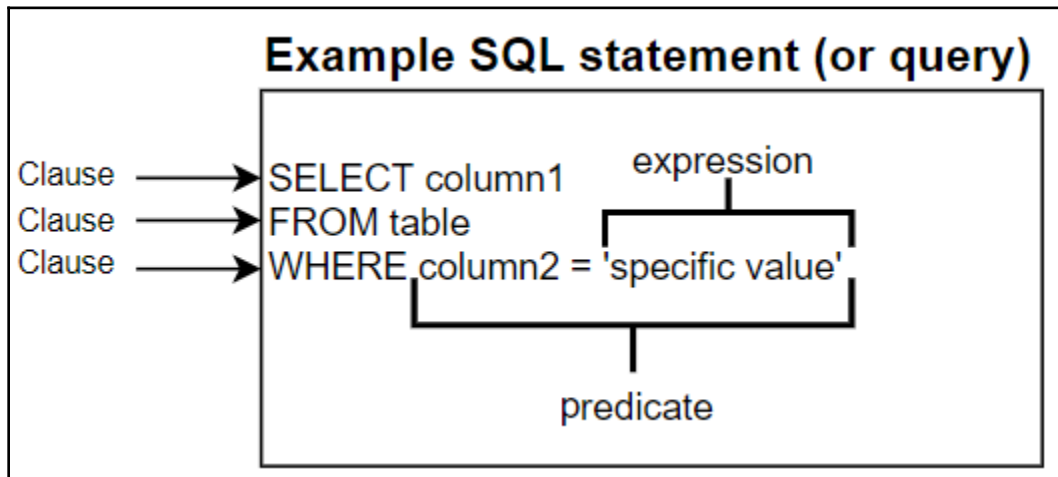


Chapter 1: Introduction to Relational Database Management Systems



playerID	yearID	gameNum	gameID	teamID	lgID	GP	startingPos
aaronha01	1955	0	NLS195507120	ML1	NL	1	NULL
aaronha01	1956	0	ALS195607100	ML1	NL	1	NULL
aaronha01	1957	0	NLS195707090	ML1	NL	1	9
aaronha01	1958	0	ALS195807080	ML1	NL	1	9
aaronha01	1959	1	NLS195907070	ML1	NL	1	9

playerID	yearID	teamID
aardsda01	2004	SFN

↑ ↑ ↑

aaronha01	1955	0	NLS195507120	ML1	NL	1	NULL
-----------	------	---	--------------	-----	----	---	------

gameID
NLS195507120
ALS195607100
NLS195707090
ALS195807080
NLS195907070

parkkey	parkname	city	state	country
ALB01	Riverside Park	Albany	NY	US
ALT01	Columbia Park	Altoona	PA	US
ANA01	Angel Stadium of Anaheim	Anaheim	CA	US
ARL01	Arlington Stadium	Arlington	TX	US
ARL02	Rangers Ballpark in Arlington	Arlington	TX	US
ATL01	Atlanta-Fulton County Stadium	Atlanta	GA	US
ATL02	Turner Field	Atlanta	GA	US
ATL03	Suntrust Park	Atlanta	GA	US
BAL01	Madison Avenue Grounds	Baltimore	MD	US
BAL02	Newington Park	Baltimore	MD	US
BAL03	Oriole Park I	Baltimore	MD	US

playerID	yearID	teamID	lgID	W	L	G
aardsda01	2004	SFN	NL	1	0	11
aardsda01	2006	CHN	NL	3	0	45
aardsda01	2007	CHA	AL	2	1	25
aardsda01	2008	BOS	AL	4	2	47
aardsda01	2009	SEA	AL	3	6	73
aardsda01	2010	SEA	AL	0	6	53
aardsda01	2012	NYA	AL	0	0	1
aardsda01	2013	NYN	NL	2	2	43
aardsda01	2015	ATL	NL	1	1	33
aasedo01	1977	BOS	AL	6	2	13
aasedo01	1978	CAL	AL	11	8	29

playerID	birthYear	birthCountry	deathYear
aardsda01	1981	USA	NULL
aaronha01	1934	USA	NULL
aaronto01	1939	USA	1984
aasedo01	1954	USA	NULL
abadan01	1972	USA	NULL
abadfe01	1985	D.R.	NULL
abadijo01	1850	USA	1905
abbated01	1877	USA	1957
abbeybe01	1869	USA	1962
abbeych01	1866	USA	1926
abbotda01	1862	USA	1930

playerID	birthYear	birthMonth	birthDay	birthCountry	birthState	birthCity
aardsda01	1981	12	27	USA	CO	Denver
aaronha01	1934	2	5	USA	AL	Mobile
aaronto01	1939	8	5	USA	AL	Mobile
aasedo01	1954	9	8	USA	CA	Orange
abadan01	1972	8	25	USA	FL	Palm Beach
abadfe01	1985	12	17	D.R.	La Romana	La Romana
abadijo01	1850	11	4	USA	PA	Philadelphia
abbated01	1877	4	15	USA	PA	Latrobe
abbeybe01	1869	11	11	USA	VT	Essex
abbeych01	1866	10	14	USA	NE	Falls City

playerID	yearID	teamID	g	ab	r	h	rbi
aardsda01	2004	SFN	11	0	0	0	0
aardsda01	2006	CHN	45	2	0	0	0
aardsda01	2007	CHA	25	0	0	0	0
aardsda01	2008	BOS	47	1	0	0	0
aardsda01	2009	SEA	73	0	0	0	0
aardsda01	2010	SEA	53	0	0	0	0
aardsda01	2012	NYA	1	0	0	0	0
aardsda01	2013	NYN	43	0	0	0	0
aardsda01	2015	ATL	33	1	0	0	0
aaronha01	1954	ML1	122	468	58	131	69
aaronha01	1955	ML1	153	602	105	189	106

playerID	birthYear	bats	throws	This row is deleted
aardsda01	1981	R	R	
abreubo01	1974	L	R	

PlayerID	salary	year	
aardsda01	2750000	2010	
aardsda01	4500000	2011	
abreubo01	10600000	2004	This row is orphaned
abreubo01	13100000	2005	This row is orphaned

playerID is the primary key in this table

playerID	birthYear	birthMonth	birthDay	birthCountry	birthState	birthCity
aardsda01	1981	12	27	USA	CO	Denver
aaronha01	1934	2	5	USA	AL	Mobile
aaronto01	1939	8	5	USA	AL	Mobile
aasedo01	1954	9	8	USA	CA	Orange
abadan01	1972	8	25	USA	FL	Palm Beach
abadfe01	1985	12	17	D.R.	La Romana	La Romana
abadijo01	1850	11	4	USA	PA	Philadelphia
abbated01	1877	4	15	USA	PA	Latrobe
abbeybe01	1869	11	11	USA	VT	Essex
abbeych01	1866	10	14	USA	NE	Falls City



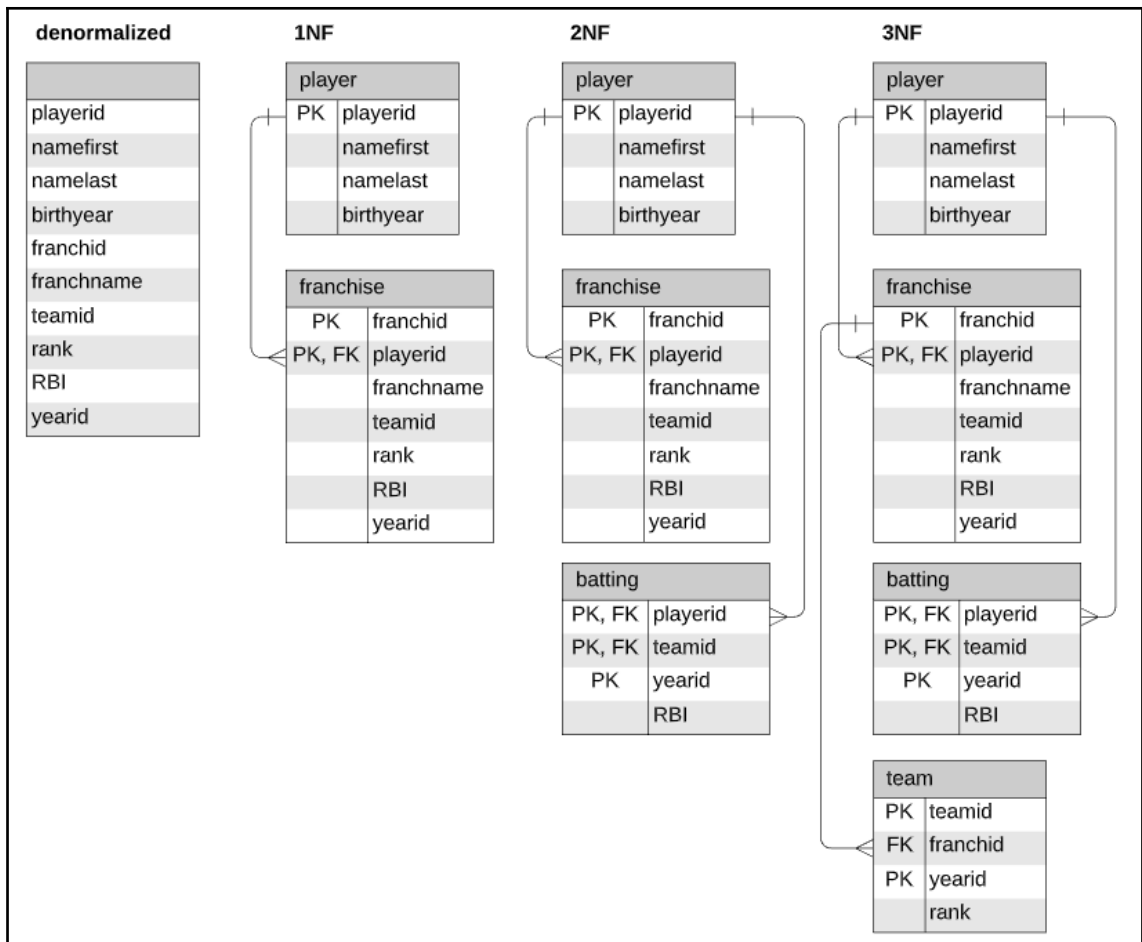
playerID is the foreign key in this table

playerID	yearID	teamID	g	ab	r	h	rbi
aardsda01	2004	SFN	11	0	0	0	0
aardsda01	2006	CHN	45	2	0	0	0
aardsda01	2007	CHA	25	0	0	0	0
aardsda01	2008	BOS	47	1	0	0	0
aardsda01	2009	SEA	73	0	0	0	0
aardsda01	2010	SEA	53	0	0	0	0
aardsda01	2012	NYA	1	0	0	0	0
aardsda01	2013	NYN	43	0	0	0	0
aardsda01	2015	ATL	33	1	0	0	0
aaronha01	1954	ML1	122	468	58	131	69
aaronha01	1955	ML1	153	602	105	189	106

playerID	yearID	ballots	needed	votes	inducted
aaronha01	1982	415	312	406	Y
abbotji01	2005	516	387	13	N
adamsba01	1937	201	151	8	N
adamsba01	1938	262	197	11	N
adamsba01	1939	274	206	11	N
adamsba01	1942	233	175	11	N

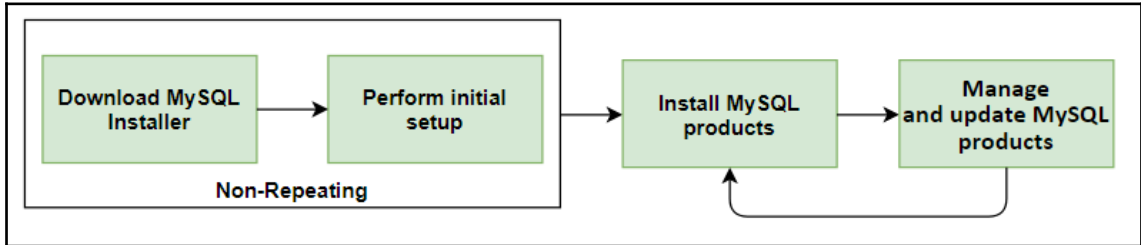
playerID	birthYear	deathYear
aardsda01	1981	NULL
aaronha01	1934	NULL
aaronto01	1939	1984
aasedo01	1954	NULL
abadan01	1972	NULL
abadfe01	1985	NULL
abadijo01	1850	1905
abbated01	1877	1957

playerID	yearID	teamID	g	ab
aardsda01	2004	SFN	11	0
aardsda01	2006	CHN	45	2
aardsda01	2007	CHA	25	0
aardsda01	2008	BOS	47	1
aardsda01	2009	SEA	73	0
aardsda01	2010	SEA	53	0
aardsda01	2012	NYA	1	0
aardsda01	2013	NYN	43	0
aardsda01	2015	ATL	33	1
aaronha01	1954	ML1	122	468
aaronha01	1955	ML1	153	602



Rank			DBMS	Database Model	Score		
Sep 2019	Aug 2019	Sep 2018			Sep 2019	Aug 2019	Sep 2018
1.	1.	1.	Oracle +	Relational, Multi-model ⓘ	1346.66	+7.18	+37.54
2.	2.	2.	MySQL +	Relational, Multi-model ⓘ	1279.07	+25.39	+98.60
3.	3.	3.	Microsoft SQL Server +	Relational, Multi-model ⓘ	1085.06	-8.12	+33.78
4.	4.	4.	PostgreSQL +	Relational, Multi-model ⓘ	482.25	+0.91	+75.82

Chapter 2: Installing and Using MySQL Workbench





MySQL Community Downloads

[MySQL Installer](#)

General Availability (GA) Releases

Archives



MySQL Installer 8.0.20

Select Operating System:

Microsoft Windows

[Looking for previous GA versions?](#)

Windows (x86, 32-bit), MSI Installer (mysql-installer-web-community-8.0.20.0.msi)	8.0.20	24.4M	Download
Windows (x86, 32-bit), MSI Installer (mysql-installer-community-8.0.20.0.msi)	8.0.20	420.6M	Download

 We suggest that you use the [MD5 checksums](#) and [GnuPG signatures](#) to verify the integrity of the packages you download.

MySQL Community Downloads

Login Now or Sign Up for a free account.

