

Unit 3 PS1: SQL

Gavin Grooms

CS120 Summer 2023

The screenshot shows the MySQL Workbench interface. On the left, the 'SCHEMAS' pane shows the 'cs120' database selected, with a list of tables including 'categories', 'customers', 'employees', 'orderdetails', 'orders', 'products', 'shippers', and 'suppliers'. The 'Query 1' editor in the center contains the following SQL query:

```
-- Gavin Grooms CS120 Summer 2023
SELECT CompanyName, ContactName, ContactTitle FROM customers;
```

The 'Result Grid' at the bottom displays the query results in a table with 3 columns: 'CompanyName', 'ContactName', and 'ContactTitle'. The table contains 91 rows of data. The 'Output' pane at the bottom shows the execution details:

#	Time	Action	Message	Duration / Fetch
1	14:58:46	SELECT CompanyName, ContactName, ContactTitle...	91 row(s) returned	0.031 sec / 0.000 sec

1.1

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

cs120

Tables

- categories
- customers
- employees
- orderdetails
- orders
- products
- shippers
- suppliers

Views

Stored Procedures

Functions

sakila

sys

world

Administration Schemas

Information

Schema: cs120

Object Info Session

Query 1

Limit to 1000 rows

```

1 -- Gavin Grooms CS120 Summer 2023
2 SELECT CompanyName, ContactName, ContactTitle FROM customers;
3
4 SELECT * FROM suppliers WHERE Country="Germany";

```

Result Grid

SupplierID	CompanyName	ContactName	ContactTitle	Address	City	Region	PostalCode	Country	Phone
11	Hele Süßwaren GmbH & Co. KG	Petra Winkler	Sales Manager	Tiergartenstraße 5	Berlin	NULL	10785	Germany	(010) 99845
12	Plutzer Lebensmittelgroßmärkte AG	Martin Bein	International Marketing Mgr.	Bogenallee 51	Frankfurt	NULL	60439	Germany	(069) 99275
13	Nord-Ost-Fisch Handelsgesellschaft mbH	Sven Petersen	Coordinator Foreign Markets	Frahnredder 112a	Cuxhaven	NULL	27478	Germany	(04721) 871

suppliers 2

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	14:58:46	SELECT CompanyName, ContactName, ContactTitle FROM customers LIMIT 0, ...	91 row(s) returned	0.031 sec / 0.000 sec
2	15:02:00	SELECT * FROM suppliers WHERE Country="Germany" LIMIT 0, 1000	3 row(s) returned	0.016 sec / 0.000 sec

1.2

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

Filter objects

cs120

Tables

- categories
- customers
- employees
- order details
- orders
- products

Columns

- ProductID
- ProductName
- SupplierID
- CategoryID
- QuantityPerUnit
- UnitPrice
- UnitsInStock
- UnitsOnOrder
- ReorderLevel
- Discontinued

Indexes

- Foreign Keys
- Triggers
- shippers
- suppliers

Views

- Stored Procedures
- Functions

sakila

sys

world

Administration Schemas

Information

Table: products

Columns:

- ProductID int AI Pk
- ProductName varchar(255)
- SupplierID int
- CategoryID int
- QuantityPerUnit varchar(45)
- UnitPrice decimal(10,2)
- UnitsInStock int
- UnitsOnOrder int
- ReorderLevel int
- Discontinued tinyint(1)

Query 1

```
-- Gavin Grooms CS120 Summer 2023
1
2 SELECT CompanyName, ContactName, ContactTitle FROM customers;
3 SELECT * FROM suppliers WHERE Country="Germany";
4
5 SELECT ProductName, UnitPrice FROM products WHERE UnitPrice>=10 AND UnitPrice<=20 ORDER BY UnitPrice ASC;
```

Result Grid

ProductName	UnitPrice
Aniseed Syrup	10.0000
Sir Rodney's Scones	10.0000
Longlife Tofu	10.0000
Spegesild	12.0000
Gorgonzola Telino	12.5000
Scottish Longbreads	12.5000
Chocolade	12.7500
Original Frankfurter grüne Soße	13.0000
Escargots de Bourgogne	13.2500
NuNuCa Nuß-Nougat-Creme	14.0000
Sasquatch Ale	14.0000
Singaporean Hokkien Fried Mee	14.0000
Laughing Lumberjack Lager	14.0000
Outback Lager	15.0000
Rod Kaviar	15.0000
Genen Shouyu	15.5000
Valkoinen suklaa	16.2500
Louisiana Hot Spiced Okra	17.0000
Pavlova	17.4500
Chai	18.0000
Steeleye Stout	18.0000
Chartreuse verte	18.0000
Lakkalikööri	18.0000
Boston Crab Meat	18.4000
Chang	19.0000
Inlagd Sill	19.0000
Gula Malacca	19.4500
Ravioli Angelo	19.5000
Mavilakki	20.0000

