

Database Systems SET08120-

Coursework 1

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Query 5

```
SELECT * FROM
(SELECT town, COUNT(*) AS items FROM customer
JOIN manifest ON (customer.reference = manifest.pickup_customer_ref) OR
(customer.reference = manifest.delivery_customer_ref)
GROUP BY town)
AS highestNumberOfItems
ORDER BY (highestNumberOfItems.items) DESC
LIMIT 1;
```

```
+-----+-----+
| town   | items |
+-----+-----+
| Gateshead | 328 |
+-----+-----+
1 row in set (0.391 sec)

MariaDB [40401270]>
```

Query 7

```
SELECT reference , company_name , COUNT(DISTINCT trip.trip_id) AS 'Pickup'
FROM manifest
JOIN trip ON manifest.trip_id = trip.trip_id
JOIN customer ON manifest.pickup_customer_ref = customer.reference
WHERE departure_date >= '2012:06:01 00:00:00' AND departure_date <
'2012:07:01 00:00:00'
GROUP BY reference , company_name
ORDER BY Pickup DESC
LIMIT 4;
```

```
+-----+-----+-----+-----+
| reference | company_name | Pickup |
+-----+-----+-----+-----+
| 264 | Byssiferous Industrial | 9 |
| 3 | Trochiline Services | 9 |
| 99 | Temerarious & Co | 9 |
| 283 | Contemper Retail | 9 |
+-----+-----+-----+-----+
4 rows in set (0.051 sec)

MariaDB [40401270]>
```

Query 8

```
SELECT driver.first_name, driver.last_name
FROM driver
WHERE driver.employee_no Not IN (SELECT
    trip.employee_no
FROM manifest
    INNER JOIN trip
        ON manifest.trip_id = trip.trip_id
WHERE manifest.category = 'B'
GROUP BY trip.employee_no, manifest.category);
```

```
+-----+-----+
| first_name | last_name |
+-----+-----+
| Barry      | Thayre    |
| Henry      | Cobelli   |
| Rudyard    | Basillon  |
| Gareth     | Cruickshank |
| Ernst      | A'field   |
| Frederick  | Sambidge  |
| Sunreet    | Balderstone |
| Angelo     | Brydon    |
| Crispin    | Cleobury  |
| Solomon    | Gorhardt  |
| Eamon      | Darko     |
| Anson      | Donnan    |
| Reginald   | Barlas    |
| Edgar      | Strank    |
| Nadir      | Millbank  |
| Durant     | Dankersley |
| Albert     | Phillimore |
+-----+-----+
17 rows in set (0.001 sec)

MariaDB [40401270]>
```

Query 11

```
SELECT trip_id,
    CASE WHEN SUM(CASE WHEN category = 'C' THEN 1 ELSE 0 END) >= 1
        THEN CONCAT(ROUND(SUM(CASE WHEN category = 'A' THEN 1 ELSE 0 END) /
COUNT(barcode) * 100, 0), '%') END AS A,
    CASE WHEN SUM(CASE WHEN category = 'C' THEN 1 ELSE 0 END) >= 1
        THEN CONCAT(ROUND(SUM(CASE WHEN category = 'B' THEN 1 ELSE 0 END) /
COUNT(barcode) * 100, 0), '%') END AS B,
    CASE WHEN SUM(CASE WHEN category = 'C' THEN 1 ELSE 0 END) >= 1
        THEN CONCAT(ROUND(SUM(CASE WHEN category = 'C' THEN 1 ELSE 0 END) /
COUNT(barcode) * 100, 0), '%') END AS C
FROM manifest
GROUP BY (trip_id)
HAVING C >= (1)

ORDER BY ROUND(SUM(CASE WHEN category = 'C' THEN 1 ELSE 0 END) /
COUNT(barcode) * 100, 0) DESC;
```