An Oracle Web Account provides you with the following advantages:

- Fast access to MySQL software downloads
- Download technical White Papers and Presentations
- Post messages in the MySQL Discussion Forums
- Report and track bugs in the MySQL bug system

Login »

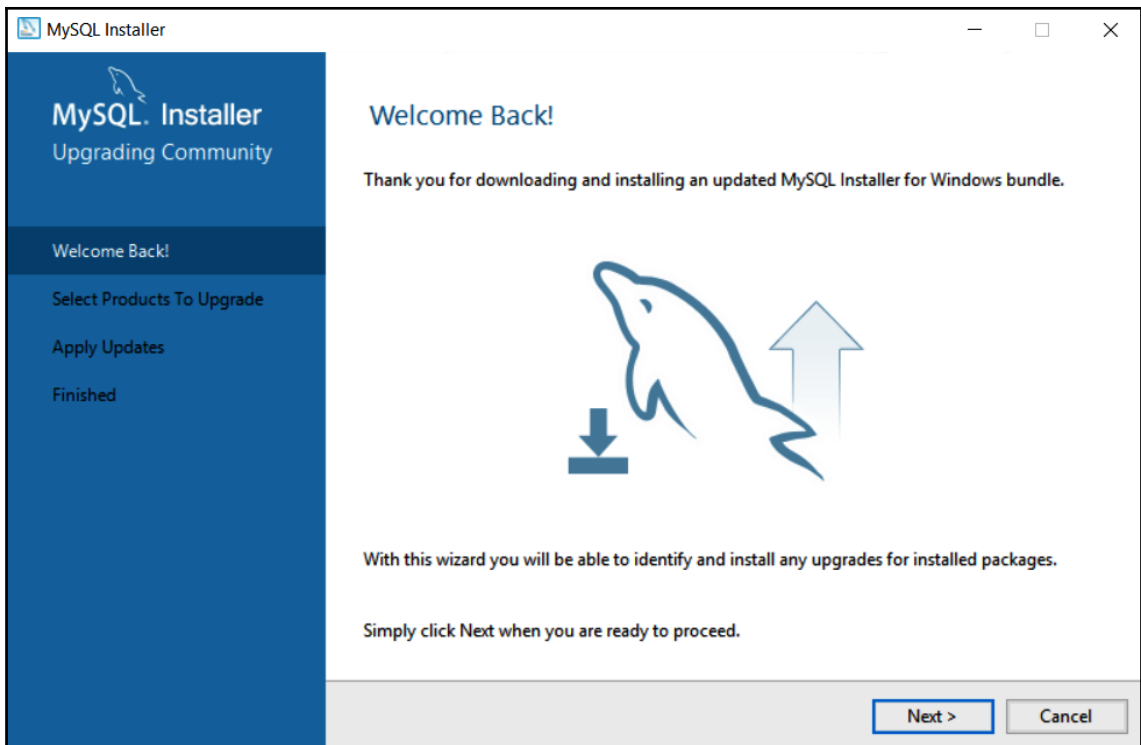
using my Oracle Web account

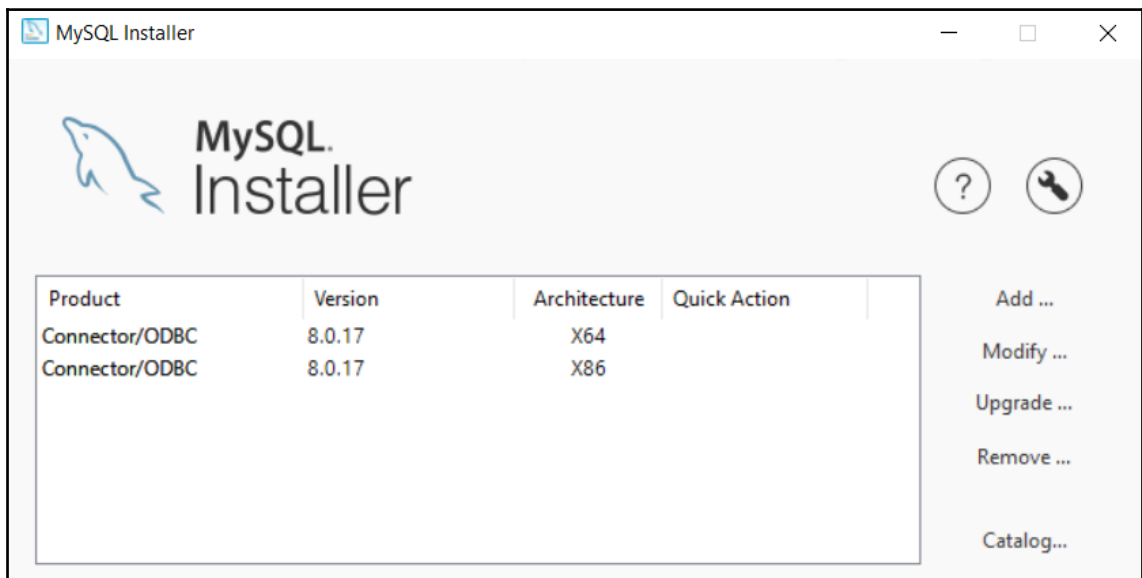
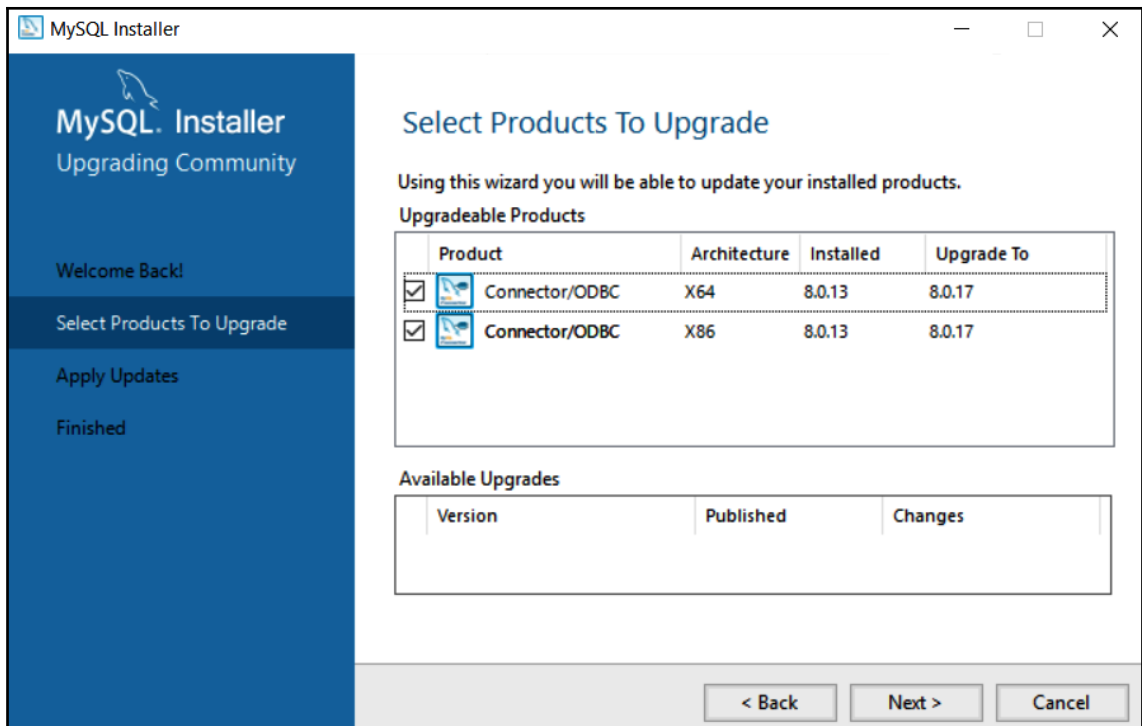
Sign Up »

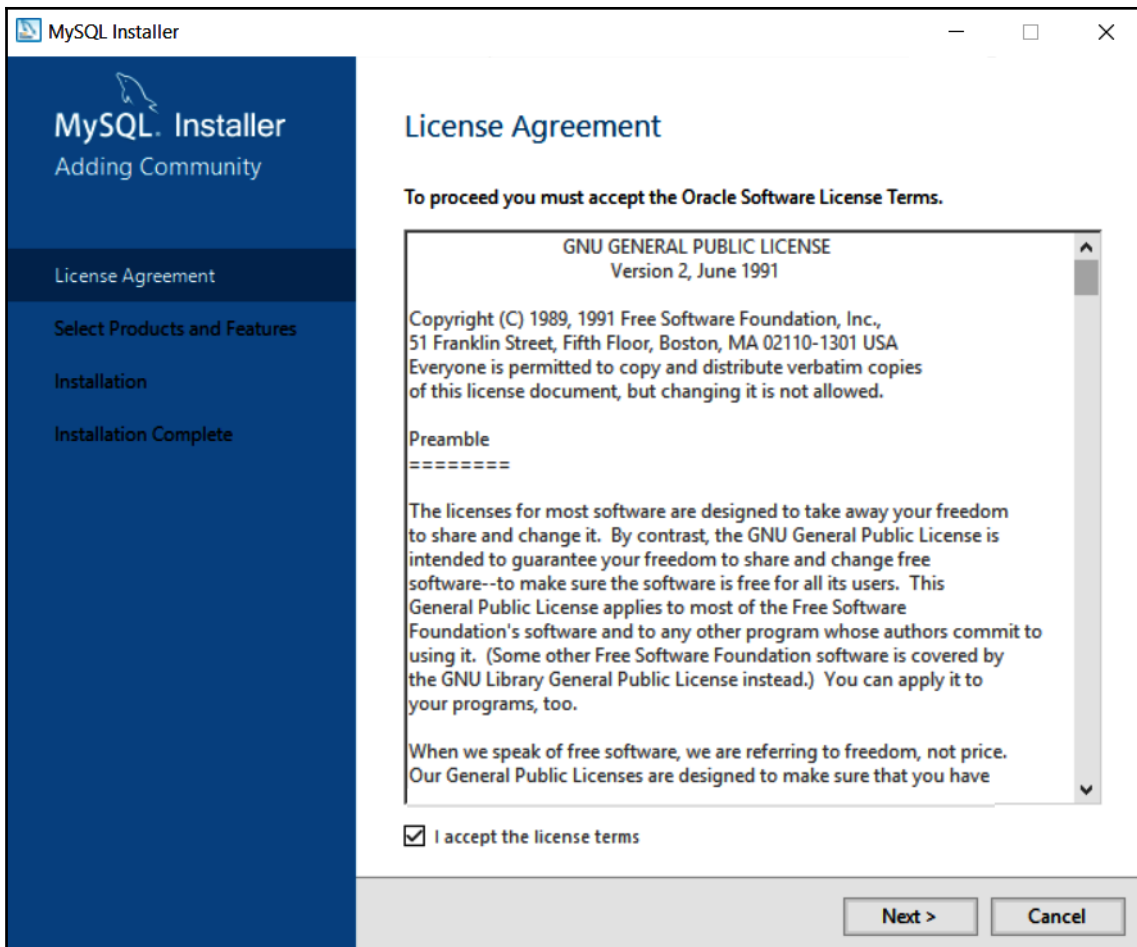
for an Oracle Web account

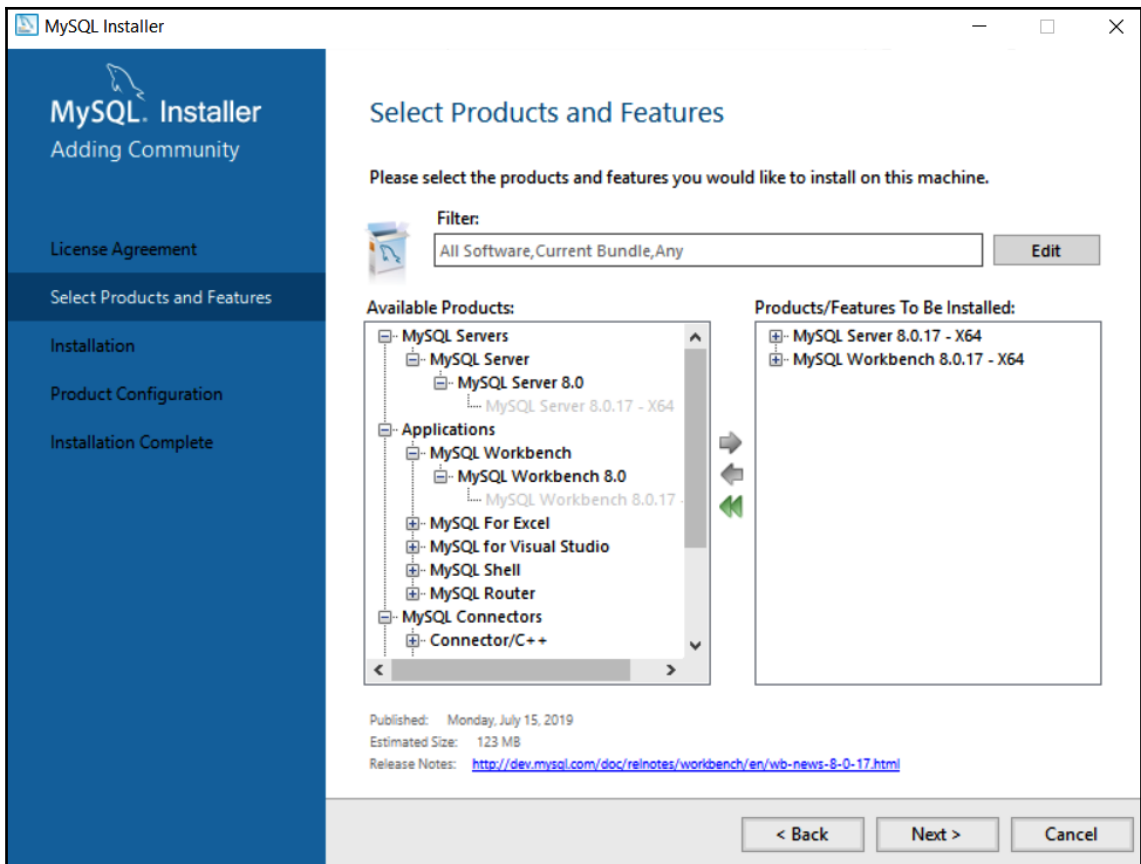
MySQL.com is using Oracle SSO for authentication. If you already have an Oracle Web account, click the Login link. Otherwise, you can signup for a free account by clicking the Sign Up link and following the instructions.

