin
Porche Today	0.85
Perfect Pets	0.70
Stargate Monthly	0.69
Apple Now	0.65
4 x 4	0.65
Gardening for Beginners	0.64
Voyager Monthly	0.55
Gardeners Today	0.50
Crufts	0.49
Womens Views	0.49
Cats Today	0.49
PC Advisor	0.49
In Bloom	0.45
IT World	0.45
PC Today	0.45
Dogs World	0.45
Star Trek Today	0.45
Guardians of the Galaxy	0.35
Star Trek World	0.30
Raspberry PI	0.30
Womens Own	0.25
How to Speak Klingon	0.25
Womens Weekly	0.25
Womens Realm	0.15
The Independant	0.10
The Guardian	0.10
The Times	0.10
The Telegraph	0.10
The Mail	0.10
The Sun	0.02

## Query 4

Query Description and why it's of use to JM:

This query displays the publications a publisher produces and the frequency that they publish them. This is useful to look at the titles a publisher publishes.

Screenshot of results:

```

MariaDB [UP877962db]> SELECT Publication.public_Title, Publisher.publish_Name, Publication.public_Frequency
-> FROM Publisher
-> Inner JOIN Publication
-> ON Publisher.publish_ID=Publication.public_publish_ID
-> WHERE publish_ID = 3;

```

public_Title	publish_Name	public_Frequency
Gardeners Today	John Brown Media	Monthly
Gardening for Beginners	John Brown Media	Monthly
Voyager Monthly	John Brown Media	Monthly
Porche Today	John Brown Media	Monthly

```

4 rows in set (0.00 sec)

```

## Query 5

Query Description and why it's of use to JM:

This query displays the amount of publications in return that are over 100 for a certain Outlet in this case outlet 4 as well as the time and dates of the returns. This is useful to check if an outlet is potentially overordering on a regular basis.

Screenshot of results:

```

MariaDB [UP877962db]> SELECT * from PublicationInReturn
-> WHERE pubInRtn_Qty > 100
-> AND pubInRet_OutRtn_ID = 4;

```

pubInRtn_DateTime	pubInRtn_Qty	pubInRet_OutRtn_ID	pubInRet_public_ID
2018-04-01 13:31:44	140	4	19
2018-04-02 14:29:18	150	4	27

```

2 rows in set (0.00 sec)

```

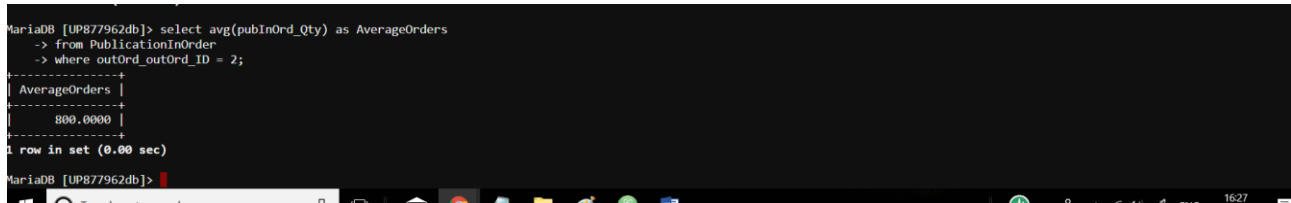
### Task 3c: SQL Queries using Aggregate Function

#### Query 1

Query Description and why it's of use to JM:

This query lets you look at the average amount of publications an outlet orders. This could be useful for working out how roughly how many publications an outlet may be taking at a time.

Screenshot of results:



```
MariaDB [UP877962db]> select avg(pubInOrd_Qty) as AverageOrders
-> from PublicationInOrder
-> where outOrd_outOrd_ID = 2;
+-----+
| AverageOrders |
+-----+
| 800.0000      |
+-----+
1 row in set (0.00 sec)

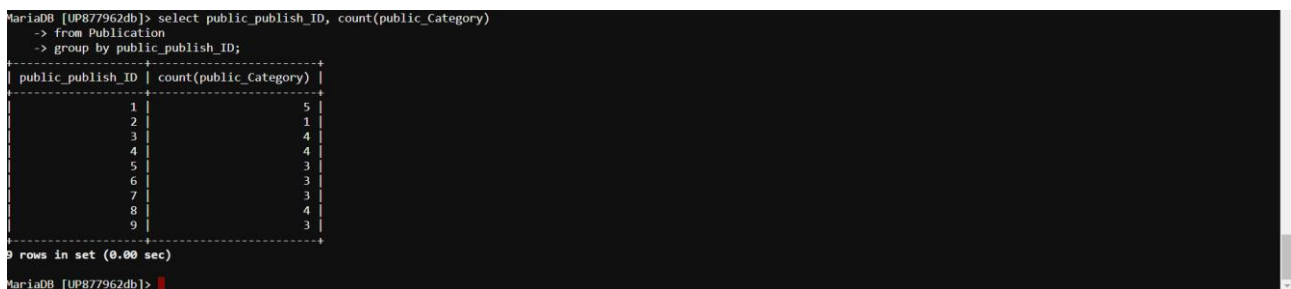
MariaDB [UP877962db]>
```

#### Query 2

Query Description and why it's of use to JM:

This query lists the total number of publications for each publisher. This is useful to know when negotiating contracts.

Screenshot of results:



```
MariaDB [UP877962db]> select public_publish_ID, count(public_Category)
-> from Publication
-> group by public_publish_ID;
+-----+-----+
| public_publish_ID | count(public_Category) |
+-----+-----+
| 1                 | 5                     |
| 2                 | 1                     |
| 3                 | 4                     |
| 4                 | 4                     |
| 5                 | 3                     |
| 6                 | 3                     |
| 7                 | 3                     |
| 8                 | 4                     |
| 9                 | 3                     |
+-----+-----+
9 rows in set (0.00 sec)

MariaDB [UP877962db]>
```



### Query 3

Query Description and why it's of use to JM:

This query displays the total number of a publication that is currently on order. This is useful for stock management etc.

Screenshot of results:

```
MariaDB [UP877962db]> select sum(pubInOrd_Qty) as TotalOrders
-> from PublicationInOrder
-> where pubOrd_public_ID = 12;
+-----+
| TotalOrders |
+-----+
|         400 |
+-----+
1 row in set (0.00 sec)

MariaDB [UP877962db]>
```

### Query 4

Query Description and why it's of use to JM:

This query displays the minimum and maximum vehicle capacities in the fleet. This is useful for logistical reasons.

Screenshot of results:

```
MariaDB [UP877962db]> select min(veh_Capacity) as SmallestCapacity,
-> max(veh_Capacity) as LargestCapacity
-> from Vehicle;
+-----+-----+
| SmallestCapacity | LargestCapacity |
+-----+-----+
|          2845   |          4516   |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [UP877962db]>
```

### Query 5

Query Description and why it's of use to JM:

This query lets you look at the amount of restock orders that are placed on a given date. This could be useful for order management and auditing purposes.

Screenshot of results:

```
MariaDB [UP877962db]> select count(pubRestock_DateTime) as DailyRestockOrders
-> from PublicationInRestockOrder
-> where pubRestock_DateTime >= '2018-03-30'
-> and pubRestock_DateTime < '2018-03-31';
+-----+
| DailyRestockOrders |
+-----+
|         4          |
+-----+
1 row in set (0.00 sec)

MariaDB [UP877962db]>
```