trip_id	A	B	C
73832	44%	0%	56%
73404	60%	0%	40%
73773	63%	0%	38%
73551	64%	0%	36%
73013	67%	0%	33%
73286	67%	0%	33%
73382	67%	0%	33%
73842	69%	0%	31%
73353	69%	0%	31%
73745	70%	0%	30%
73062	70%	0%	30%
73171	71%	0%	29%
73611	57%	14%	29%
74113	73%	0%	27%
73779	74%	0%	26%
73024	75%	0%	25%
72947	77%	0%	23%
74083	77%	0%	23%
73100	81%	0%	19%
73431	83%	0%	17%
73860	83%	0%	17%
74087	84%	0%	16%
73022	85%	0%	15%
73123	86%	0%	14%
73960	88%	0%	13%
73289	88%	0%	13%
73088	88%	0%	12%
73032	88%	0%	12%
73757	88%	0%	12%
73615	89%	0%	11%
74101	91%	0%	9%
73001	91%	0%	9%
72944	67%	27%	7%
73340	93%	0%	7%
73451	93%	0%	7%
73717	93%	0%	7%
73765	94%	0%	6%
73160	94%	0%	6%
73504	78%	17%	6%
74024	94%	0%	6%
74013	94%	0%	6%
73959	95%	0%	5%
73957	95%	0%	5%
73194	95%	0%	5%
73256	95%	0%	5%
73436	96%	0%	4%
74059	96%	0%	4%

```

| 73049 | 96% | 0% | 4% |
+-----+-----+-----+-----+
48 rows in set, 48 warnings (0.050 sec)

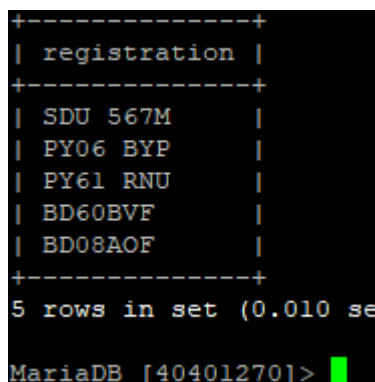
MariaDB [40401270]> 

```

Query 12

```
SELECT DISTINCT (vehicle.registration)
FROM vehicle INNER JOIN trip ON (vehicle.vehicle_id = trip.vehicle_id) IS
TRUE
WHERE vehicle.vehicle_id NOT IN (SELECT DISTINCT vehicle.vehicle_id
FROM trip INNER JOIN vehicle ON (trip.vehicle_id = vehicle.vehicle_id)
WHERE trip.departure_date <= ('2012-04-06 00:00:00') AND
trip.departure_date >= ('2012-03-31 00:00:00')

OR trip.return_date > ('2012-03-31 00:00:00') AND trip.departure_date <
('2012-04-01 00:00:00'));
```



```
+-----+
| registration |
+-----+
| SDU 567M    |
| PY06 BYP    |
| PY61 RNU    |
| BD60BVF     |
| BD08AOF     |
+-----+
5 rows in set (0.010 sec)

MariaDB [40401270]>
```

Section 2

Add new tables:

```
CREATE TABLE cma
(
    cma_id INT(11) NOT NULL,
    PRIMARY KEY (cma_id),
    customer_reference INT(11) NOT NULL,
    FOREIGN KEY (customer_reference) REFERENCES customer(reference),
    name VARCHAR(20) NOT NULL,
    surname VARCHAR(20) NOT NULL,
    email VARCHAR(100) NOT NULL,
    end_employment DATE DEFAULT NULL
);
```

```

+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| cma_id         | int(11)       | NO   | PRI | NULL    |       |
| customer_reference | int(11)       | NO   | MUL | NULL    |       |
| name           | varchar(20)   | NO   |     | NULL    |       |
| surname        | varchar(20)   | NO   |     | NULL    |       |
| email          | varchar(100)  | NO   |     | NULL    |       |
| end_employment | date          | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.001 sec)

MariaDB [40401270]> 

```

2) Insert data for at least 3 CMA

```

INSERT INTO cma (`cma_id` , `customer_reference` , `name` , `surname` ,
`email`)
VALUES (1, 11, 'Davide', 'Pollicino', 'davidepollicino2015@gmail.com');

INSERT INTO cma (`cma_id`, `customer_reference` , `name` , `surname` ,
`email`)
VALUES (2, 22, 'Liam', 'Brandown', 'liam55@gmail.com');

INSERT INTO cma (`cma_id` , `customer_reference` , `name` , `surname` ,
`email`)
VALUES (3, 33, 'Giuseppe', 'Pollicino', 'giuseppe.pollicino@gmail.com');

```

```

+-----+-----+-----+-----+-----+-----+
| cma_id | customer_reference | name   | surname | email                                     | end_employment |
+-----+-----+-----+-----+-----+-----+
| 1      | 11                | Davide | Pollicino | davidepollicino2015@gmail.com          | NULL           |
| 2      | 22                | Liam  | Brandown  | liam55@gmail.com                       | NULL           |
| 3      | 33                | Giuseppe | Pollicino | giuseppe.pollicino@gmail.com           | NULL           |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

3) Create table enquiry