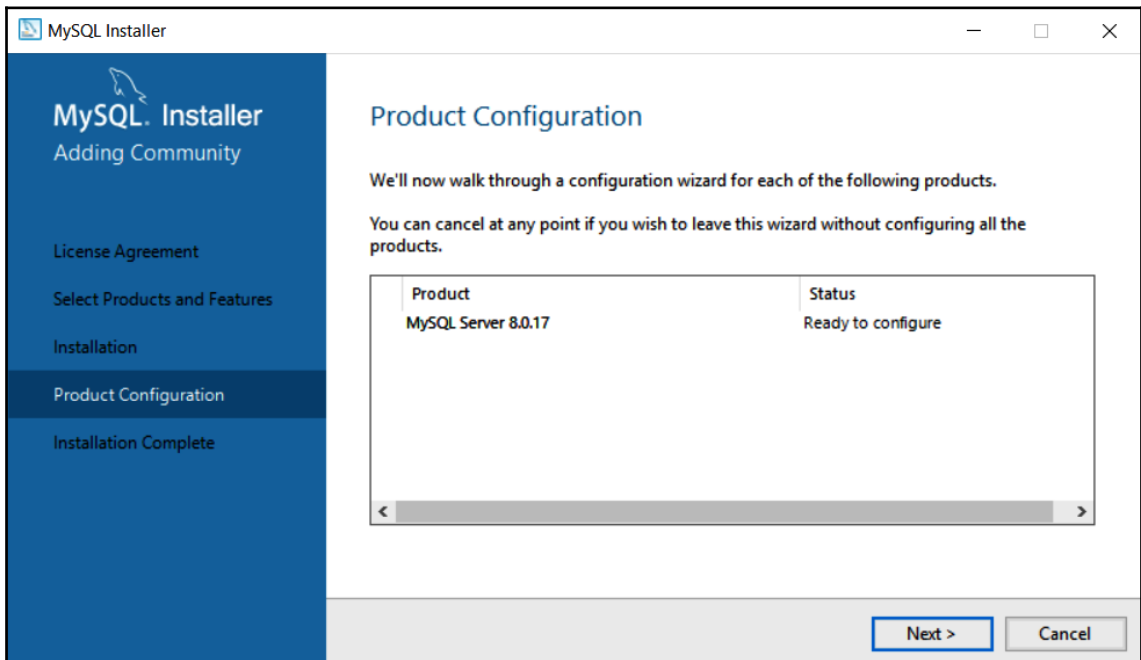
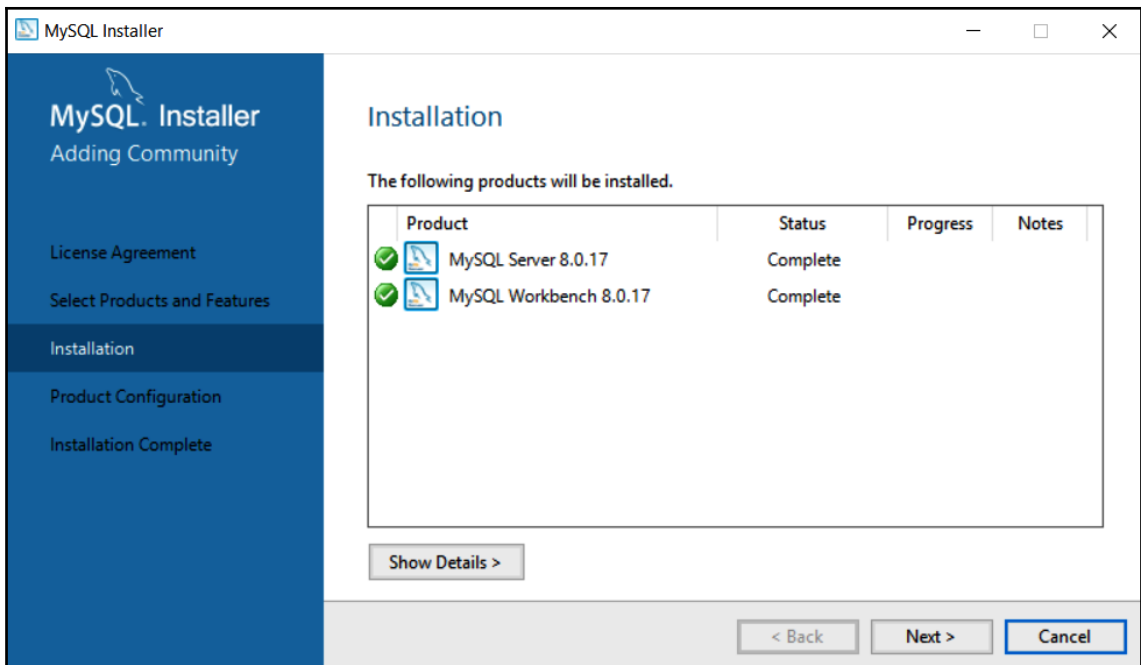
No thanks, just start my download.

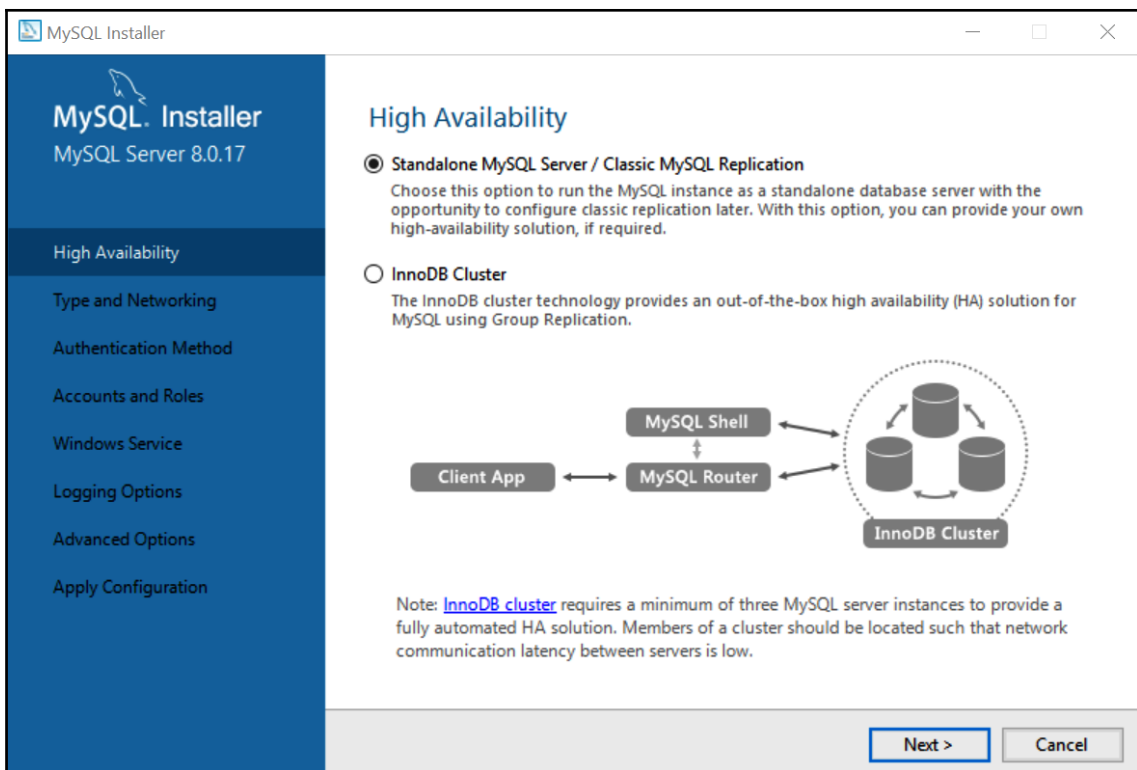












MySQL Installer

MySQL Server 8.0.17

High Availability

Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Apply Configuration

Type and Networking

Server Configuration Type

Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server instance.

Config Type: Development Computer

Connectivity

Use the following controls to select how you would like to connect to this server.

☒ TCP/IP

Port: 3306X Protocol Port: 33060

☒ Open Windows Firewall ports for network access

☐ Named Pipe

Pipe Name: MYSQL

☐ Shared Memory

Memory Name: MYSQL

Advanced Configuration

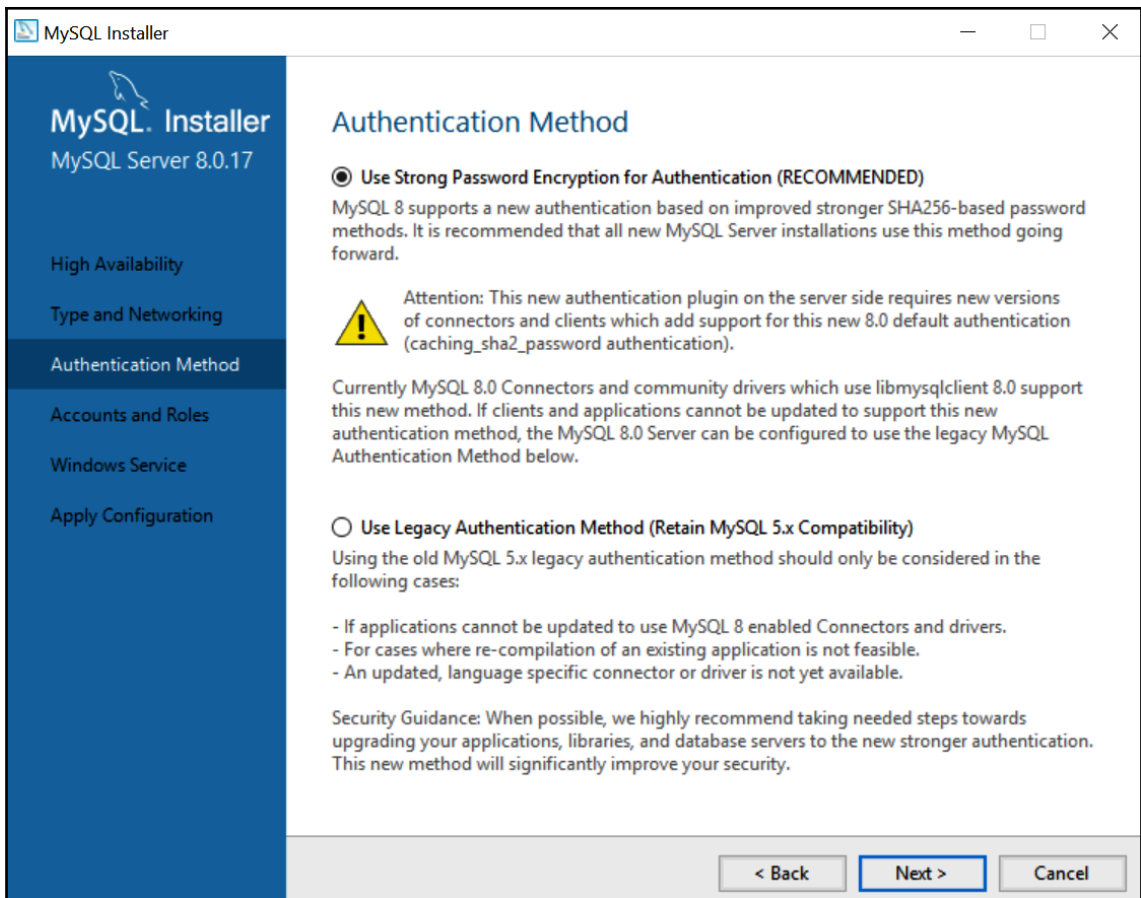
Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.

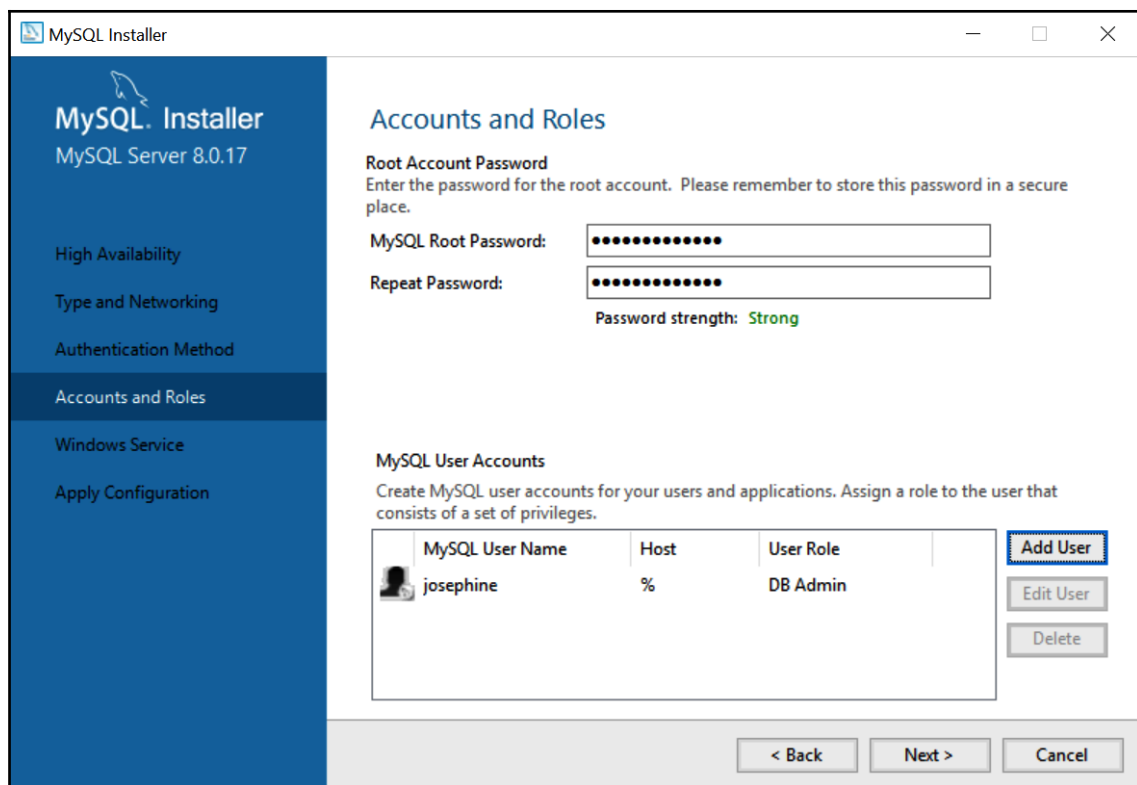
☐ Show Advanced and Logging Options

< Back

Next >

Cancel





 MySQL User Account ✕

Please specify the user name, password, and database role.



User Name:

Host:

Role:

Authentication: ☒ MySQL

MySQL user credentials

Password:

Confirm Password:

Password strength: **Strong**

**MySQL User Account**

Please specify the user name



User Name:

Host:

Role:

Authentication:

MySQL user credentials

Password:

Confirm Password:

Password strength: Max

**Instance Manager**
grants rights needed to maintain server

**Monitor Admin**
minimum set of rights needed to monitor server

**Process Admin**
rights needed to assess, monitor, and kill any user

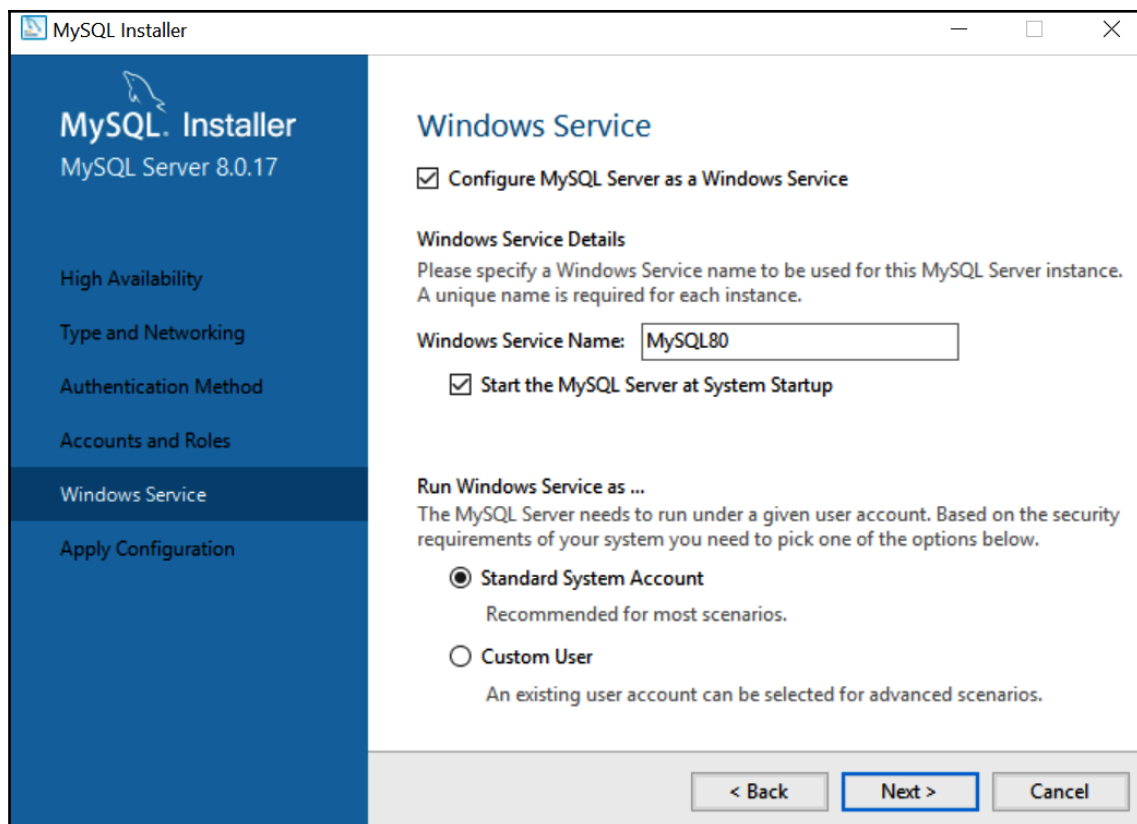
**Replication Admin**
rights needed to setup and manage replication