products 3

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	14:58:46	SELECT CompanyName, ContactName, ContactTitle FROM custo...	91 row(s) returned	0.031 sec / 0.000 sec
2	15:02:00	SELECT * FROM suppliers WHERE Country="Germany" LIMIT 0, ...	3 row(s) returned	0.016 sec / 0.000 sec
3	15:06:52	SELECT ProductName, UnitPrice FROM products WHERE UnitPri...	29 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

1.3

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

Filter objects

cs120

Tables

categories

customer

employee

orderdetz

orders

products

Columns

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Pr

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Ca

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Index

Foreign

Trigge

shippers

suppliers

Views

Stored Proce

Functions

sakila

sys

world

Administration

Information

Table: products

Columns:

ProductID

ProductName

SupplierID

CategoryID

QuantityPerUnit

UnitPrice

UnitsInStock

UnitsOnOrder

ReorderLevel

Discontinued

Query 1

Limit to 1000 rows

```

1 -- Gavin Grooms CS120 Summer 2023
2 • SELECT CompanyName, ContactName, ContactTitle FROM customers;
3 • SELECT * FROM suppliers WHERE Country="Germany";
4 • SELECT ProductName, UnitPrice FROM products WHERE UnitPrice>=10 AND UnitPrice<=20 ORDER BY UnitPrice ASC;
5
6 • SELECT ProductName, UnitPrice FROM products WHERE SupplierID>=9 AND SupplierID<=15 ORDER BY SupplierID, UnitPrice ASC;

```

Result Grid

ProductName	UnitPrice
Tunnbröd	9.0000
Gustafs Knäckebröd	21.0000
Guaraná Fantástica	4.5000
NuNuCa Nuß-Nougat-Creme	14.0000
Gumbär Gummibärchen	31.2300
Schoggi Schokolade	43.9000
Rhönbräu Klosterbier	7.7500
Original Frankfurter grüne Soße	13.0000
Wimmers gute Semmelknödel	33.2500
Rössle Sauerkraut	45.6000
Thüringer Rostbratwurst	123.7900
Nord-Ost Matjeshering	25.8900
Gorgonzola Telino	12.5000
Mascarpone Fabioli	32.0000
Mozzarella di Giovanni	34.8000
Gelbst	2.5000
Flötensyost	21.5000
Gudbrandsdalsost	36.0000

products 5 x

Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
2	15:02:00	SELECT * FROM suppliers WHERE Country="Germany" LIMIT 0, 1000	3 row(s) returned	0.016 sec / 0.000 sec
3	15:06:52	SELECT ProductName, UnitPrice FROM products WHERE UnitPrice>=10 AND UnitPrice<=20 ORDER BY UnitPrice ASC	29 row(s) returned	0.000 sec / 0.000 sec
4	15:09:23	SELECT * FROM products LIMIT 0, 1000	77 row(s) returned	0.000 sec / 0.000 sec
5	15:10:33	SELECT ProductName, UnitPrice FROM products WHERE SupplierID>=9 AND SupplierID<=15 ORDER BY SupplierID, UnitPrice ASC	18 row(s) returned	0.000 sec / 0.000 sec

Object Info

Session

1.4

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

cs120

Tables

- categories
- customers
- employees

Columns

- EmployeeID
- LastName
- FirstName
- Title
- TitleOfCourt
- BirthDate
- HireDate
- Address
- City
- Region
- PostalCode
- Country
- HomePhone
- Extension
- Photo
- Notes
- ReportsTo

Indexes

Foreign Keys

Triggers

orderdetails

orders

products

shippers

Administration Schemas

Information

Table: employees

Columns:

EmployeeID	int AI P
LastName	varchar
FirstName	varchar
Title	varchar
TitleOfCourtesy	varchar
BirthDate	datetime
HireDate	datetime
Address	varchar
City	varchar
Region	varchar
PostalCode	varchar
Country	varchar
HomePhone	varchar
Extension	varchar