```

CREATE TABLE enquiry
(
    id INT(11) PRIMARY KEY,
    title VARCHAR(100) NOT NULL,
    date_enquiry DATETIME NOT NULL,
    date_response DATETIME DEFAULT NULL,
    message VARCHAR (255) NOT NULL,
    response VARCHAR (255),

```

```

customer_id INT(11) NOT NULL,
FOREIGN KEY (customer_id) REFERENCES customer(reference),
cma_id INT(11) NOT NULL,
FOREIGN KEY (cma_id) REFERENCES cma(cma_id)
);

```

```

mysql> DESC enquiry;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id         | int(11)       | NO   | PRI | NULL    |       |
| title      | varchar(100)  | NO   |     | NULL    |       |
| date_enquiry | datetime      | NO   |     | NULL    |       |
| date_response | datetime      | YES  |     | NULL    |       |
| message    | varchar(255)  | NO   |     | NULL    |       |
| response   | varchar(255)  | YES  |     | NULL    |       |
| customer_id | int(11)       | NO   | MUL | NULL    |       |
| cma_id     | int(11)       | NO   | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

```

4) Populate enquiry table adding new records

```

INSERT INTO enquiry ( id , title , date_enquiry , date_response , message ,
response , customer_id , cma_id)
VALUES (1 , 'title 1' , '2012:04:02 12:01:5' , '2012:04:04 00:12:5' ,
'message 1' , 'message2' , 1 , 1);

```

```

INSERT INTO enquiry ( id , title , date_enquiry , date_response , message ,
response , customer_id , cma_id)
VALUES (2 , 'title 2' , '2012:04:02 00:11:09' , '2012:04:07 01:45:59' ,
'message 2' , 'response2' , 1 , 1);

```

```

INSERT INTO enquiry ( id , title , date_enquiry , date_response , message ,
response , customer_id , cma_id)
VALUES (3 , 'title 3' , '2012:04:02 00:12:23' , '2012:04:04 12:11:32' ,
'message 3' , 'response3' , 2 , 2);

```

```

INSERT INTO enquiry ( id , title , date_enquiry , date_response , message ,
response , customer_id , cma_id)
VALUES (4 , 'title 4' , '2012:05:06 00:00:40' , '2012:04:04 12:12:5' ,
'message 4' , 'response4' , 2 , 2);

```

```

---Get all the info the CMA of the customer 1
SELECT cma.cma_id, cma.name, cma.surname, cma.email, cma.end_employment,
customer.reference AS customer_id, customer.company_name
FROM cma
JOIN customer ON cma.cma_id = customer.reference
WHERE customer.reference = 1;

```

```

+-----+-----+-----+-----+-----+-----+-----+
| cma_id | name   | surname | email                                     | end_employment | customer_id | company_name |
+-----+-----+-----+-----+-----+-----+-----+
|      1 | Davide | Pollicino | davidepollicino2015@gmail.com | NULL           |          1 | Calash Ltd.  |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.001 sec)

```

---Get the current CAM of any customer (still working with the customer)

```

SELECT cma.cma_id, cma.name AS cma_name, cma.surname AS cma_surname,
cma.email, customer.reference AS customer_id, customer.company_name
FROM cma
JOIN customer ON cma.customer_reference = customer.reference;

```

```

+-----+-----+-----+-----+-----+-----+-----+
| cma_id | cma_name | cma_surname | email                                     | customer_id | company_name |
+-----+-----+-----+-----+-----+-----+-----+
|      1 | Davide   | Pollicino   | davidepollicino2015@gmail.com |      11    | Lollop Group |
|      2 | Liam     | Brandown    | liam55@gmail.com              |      22    | Tubicornous Fabrication |
|      3 | Giuseppe | Pollicino   | giuseppe.pollicino@gmail.com  |      33    | Formic Fabrication |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.001 sec)
MariaDB [40401270]>

```

---Get all the enquiry between the cma and its customer/s

```

ALTER TABLE trip
ADD COLUMN cma_id INT (11),
ADD FOREIGN KEY cma_id(cma_id) REFERENCES cma(cma_id);

```

```

+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| trip_id        | int(11)       | NO   | PRI | NULL    | auto_increment |
| departure_date | datetime      | YES  |     | NULL    |                |
| return_date    | datetime      | YES  |     | NULL    |                |
| vehicle_id     | int(11)       | YES  | MUL | NULL    |                |
| employee_no    | varchar(7)    | YES  | MUL | NULL    |                |
| cma_id         | int(11)       | YES  | MUL | NULL    |                |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.002 sec)

```