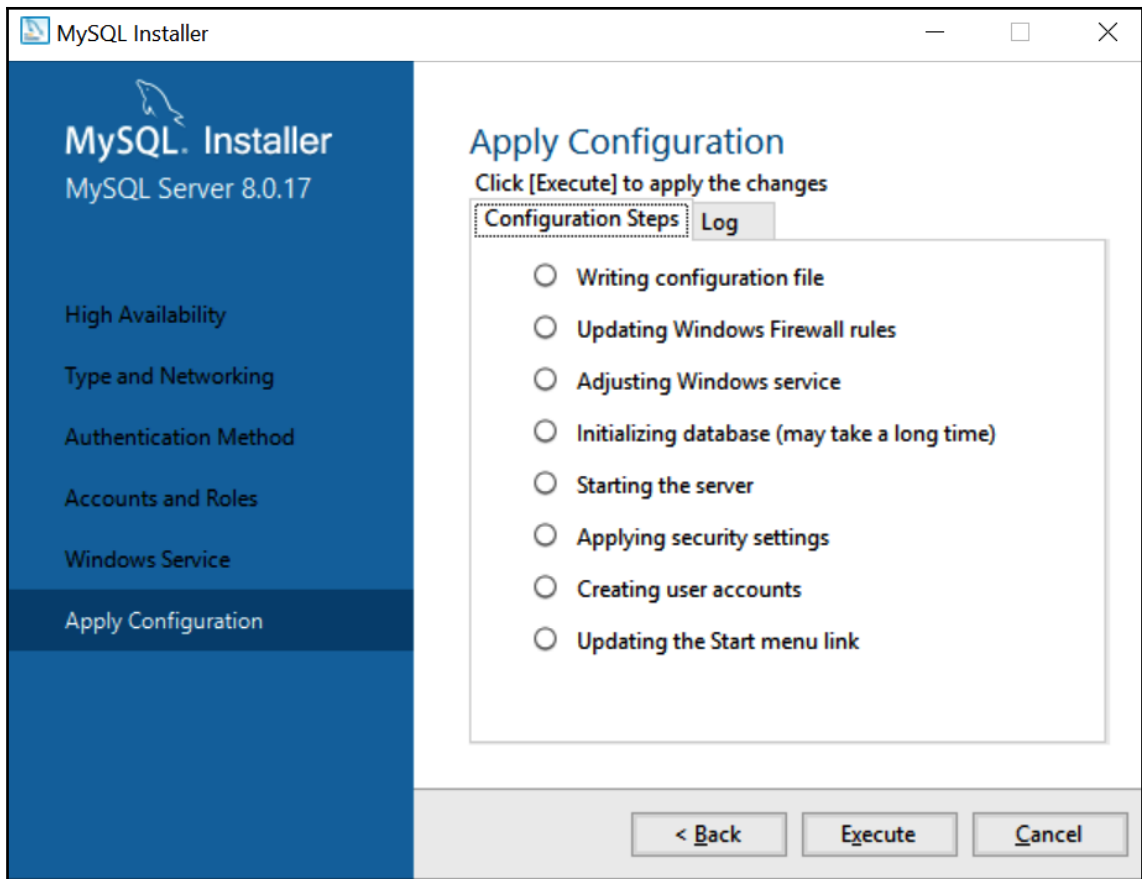
**Security Admin**
rights to manage logins and grant and revoke serv

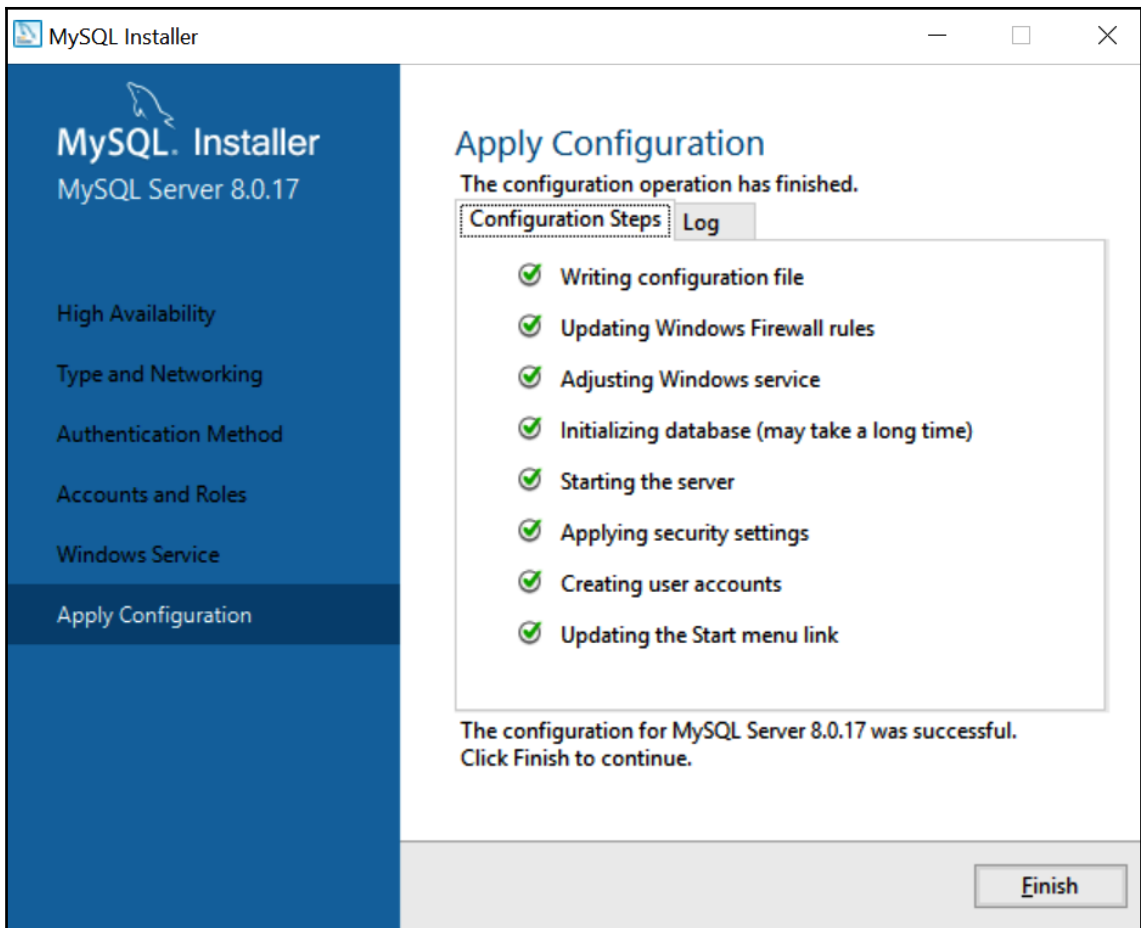
**User Admin**
grants rights to create users logins and reset passw

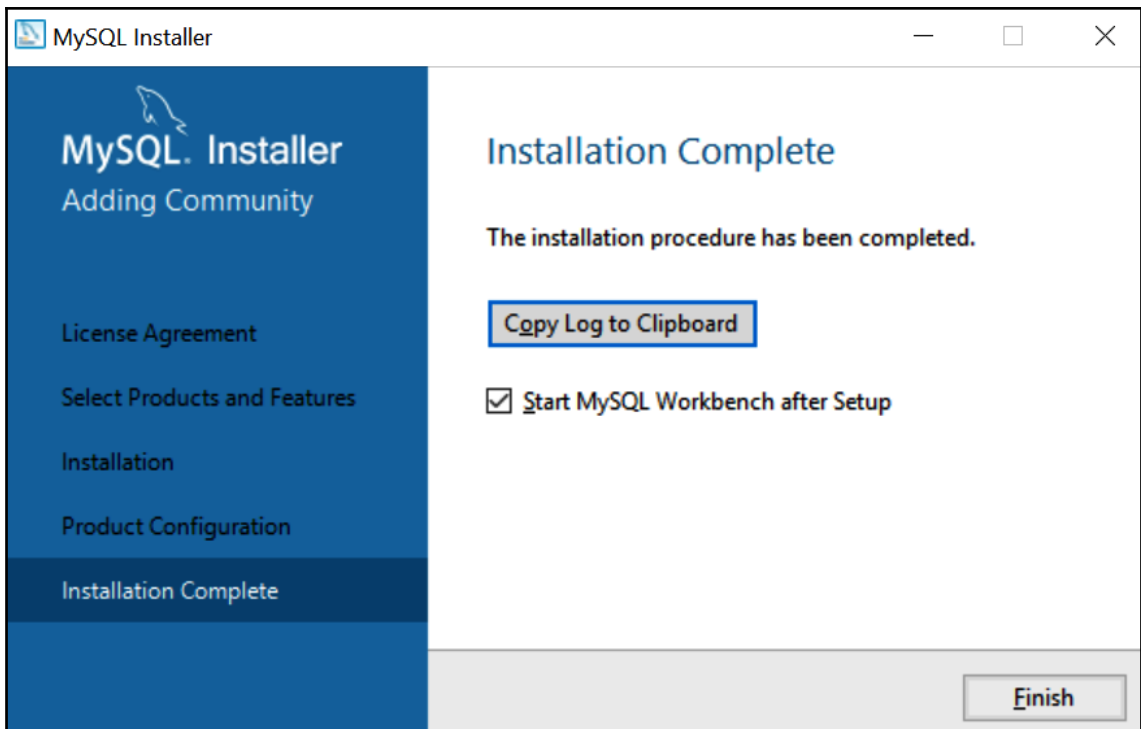
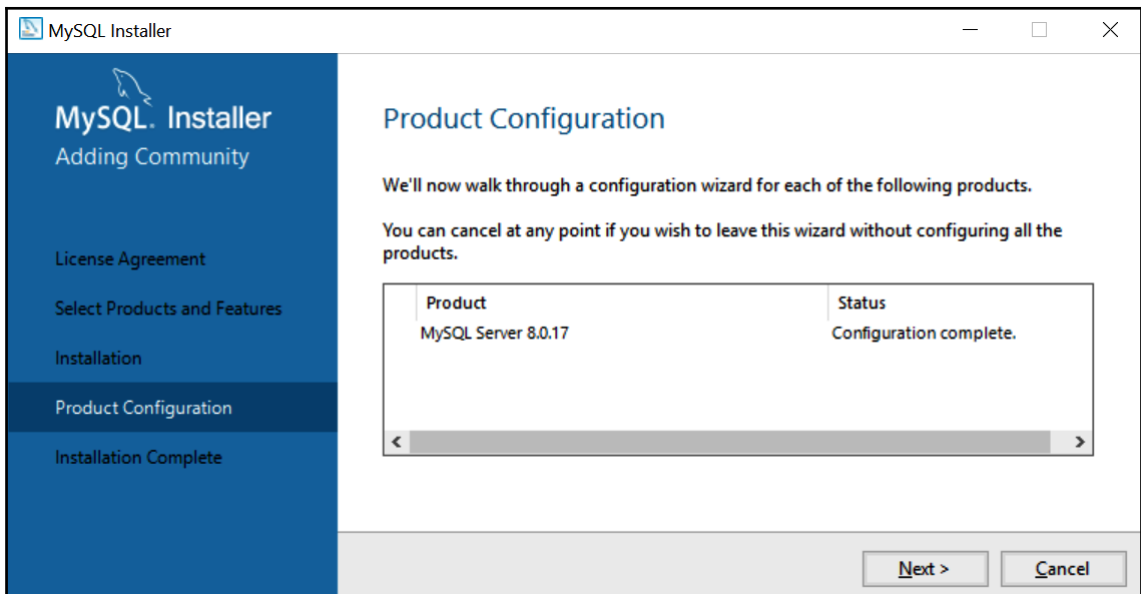
OK

