MySQL

Stored Procedures

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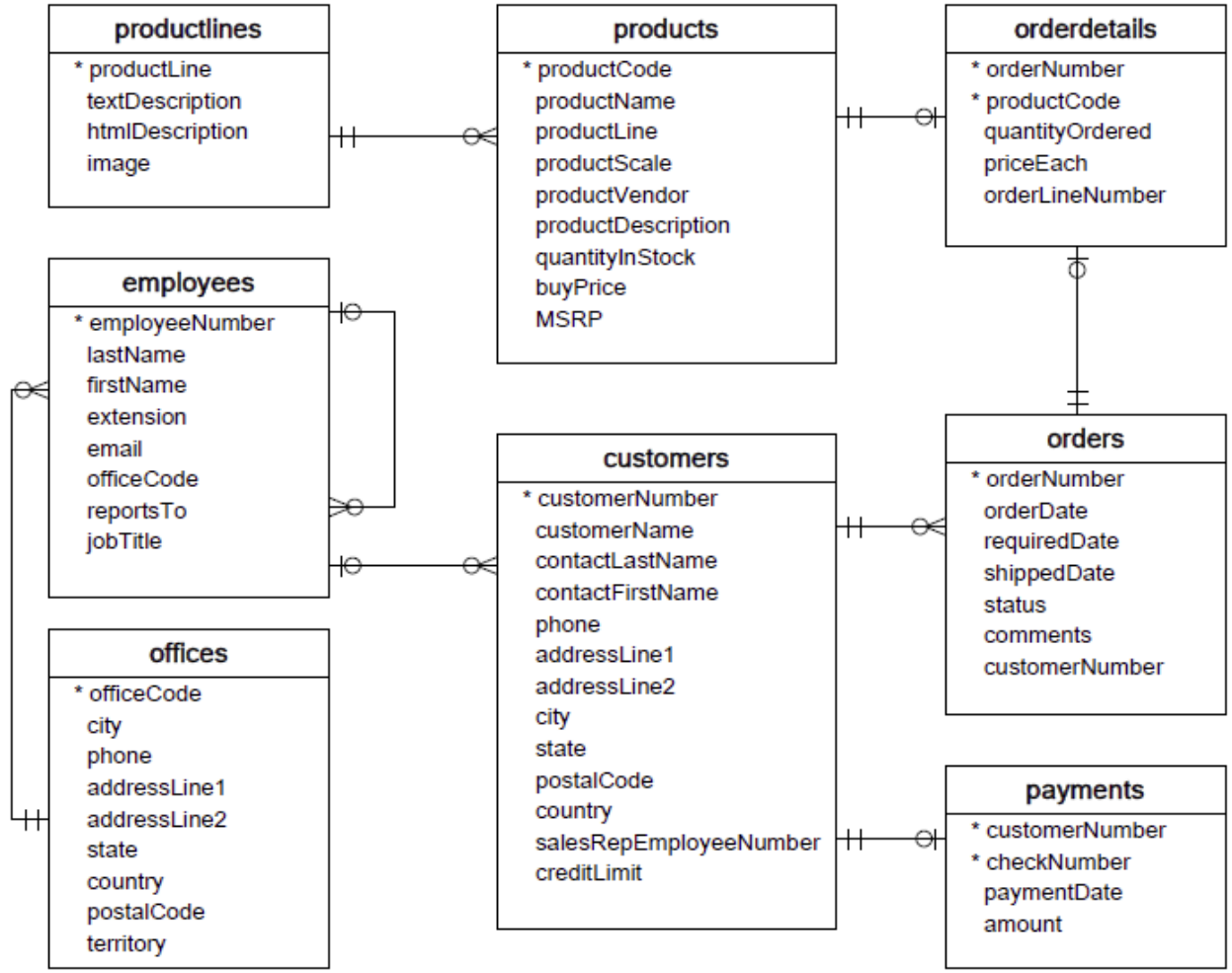
Lecturer in Computer Science