Object Info Session

Query 1

Limit to 1000 rows

```

1 -- Gavin Grooms CS120 Summer 2023
2 SELECT CompanyName, ContactName, ContactTitle FROM customers;
3 SELECT * FROM suppliers WHERE Country="Germany";
4 SELECT ProductName, UnitPrice FROM products WHERE UnitPrice>=10 AND UnitPrice<=20 ORDER BY UnitPrice ASC;
5 SELECT ProductName, UnitPrice FROM products WHERE SupplierID>=9 AND SupplierID<=15 ORDER BY SupplierID, UnitPrice ASC;
6
7 SELECT FirstName, LastName FROM employees WHERE Title LIKE "Sales%" ORDER BY LastName ASC;

```

Result Grid

FirstName	LastName
Steven	Buchanan
Nancy	Davolio
Anne	Dodsworth
Robert	King
Janet	Leverling
Margaret	Peacock
Michael	Suyama

Form Editor

Field Types

Query Stats

Execution Plan

employees 13 x

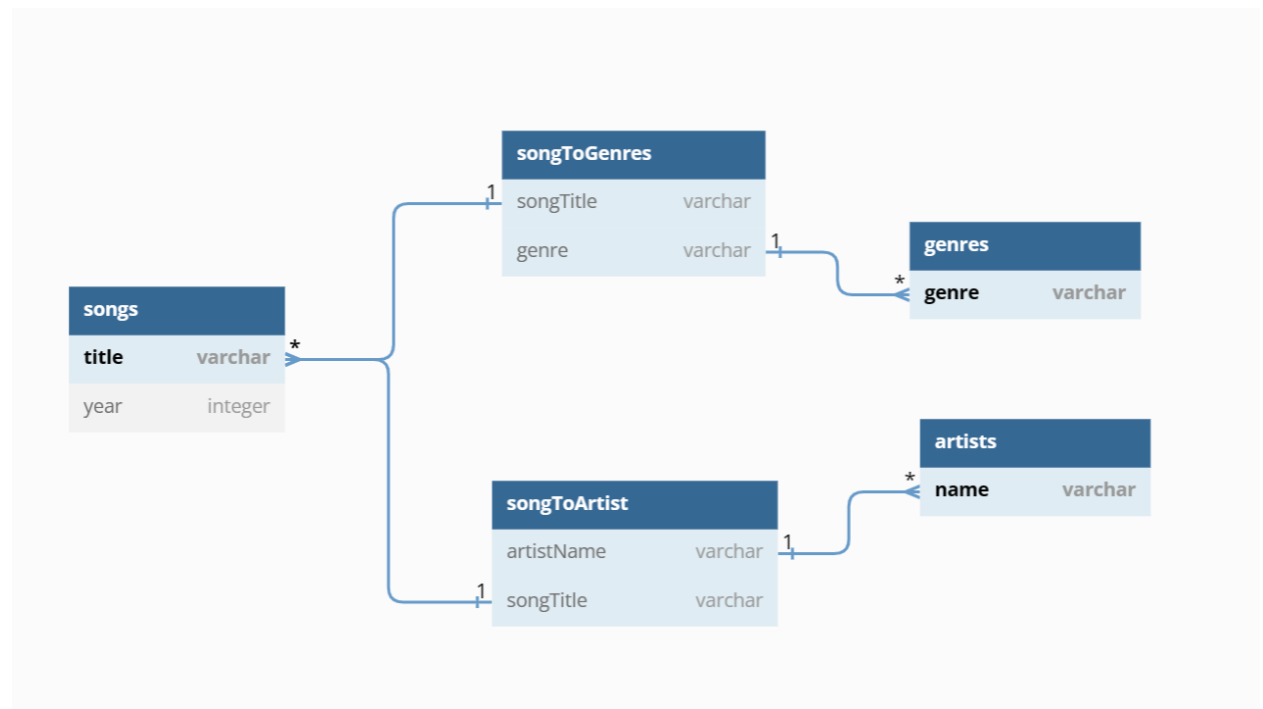
Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 10	15:15:28	SELECT FirstName, LastName FROM employees WHERE Title L...	7 row(s) returned	0.000 sec / 0.000 sec
✓ 11	15:15:42	SELECT FirstName, LastName, Title FROM employees WHERE ...	7 row(s) returned	0.000 sec / 0.000 sec
✓ 12	15:15:42	SELECT FirstName, LastName, Title FROM employees WHERE ...	7 row(s) returned	0.000 sec / 0.000 sec
✓ 13	15:15:54	SELECT FirstName, LastName FROM employees WHERE Title L...	7 row(s) returned	0.000 sec / 0.000 sec