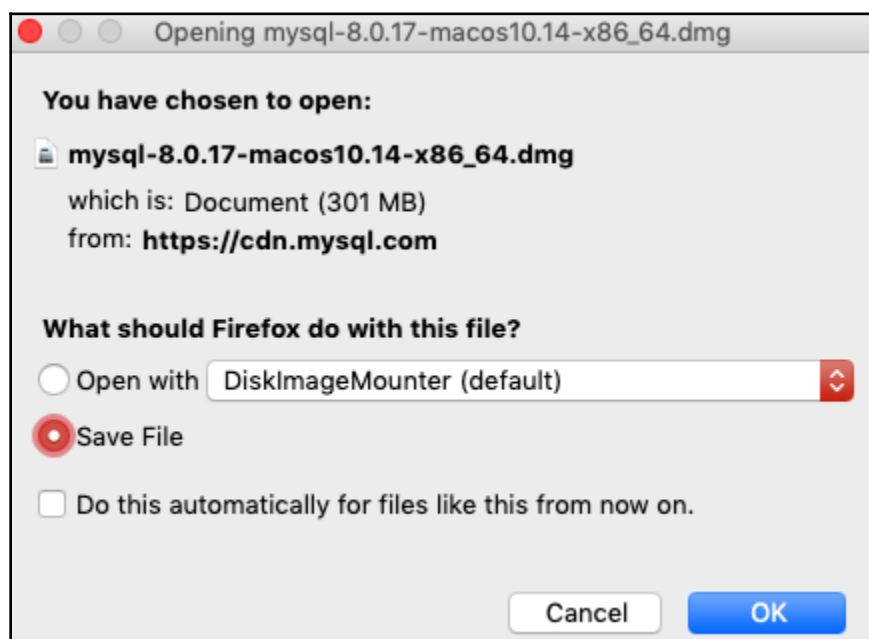
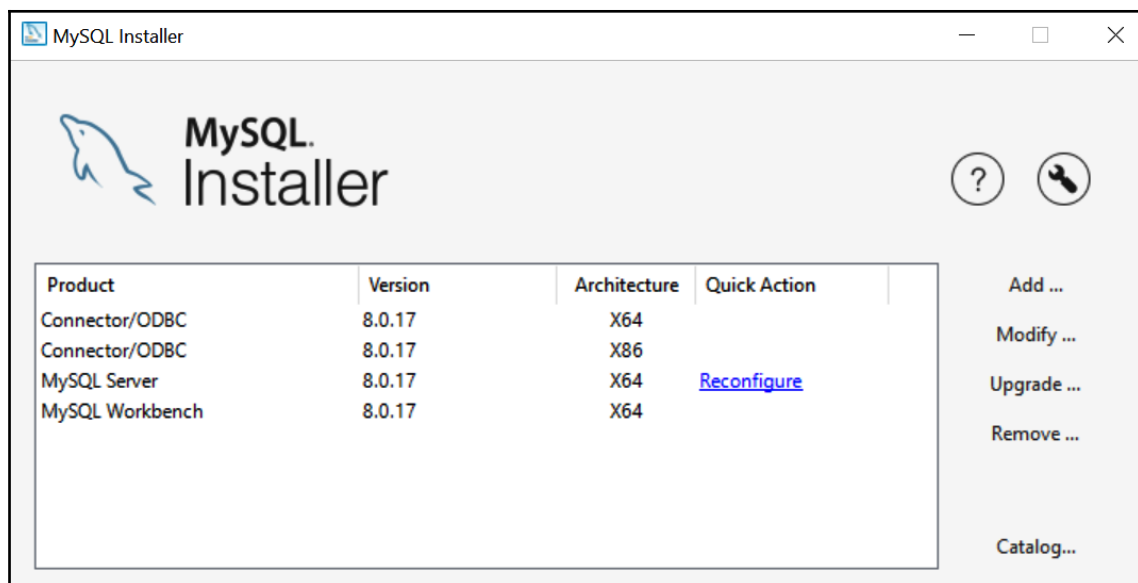
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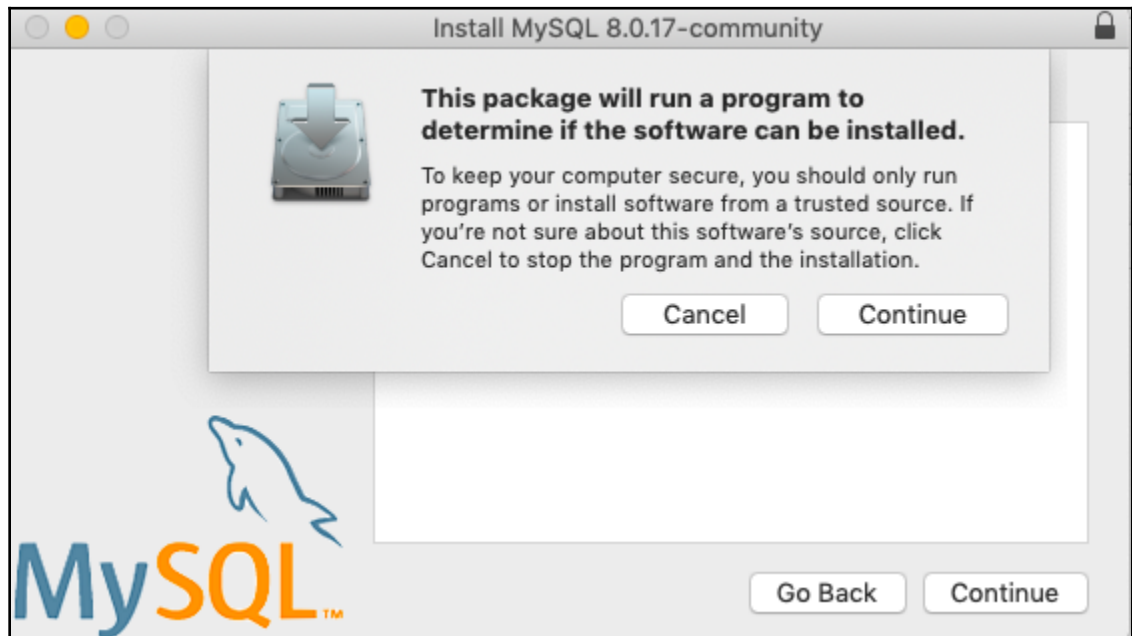
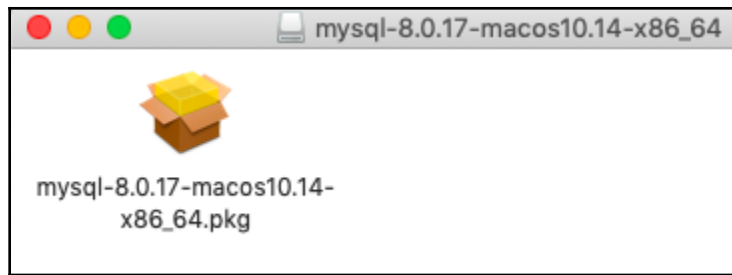


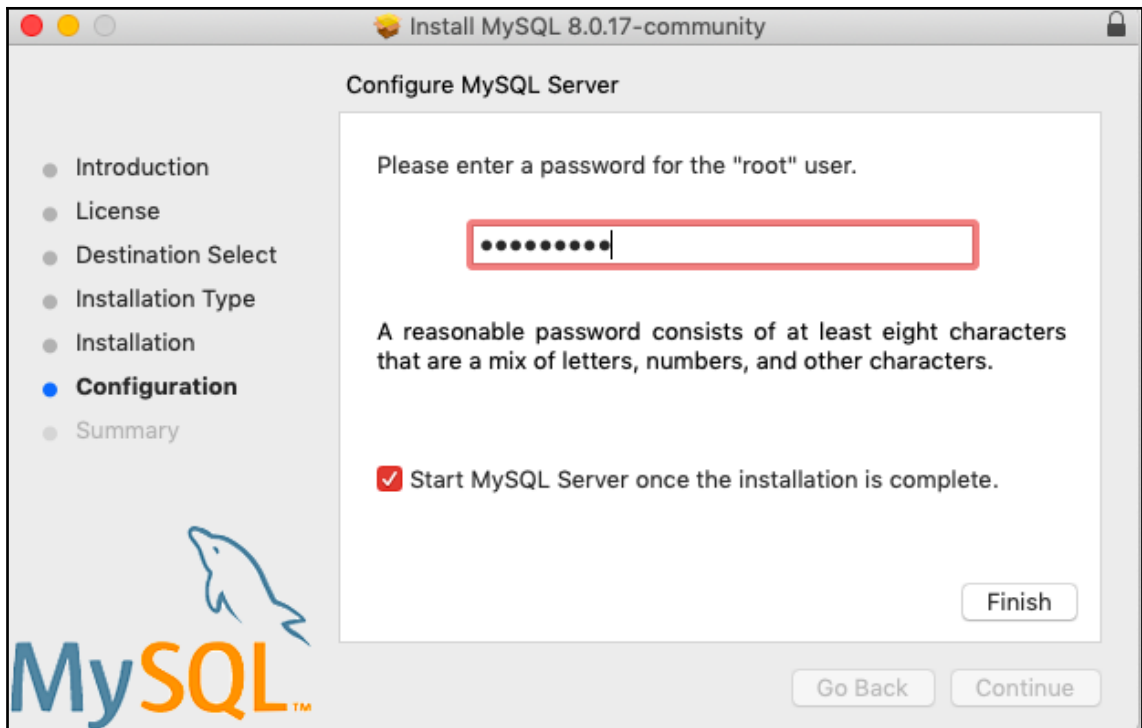


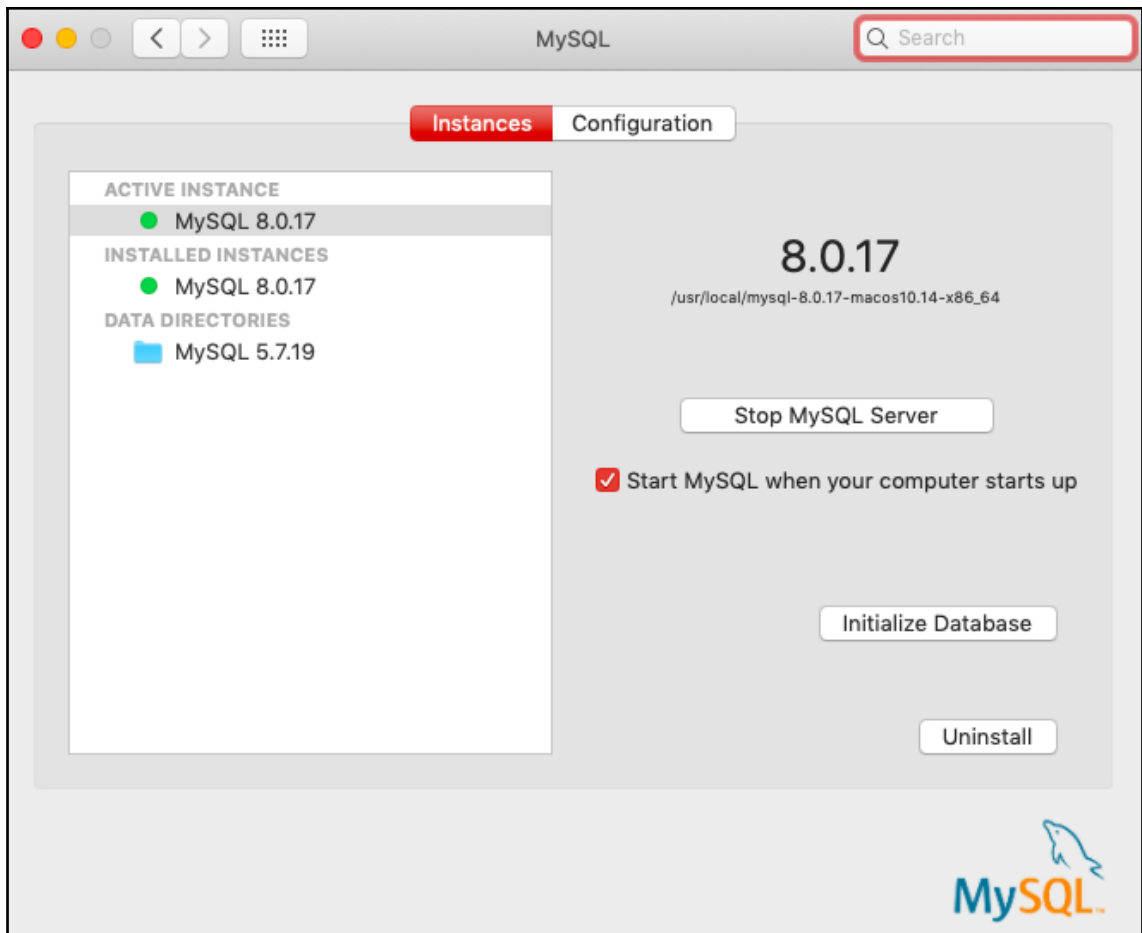


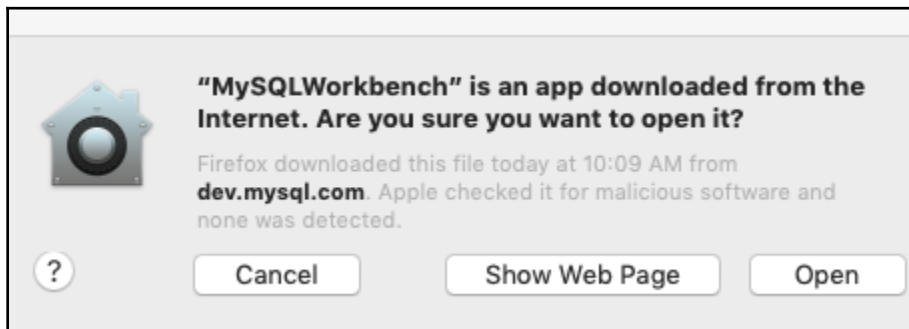












MySQL Connections

Local instance MySQL80

 root

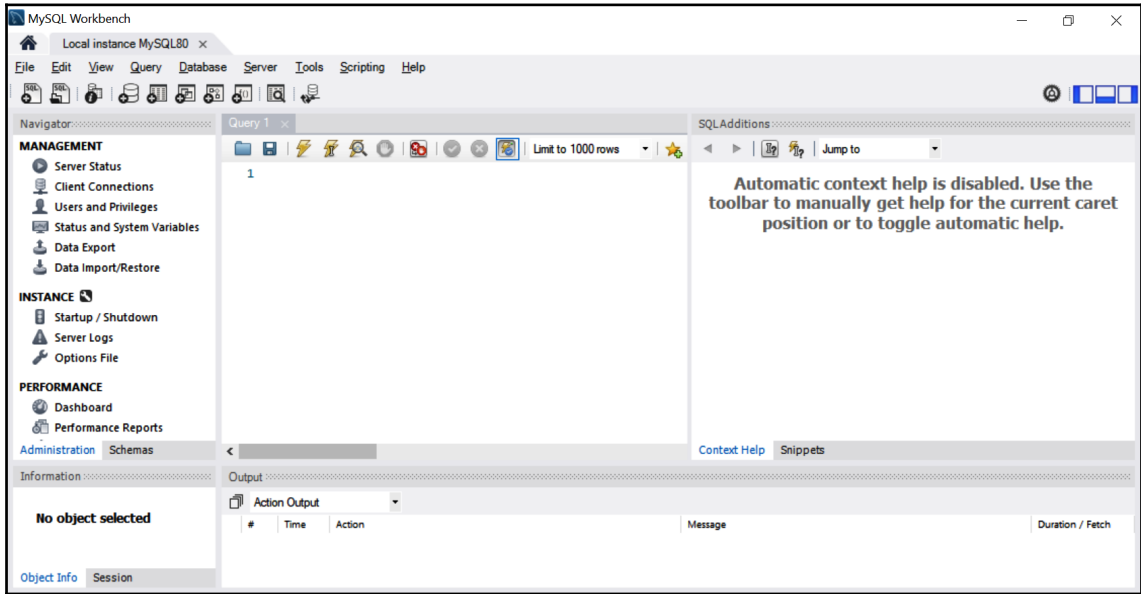
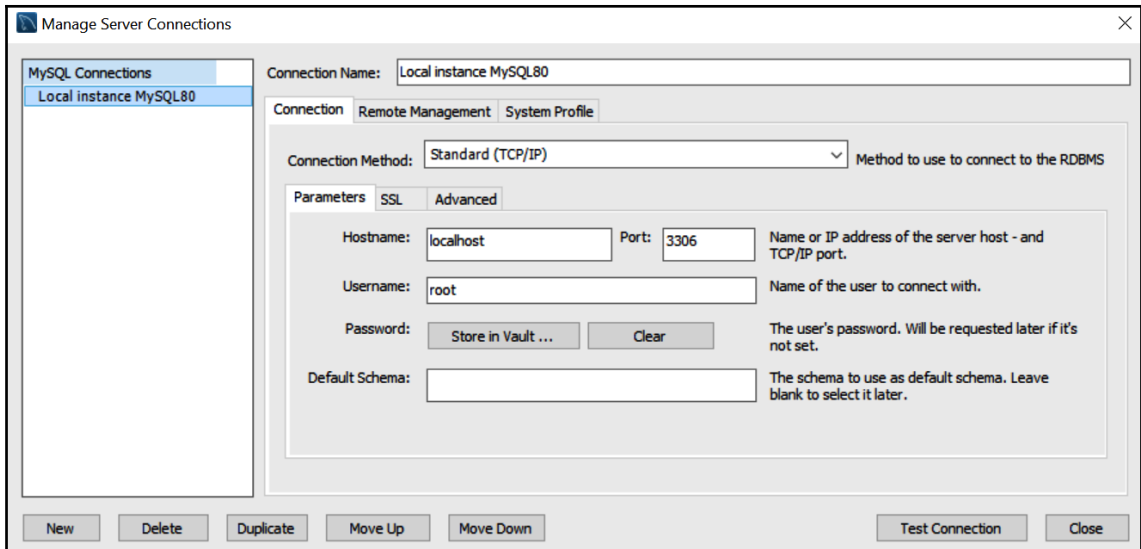
 localhost:3306

