

MySQL

Stored Procedures

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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

productlines orderdetails products * productCode * productLine * orderNumber textDescription productName * productCode htmlDescription productLine quantityOrdered image productScale priceEach productVendor orderLineNumber productDescription quantityInStock employees buyPrice * employeeNumber MSRP lastName firstName extension orders email customers officeCode * orderNumber * customerNumber reportsTo orderDate customerName jobTitle requiredDate contactLastName shippedDate contactFirstName status phone comments offices addressLine1 customerNumber addressLine2 * officeCode city city state phone postalCode addressLine1 payments country addressl ine2 * customerNumber salesRepEmployeeNumber H state * checkNumber creditl imit country paymentDate postalCode amount territory

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 | contactFirstnam
Accorti
                  Paolo
Altagar, G M
                l Raanan
Andersen
                | Mel
Anton
                | Carmen
Ashworth
                | Rachel
Barajas
                | Miquel
Benitez
                | Violeta
Bennett
                l Helen
Berglund
                | Christina
Bergulfsen
                | Jonas
Bertrand
                 | Marie
Brown
                 I Julie
                  Ann
Brown
                  William
Brown
```

SELECT FROM

```
SELECT

customerNumber,

amount

FROM payments;
```

+	-+-		-+
customerNumber	1	amount	1
+	-+-		-+
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	1	7565.08	1
114		44894.74	-

GROUP BY

```
SELECT

customerNumber,

SUM(amount)

FROM payments

GROUP BY customerNumber;
```

+	+-		+
customerNumber	1	amount	1
+	+-		+
103	1	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	1	44894.74	

+.		++
	customerNumber	SUM(amount)
+.		++
l	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	r SUM(amount)
+	++
103	3 22314.36
112	2 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.