1.5



2.1

2.2

```
CREATE TABLE `artists` (  
  `name` varchar(50) NOT NULL,  
  PRIMARY KEY (`name`)  
);
```

```
CREATE TABLE `genres` (  
  `genre` varchar(50) NOT NULL,  
  PRIMARY KEY (`genre`)  
);
```

```
CREATE TABLE `songs` (  
  `title` varchar(50) NOT NULL,  
  `year` varchar(10) NOT NULL,  
  PRIMARY KEY (`title`)  
);
```

```
CREATE TABLE `songtoartist` (  
  `songTitle` varchar(50) NOT NULL,  
  `artistName` varchar(50) NOT NULL,  
  CONSTRAINT `artist2` FOREIGN KEY (`artistName`) REFERENCES `artists` (`name`) ON DELETE CASCADE  
ON UPDATE CASCADE,  
  CONSTRAINT `songTitle2` FOREIGN KEY (`songTitle`) REFERENCES `songs` (`title`) ON DELETE CASCADE  
ON UPDATE CASCADE  
);
```

```
CREATE TABLE `songtogenres` (  
  `songTitle` varchar(50) NOT NULL,  
  `genre` varchar(50) NOT NULL,  
  CONSTRAINT `genre` FOREIGN KEY (`genre`) REFERENCES `genres` (`genre`) ON DELETE CASCADE ON  
UPDATE CASCADE,  
  CONSTRAINT `songTitle` FOREIGN KEY (`songTitle`) REFERENCES `songs` (`title`) ON DELETE CASCADE  
ON UPDATE CASCADE  
);
```

```
INSERT INTO songs VALUES  
  ("Perfect", "2017"),  
  ("Ends of the Earth", "2012"),  
  ("The Change", "2011"),  
  ("Galway Girl", 2017),  
  ("Massachusetts", "1967"),  
  ("Back In Black", "1980"),  
  ("Give Me the Future", "2022"),  
  ("Nobody's Home", "2004"),  
  ("Simple Song", "2012"),  
  ("Scream", "2015");
```

INSERT INTO artists VALUES

("Ed Sheeran"),
("Lord Huron"),
("Evanescence"),
("The Bee Gees"),
("AC/DC"),
("Bastille"),
("Avril Lavigne"),
("The Shins"),
("Halestorm");

INSERT INTO genres VALUES

("Hard Rock"),
("Alternative"),
("Pop"),
("Dance Pop"),
("Heavy Metal"),
("Rock");

INSERT INTO songtoartist VALUES

("Perfect", "Ed Sheeran"),
("Ends of the Earth", "Lord Huron"),
("The Change", "Evanescence"),
("Galway Girl", "Ed Sheeran"),
("Massachusetts", "The Bee Gees"),
("Back In Black", "AC/DC"),
("Give Me the Future", "Bastille"),
("Nobody's Home", "Avril Lavigne"),
("Simple Song", "The Shins"),
("Scream", "Halestorm");

INSERT INTO songtogenres VALUES

("Perfect", "Pop"),
("Ends of the Earth", "Rock"),
("The Change", "Rock"),
("Galway Girl", "Pop"),
("Massachusetts", "Pop"),
("Back In Black", "Hard Rock"),
("Back In Black", "Heavy Metal"),
("Give Me the Future", "Alternative"),
("Give Me the Future", "Dance Pop"),
("Nobody's Home", "Pop"),
("Simple Song", "Alternative"),
("Scream", "Hard Rock");

Run SQL query/queries on database db5s77gxbb5fld:

```
1 SELECT * FROM artists;
2 SELECT * FROM genres;
3 SELECT * FROM songs;
4 SELECT * FROM songtoartist;
5 SELECT * FROM songtogenres;
```

//

Clear

Format

Get auto-saved query

☐ Bind parameters

Delimiter

;

☐ Show this query here again ☐ Retain query box ☐ Rollback when finished ☒ Enable foreign key checks

Go

Hide query box

Showing rows 0 - 8 (9 total, Query took 0.0004 seconds.)