```

ALTER TABLE customer
ADD COLUMN cmaId INT (11),
ADD FOREIGN KEY cmaId(cmaId) REFERENCES cma(cma_id);

```

--- Get all the queries and info made by customer with ID = 1

```

SELECT title , date_enquiry , message , response , enquiry.cma_id ,
customer_id ,customer.company_name AS Customer_name , customer.address AS
Address , customer.town AS Town , telephone
FROM enquiry
JOIN customer ON enquiry.customer_id = customer.reference
WHERE customer_id = 1;

```

```

+-----+-----+-----+-----+-----+-----+-----+-----+
| title | date_enquiry | message | response | cma_id | customer_id | Customer_name | Address | Town | telephone |
+-----+-----+-----+-----+-----+-----+-----+-----+
| title 1 | 2012-04-02 12:01:05 | message 1 | message2 |      1 |          1 | Calash Ltd. | 88 Rinkomanta Lane | Cardigan | 01167 1595763 |
| title 2 | 2012-04-02 00:11:09 | message 2 | response 2 |      1 |          1 | Calash Ltd. | 88 Rinkomanta Lane | Cardigan | 01167 1595763 |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

```

--- Tables of the database

```
MariaDB [40401270]> show tables;
+-----+
| Tables_in_40401270 |
+-----+
| category            |
| cma                  |
| customer             |
| driver              |
| enquiry              |
| manifest             |
| model               |
| trip                 |
| vehicle              |
+-----+
9 rows in set (0.002 sec)
```

--- FK of the cma_id added in the trip table

```
ALTER TABLE trip
ADD COLUMN cma_id INT(11) NOT NULL,
ADD FOREIGN KEY cma_id (cma_id) REFERENCES cma(cma_id);
```

--Automatically , the DBMS set the new foreign Key as NULL. For test purpose , I have assigned to all the trip.cma_id , the value: 3;

```
SELECT DISTINCT (cmaId) from customer;
```

```
+-----+
| cmaId |
+-----+
|      3 |
+-----+
1 row in set (0.001 sec)

MariaDB [40401270]> █
```

--- I have added the FK of the cma_id in the trip table;

```
MariaDB [40401270]> desc trip;
+-----+-----+-----+-----+-----+-----+
| Field          | Type       | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| trip_id        | int(11)    | NO   | PRI | NULL    | auto_increment |
| departure_date | datetime   | YES  |     | NULL    |                |
| return_date    | datetime   | YES  |     | NULL    |                |
| vehicle_id     | int(11)    | YES  | MUL | NULL    |                |
| employee_no    | varchar(7) | YES  | MUL | NULL    |                |
| cma_id         | int(11)    | YES  | MUL | NULL    |                |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.002 sec)
```



```
--- Get CMA id, name and surname email for any trip. (Actually the only
value of the cma_id in the trip table is 3).
```

```
SELECT trip.trip_id , departure_date , return_date , cma.cma_id , cma.customer_reference ,
cma.name , cma.surname , cma.email
```

```
FROM trip
```

```
JOIN cma ON trip.cma_id = cma.cma_id
```

```
LIMIT 7;
```

trip_id	departure_date	return_date	cma_id	customer_reference	name	surname	email
72941	2012-01-02 00:00:00	2012-01-04 00:00:00	3	33	Giuseppe	Pollicino	giuseppe.pollicino@gmail.com
72942	2012-01-02 00:00:00	2012-01-06 00:00:00	3	33	Giuseppe	Pollicino	giuseppe.pollicino@gmail.com
72943	2012-01-02 00:00:00	2012-01-06 00:00:00	3	33	Giuseppe	Pollicino	giuseppe.pollicino@gmail.com
72944	2012-01-02 00:00:00	2012-01-06 00:00:00	3	33	Giuseppe	Pollicino	giuseppe.pollicino@gmail.com
72945	2012-01-02 00:00:00	2012-01-04 00:00:00	3	33	Giuseppe	Pollicino	giuseppe.pollicino@gmail.com
72946	2012-01-02 00:00:00	2012-01-03 00:00:00	3	33	Giuseppe	Pollicino	giuseppe.pollicino@gmail.com
72947	2012-01-02 00:00:00	2012-01-04 00:00:00	3	33	Giuseppe	Pollicino	giuseppe.pollicino@gmail.com

7 rows in set (0.000 sec)