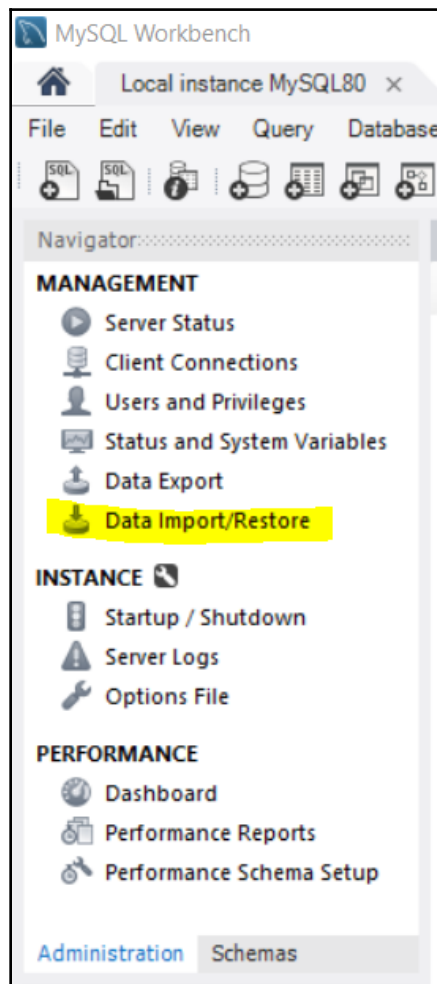
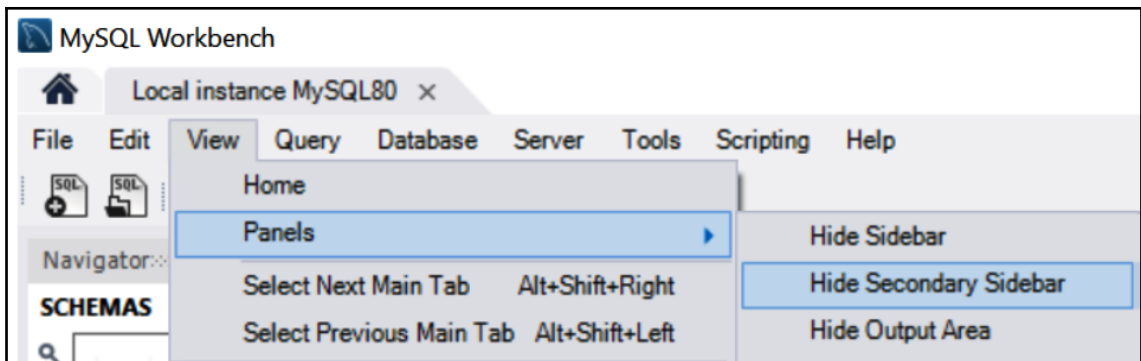
MySQL Connections

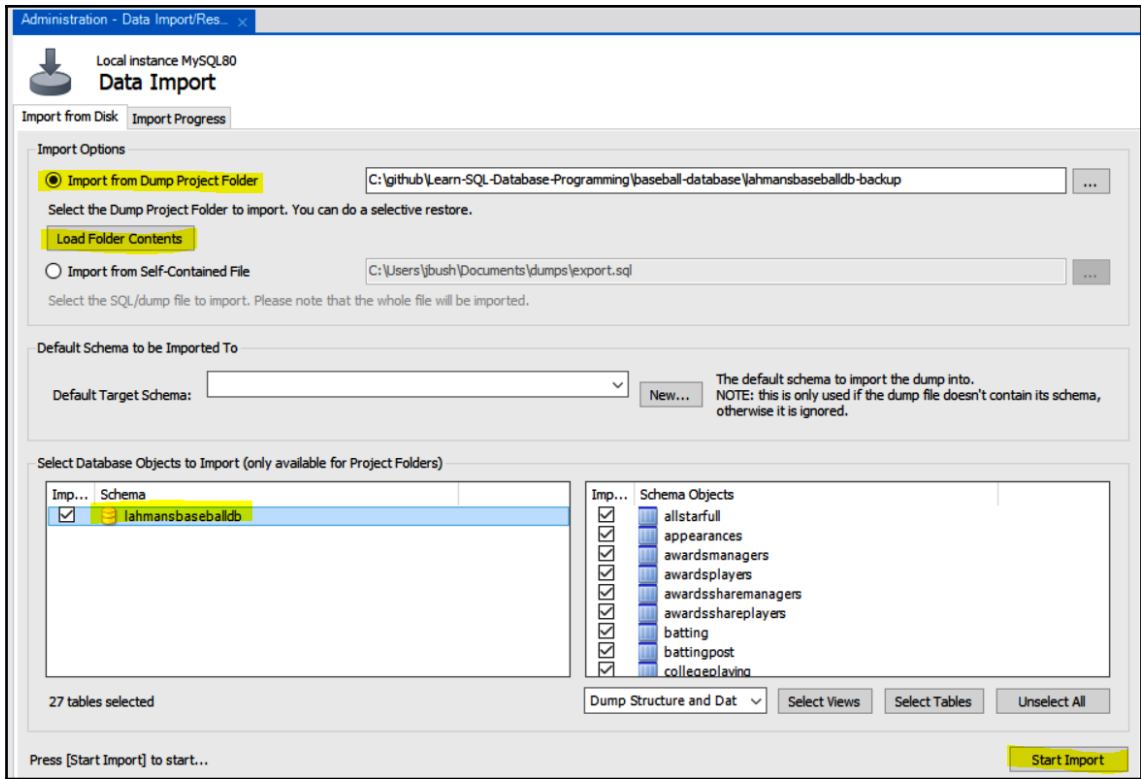
Local instance MySQL80

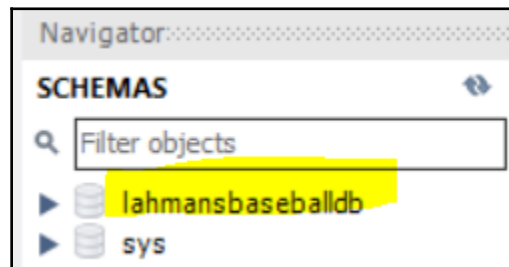
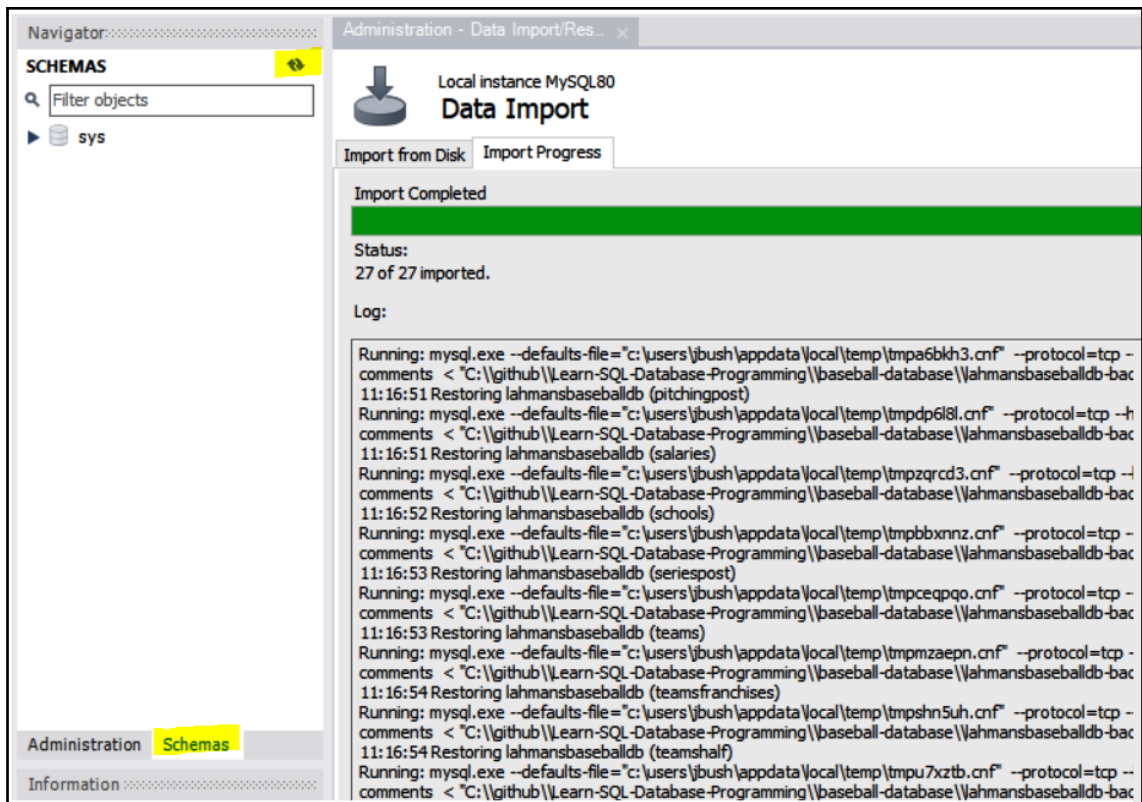
 root

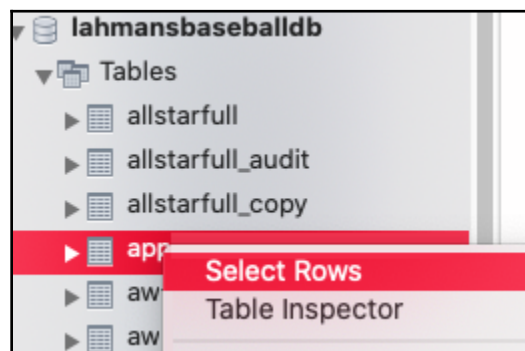
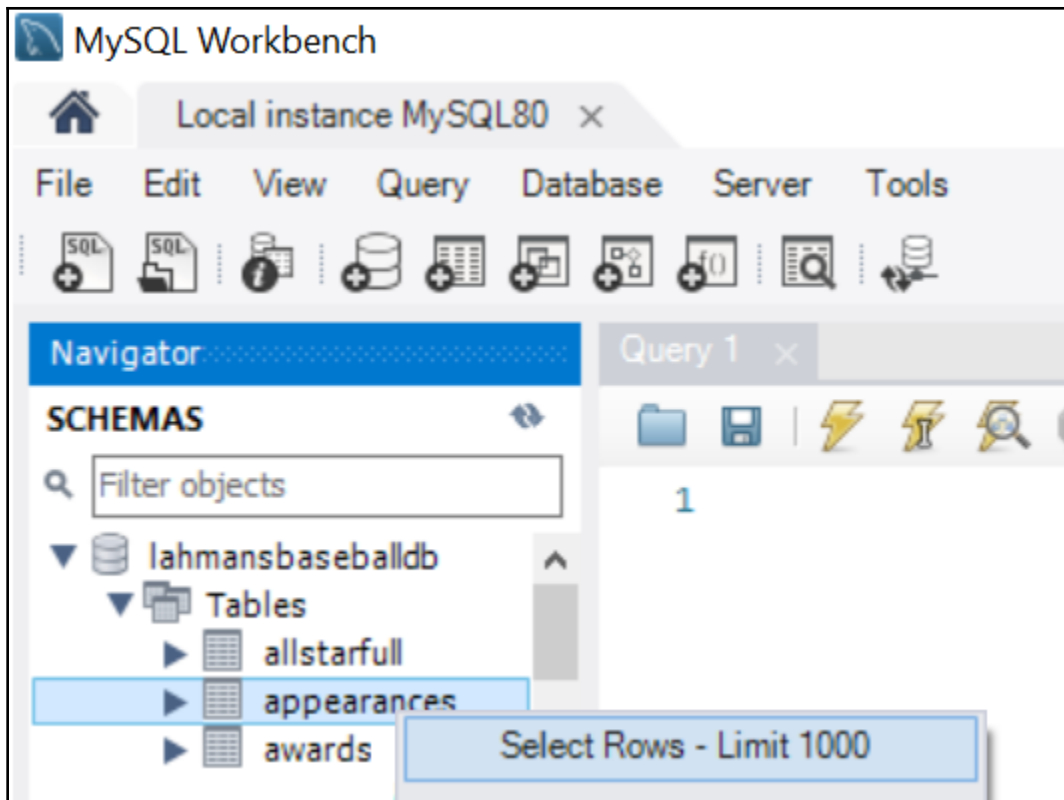
 localhost:3306











Navigation

Filter objects

lahmansbasebalddb

Tables

allstarfull

appearances

awardsmanagers

awardsplayers

awardsshareman

awardsshareplay

batting

Administration

Schemas

Information

Table: appearances

Columns:

yearID

smallint(6)

PK

teamID

varchar(3)

PK

lgID

varchar(2)

varchar(9)

PK

playerID

smallint(6)

smallint(6)

smallint(6)

smallint(6)

Object Info

Session

Query 1

appearances

Limit to 1000 rows

1

SELECT * FROM lahmansbasebalddb.appearances;

Result Grid

Filter Rows:

Edit

Export/Import

Wrap Cell Content

Fetch rows

Result Grid

yearID	teamID	lgID	playerID	G_all	GS	G_batting	G_defense	G_p	G_c	G_1b	G_2b	G_3b	G_ss	G_lf	G_cf	G_rf	G_o
1871	BS1	NA	barnero01	31	31	31	31	0	0	0	16	0	15	0	0	0	0
1871	BS1	NA	barrofr01	18	17	18	18	0	0	0	1	0	0	13	0	4	17
1871	BS1	NA	birdsda01	29	29	29	29	0	7	0	0	0	0	0	0	27	27
1871	BS1	NA	conebr01	19	18	19	19	0	0	0	0	0	0	18	0	1	19

appearances 1

Apply

Revert

Output

Action Output

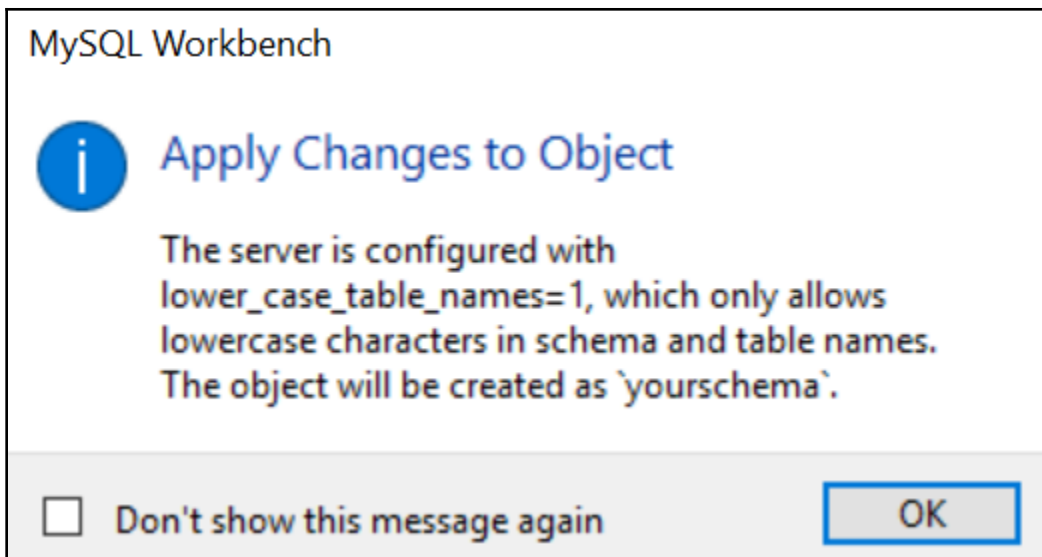
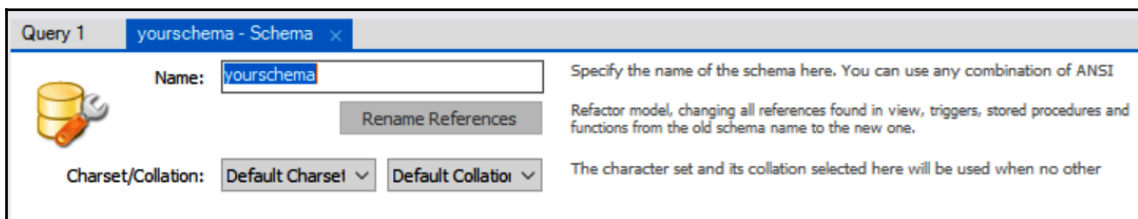
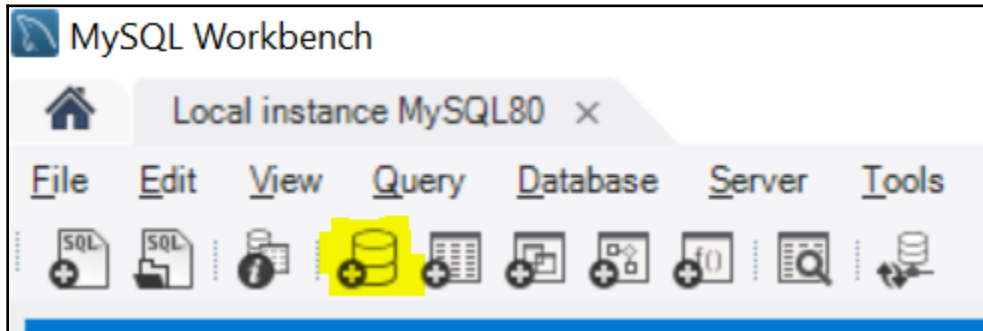
#	Time	Action	Message	Duration / Fetch
1	13:46:55	SELECT * FROM lahmansbasebalddb.appearances LIMIT 0, 1000	1000 row(s) returned	0.032 sec / 0.000 sec

Chapter 3: Understanding Data Types

id	enumerated_col
1	red
2	green
3	blue
4	red
5	red

id	set_col
1	red,green
2	red
3	red,green,blue
4	green
5	green,blue

Chapter 4: Designing and Creating a Database



Apply SQL Script to Database

Review SQL Script

Apply SQL Script

Review the SQL Script to be Applied on the Database

Online DDL

Algorithm: Default Lock Type: Default

1 CREATE SCHEMA `yourschema` ;

2

<

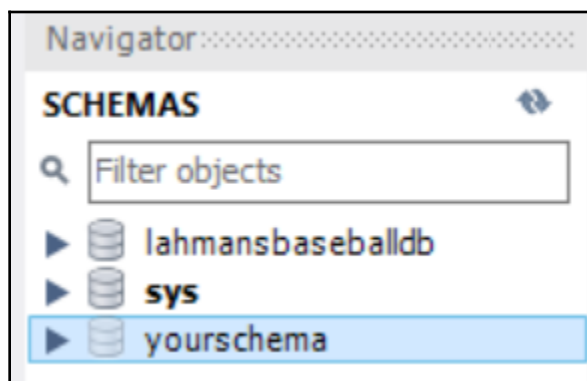
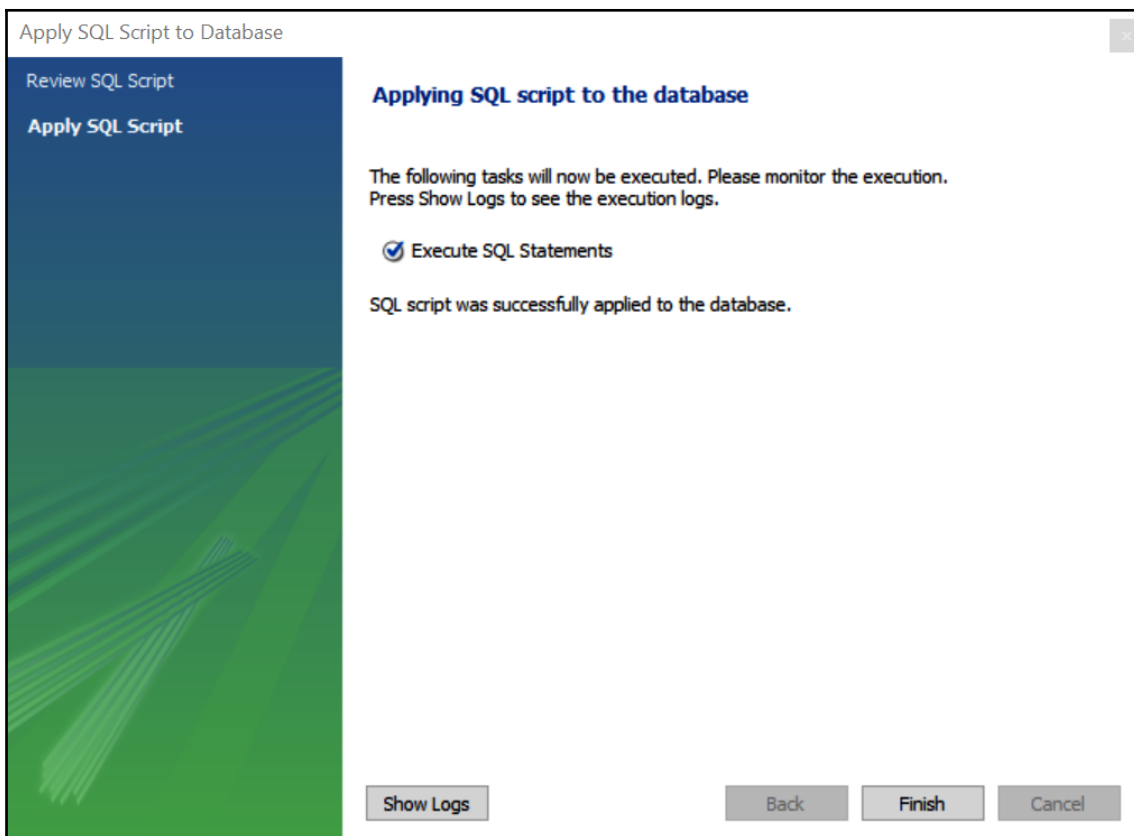
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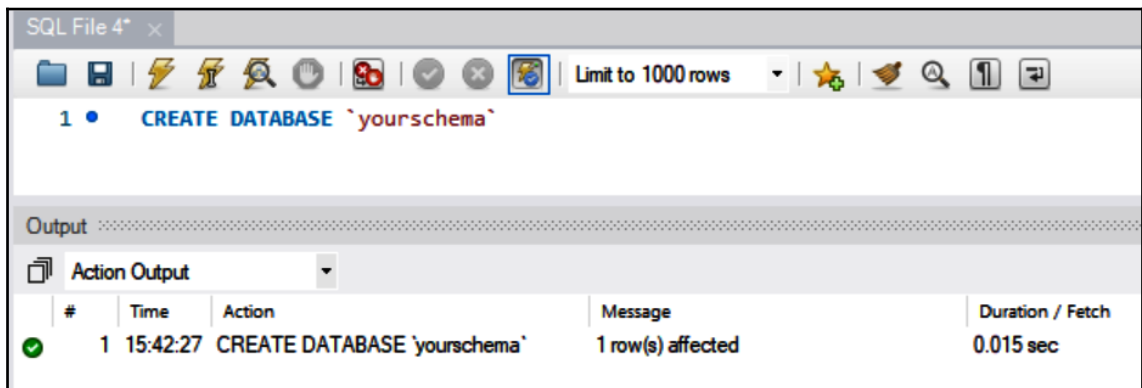
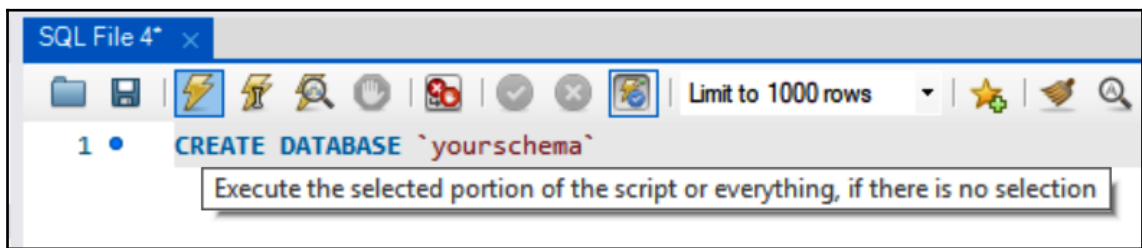
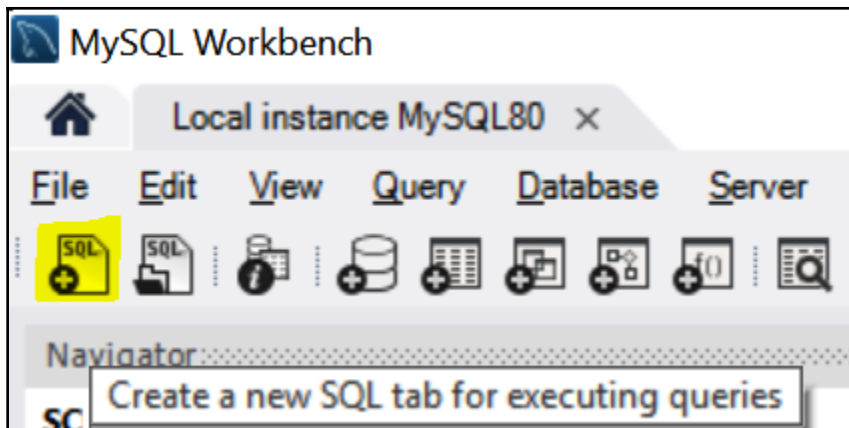
Back

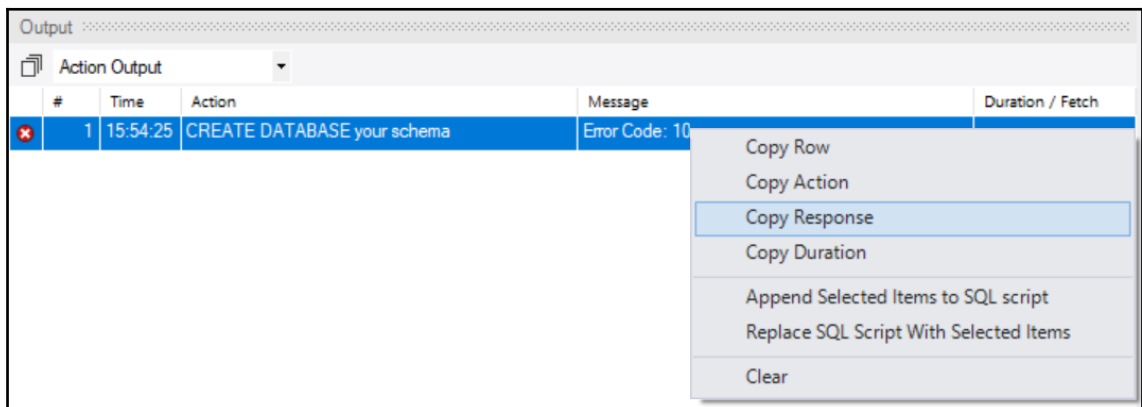
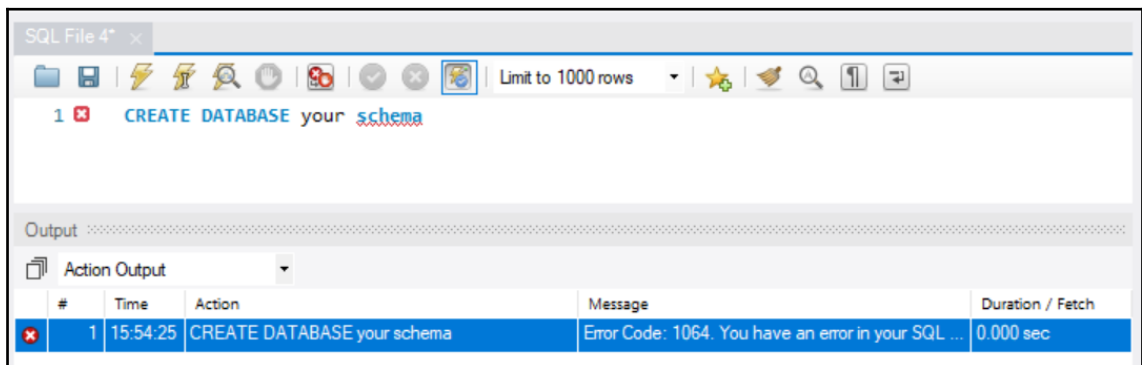
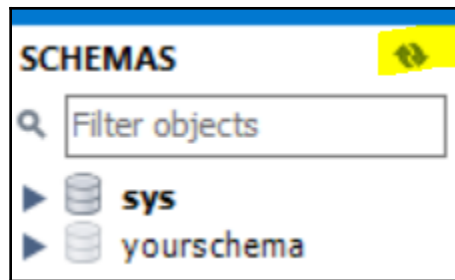
Apply

Cancel

[41]