`SELECT * FROM artists`

name

AC/DC

Avril Lavigne

Bastille

Ed Sheeran

Evanescence

Halestorm

Lord Huron

The Bee Gees

The Shins

Showing rows 0 - 5 (6 total, Query took 0.0002 seconds.)

`SELECT * FROM genres`

genre

Alternative

Dance Pop

Hard Rock

Heavy Metal

Pop

Rock

Showing rows 0 - 9 (10 total, Query took 0.0003 seconds.)

`SELECT * FROM songs`

title

year

Back In Black

1980

Ends of the Earth

2012

Galway Girl

2017

Give Me the Future

2022

Massachusetts

1967

Nobody's Home

2004

Perfect

2017

Scream

2015

Simple Song

2012

The Change

2011

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 9 (10 total, Query took 0.0003 seconds.)

`SELECT * FROM songtoartist`

songTitle

artistName

Perfect

Ed Sheeran

Ends of the Earth

Lord Huron

The Change

Evanescence

Galway Girl

Ed Sheeran

Massachusetts

The Bee Gees

Back In Black

AC/DC

Give Me the Future

Bastille

Nobody's Home

Avril Lavigne

Simple Song

The Shins

Scream

Halestorm

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 11 (12 total, Query took 0.0003 seconds.)

SELECT * FROM songtogenres

songTitle	genre
Perfect	Pop
Ends of the Earth	Rock
The Change	Rock
Galway Girl	Pop
Massachusetts	Pop
Back In Black	Hard Rock
Back In Black	Heavy Metal
Give Me the Future	Alternative
Give Me the Future	Dance Pop
Nobody's Home	Pop
Simple Song	Alternative
Scream	Hard Rock

giow1077.siteground.us / localhost / db5577gxb55fd | phpMyAdmin 5.1.0

https://giow1077.siteground.us/phpmyadmin/index.php?route=/database/sql&db=db5577gxb55fd

Server: localhost Database: db5577gxb55fd ()

Structure SQL Search Query Export Import Operations Routines Events Triggers Designer

1 SELECT songs.title, artists.name FROM songs INNER JOIN songtoartist INNER JOIN artists WHERE songs.title=songtoartist.songTitle AND artists.name=songtoartist.artistName;

Clear Format Get auto-saved query

☐ Bind parameters

Delimiter: ☐ Show this query here again ☐ Retain query box ☐ Rollback when finished ☒ Enable foreign key checks Go

Hide query box

Showing rows 0 - 9 (10 total, Query took 0.0005 seconds.)

SELECT songs.title, artists.name FROM songs INNER JOIN songtoartist INNER JOIN artists WHERE songs.title=songtoartist.songTitle AND artists.name=songtoartist.artistName

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

title	name
Back In Black	AC/DC
Nobody's Home	Avril Lavigne
Give Me the Future	Bastille
Perfect	Ed Sheeran
Galway Girl	Ed Sheeran
The Change	Evanescence
Scream	Halestorm
Ends of the Earth	Lord Huron
Massachusetts	The Bee Gees
Simple Song	The Shins

☐ Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

Query results operations

Console

2.4.1

giow1077.siteground.us / localhost / db5577gxb55fd | phpMyAdmin 5.1.0

https://giow1077.siteground.us/phpmyadmin/index.php?route=/database/sql&db=db5577gxb55fd

Server: localhost Database: db5577gxb55fd ()

Structure SQL Search Query Export Import Operations Routines Events Triggers Designer

1 SELECT songs.title, genres.genre FROM songs INNER JOIN songtogenres ON songs.title=songtogenres.songTitle INNER JOIN genres ON songtogenres.genre=genres.genre;

Clear Format Get auto-saved query

☐ Bind parameters

Delimiter: ☐ Show this query here again ☐ Retain query box ☐ Rollback when finished ☒ Enable foreign key checks Go

Hide query box

Showing rows 0 - 11 (12 total, Query took 0.0009 seconds.)

SELECT songs.title, genres.genre FROM songs INNER JOIN songtogenres ON songs.title=songtogenres.songTitle INNER JOIN genres ON songtogenres.genre=genres.genre

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

title	genre
Give Me the Future	Alternative
Simple Song	Alternative
Give Me the Future	Dance Pop
Back In Black	Hard Rock
Scream	Hard Rock
Back In Black	Heavy Metal
Perfect	Pop
Galway Girl	Pop
Massachusetts	Pop
Nobody's Home	Pop
Ends of the Earth	Rock
The Change	Rock

☐ Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

Console

2.4.2