COMP23111
Fundamentals of Databases

Intro

Sample Data

- SQL to create schema, look for the sample data file on Blackboard
- This also contains sample data
- Familiarise yourself with the schema, it will help with your coursework




```
mysql> source path\file.sql
```

What you should already know

- SELECT *fields(s)_you_want* FROM *table_name* ORDER BY *field* ASC *;*

```
mysql> SELECT
    ->   contactLastname,
    ->   contactFirstname
    -> FROM
    ->   customers
    -> ORDER BY
    ->   contactLastname ASC;
    ->   contactFirstname ASC;
```

```
+-----------------+------------------+
| contactLastname | contactFirstname |
+-----------------+------------------+
| Accorti         | Paolo            |
| Altagar,G M     | Raanan           |
| Andersen        | Mel              |
| Anton           | Carmen           |
| Ashworth        | Rachel           |
| Barajas         | Miguel           |
| Benitez         | Violeta          |
| Bennett         | Helen            |
| Berglund        | Christina        |
| Bergulfsen      | Jonas            |
| Bertrand        | Marie            |
| Brown           | Julie            |
| Brown           | Ann              |
| Brown           | William          |
```

SELECT FROM

```
SELECT
   customerNumber,
   amount
FROM payments;
```

```
+----------------+-----------+
| customerNumber | amount    |
+----------------+-----------+
|            103 |   6066.78 |
|            103 |  14571.44 |
|            103 |   1676.14 |
|            112 |  14191.12 |
|            112 |  32641.98 |
|            112 |  33347.88 |
|            114 |  45864.03 |
|            114 |  82261.22 |
|            114 |   7565.08 |
|            114 |  44894.74 |
```

GROUP BY

```
SELECT
   customerNumber,
   SUM(amount)
FROM payments
GROUP BY customerNumber;
```

customerNumber	amount
103	6066.78
103	14571.44
103	1676.14
112	14191.12
112	32641.98
112	33347.88
114	45864.03
114	82261.22
114	7565.08
114	44894.74

customerNumber	SUM(amount)
103	22314.36
112	80180.98
114	180585.07

ORDER BY

```
SELECT
   customerNumber,
   SUM(amount)
FROM payments
GROUP BY customerNumber
ORDER BY
   SUM(amount) DESC;
```

```
+----------------+-----------+
| customerNumber | amount    |
+----------------+-----------+
|            103 |   6066.78 |
|            103 |  14571.44 |
|            103 |   1676.14 |
|            112 |  14191.12 |
|            112 |  32641.98 |
|            112 |  33347.88 |
|            114 |  45864.03 |
|            114 |  82261.22 |
|            114 |   7565.08 |
|            114 |  44894.74 |
```

```
+----------------+-------------+
| customerNumber | SUM(amount) |
+----------------+-------------+
|            103 |    22314.36 |
|            112 |    80180.98 |
|            114 |   180585.07 |
```

```
+----------------+-------------+
| customerNumber | SUM(amount) |
+----------------+-------------+
|            141 |   715738.98 |
|            124 |   584188.24 |
|            114 |   180585.07 |
```

Complex SQL Queries

- SQL Queries can soon become fairly complex
- Especially when you are accessing data from multiple tables
- Often it is useful to create procedures for multiple commonly required SQL statements

Stored Procedures

- A stored procedure is a segment of declarative SQL statements stored inside the MySQL Server.
- Once you create and save the stored procedure, you can invoke it by using the CALL statement.
- Stored in the Database, copied to cache when first called.
- Remains in cache for the duration of that session (saves time having to recompile)

Parameters and Flow Control

- Allows passing of arguments
- Supports flow control
- A stored procedure can call another procedure

Advantages of Stored Procedures

- Minimises bandwidth
- Consistency
- Security

Disadvantages

- Requires additional resources
- It’s difficult to debug stored procedures.
- Requires a specialised skill set

End of Introduction to Stored Procedures

- After receiving feedback that my videos are too long, I've tried to make an effort to split them into more digestible chunks of learning.
- Want to know more about Stored Procedures? Of course you do… click to the next video when you are ready and we will look at how we can create and implement a stored procedure.