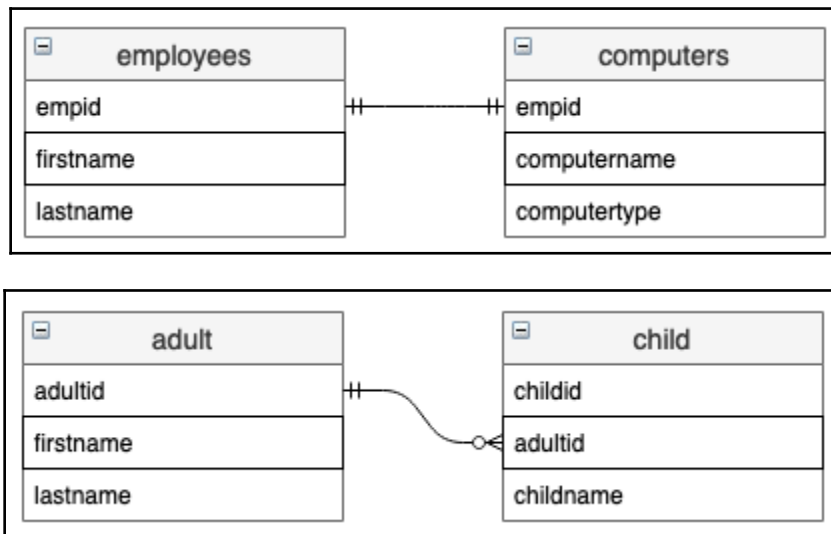


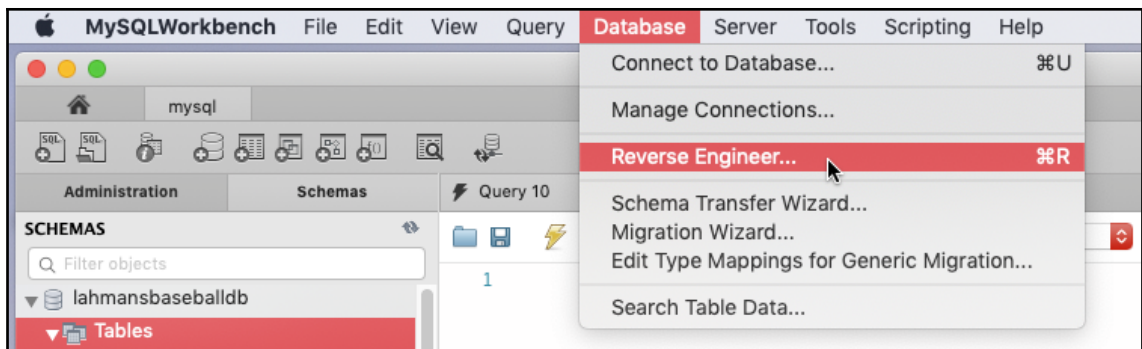
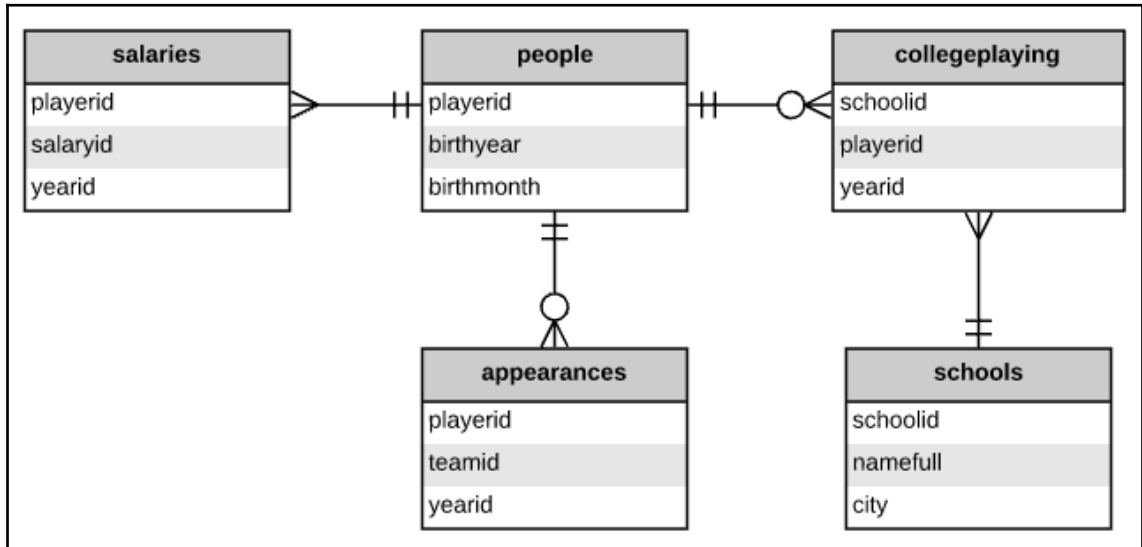
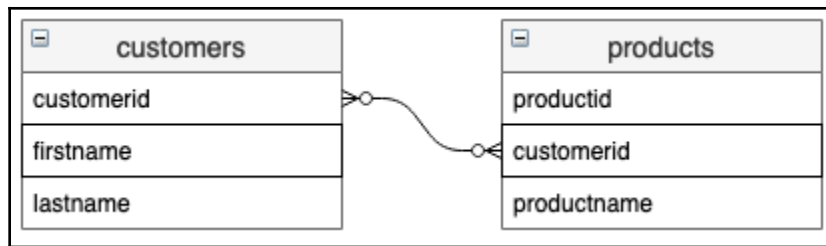




Output				
Action Output				
	#	Time	Action	Message
✖	1	15:54:25	CREATE DATABASE your schema	Error Code: 1064

Copy Row
Copy Action
Copy Response
Copy Duration
Append Selected Items to SQL script
Replace SQL Script With Selected Items
Clear





Reverse Engineer Database

Set Parameters for Connecting to a DBMS

Connection Options

Connect to DBMS

Select Schemas

Retrieve Objects

Select Objects

Reverse Engineer

Results

Stored Connection: mysql

Select from saved connection settings

Connection Method: Standard (TCP/IP)

Method to use to connect to the RDBMS

Parameters

SSL

Advanced

Hostname: localhost

Port: 3306

Name or IP address of the server host - and TCP/IP port.

Username: root

Name of the user to connect with.

Password:

Store in Keychain ...

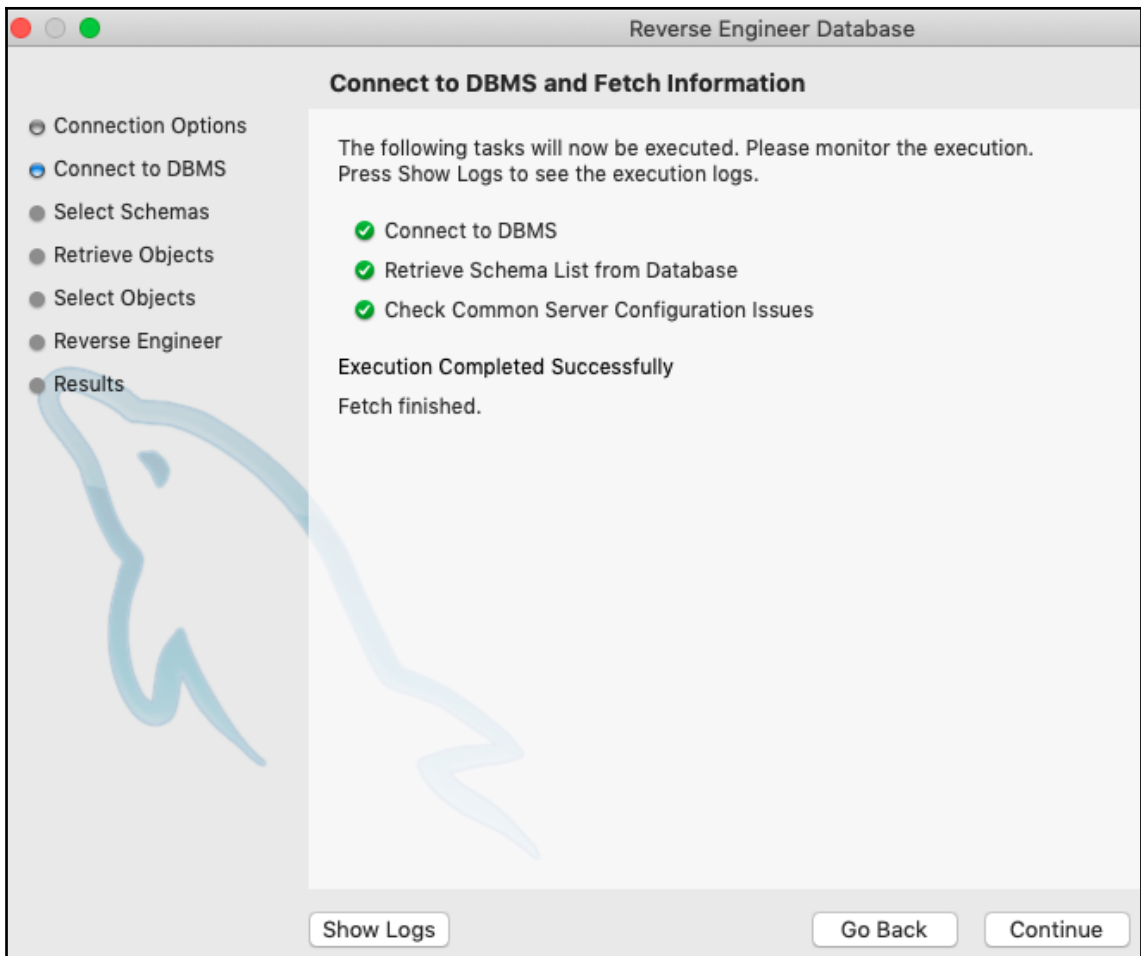
Clear

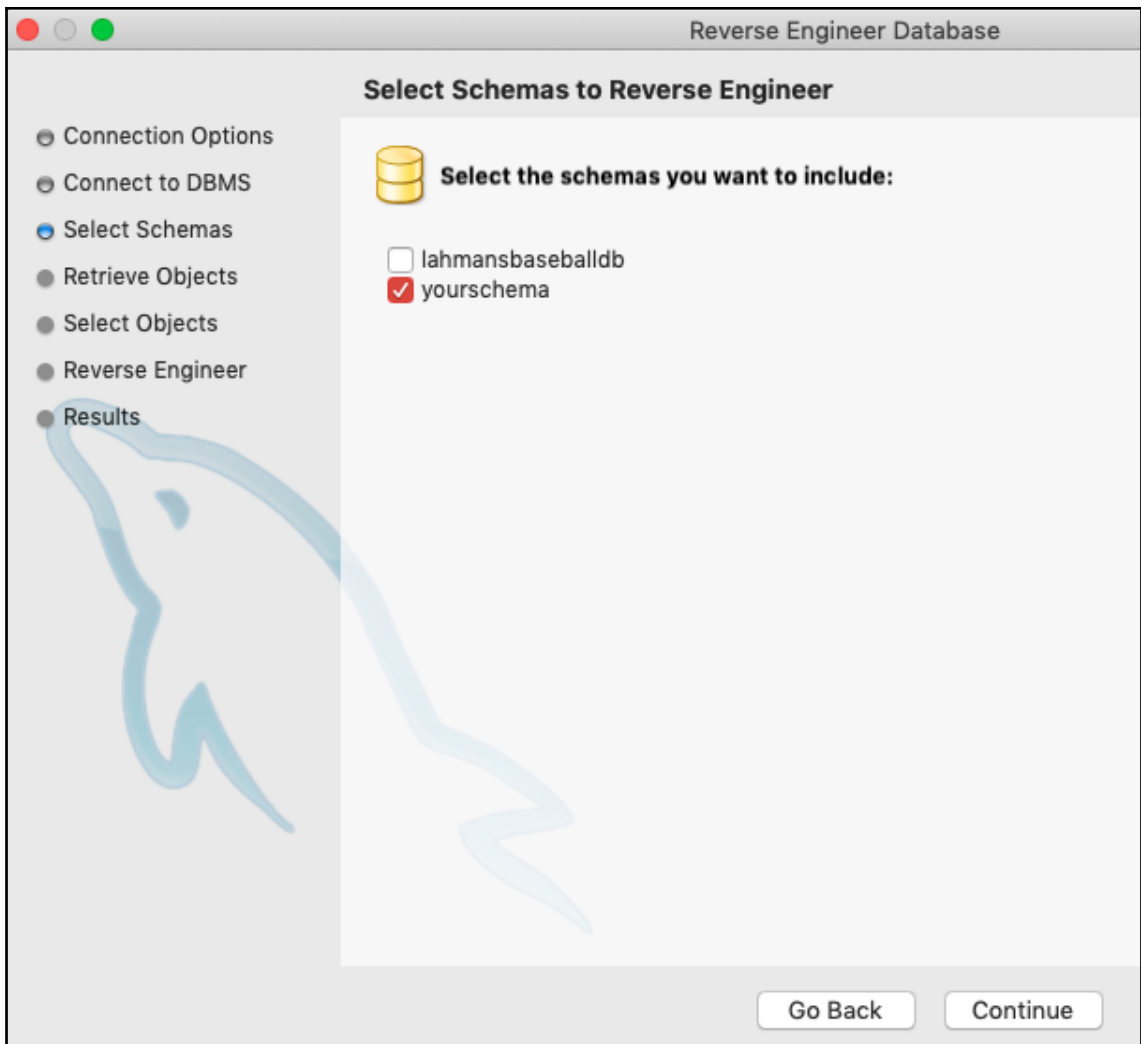
The user's password. Will be requested later if it's not set.

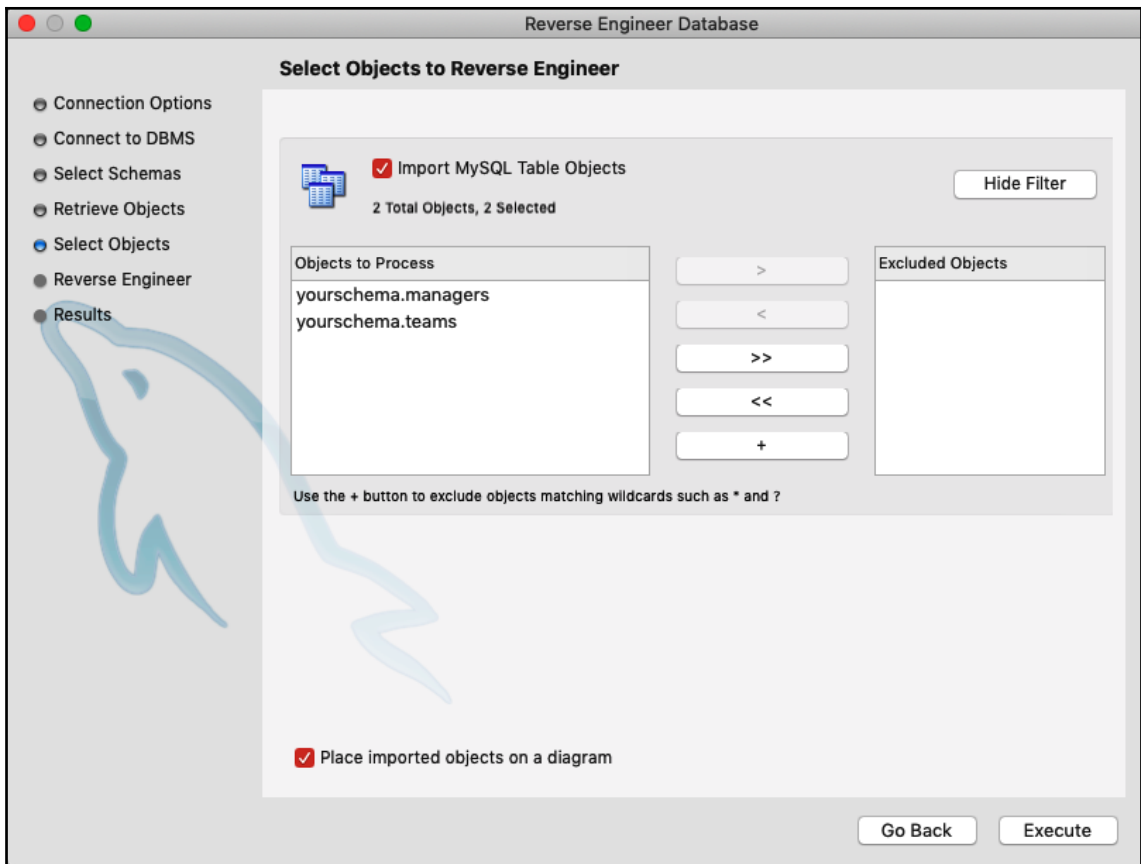
Go Back

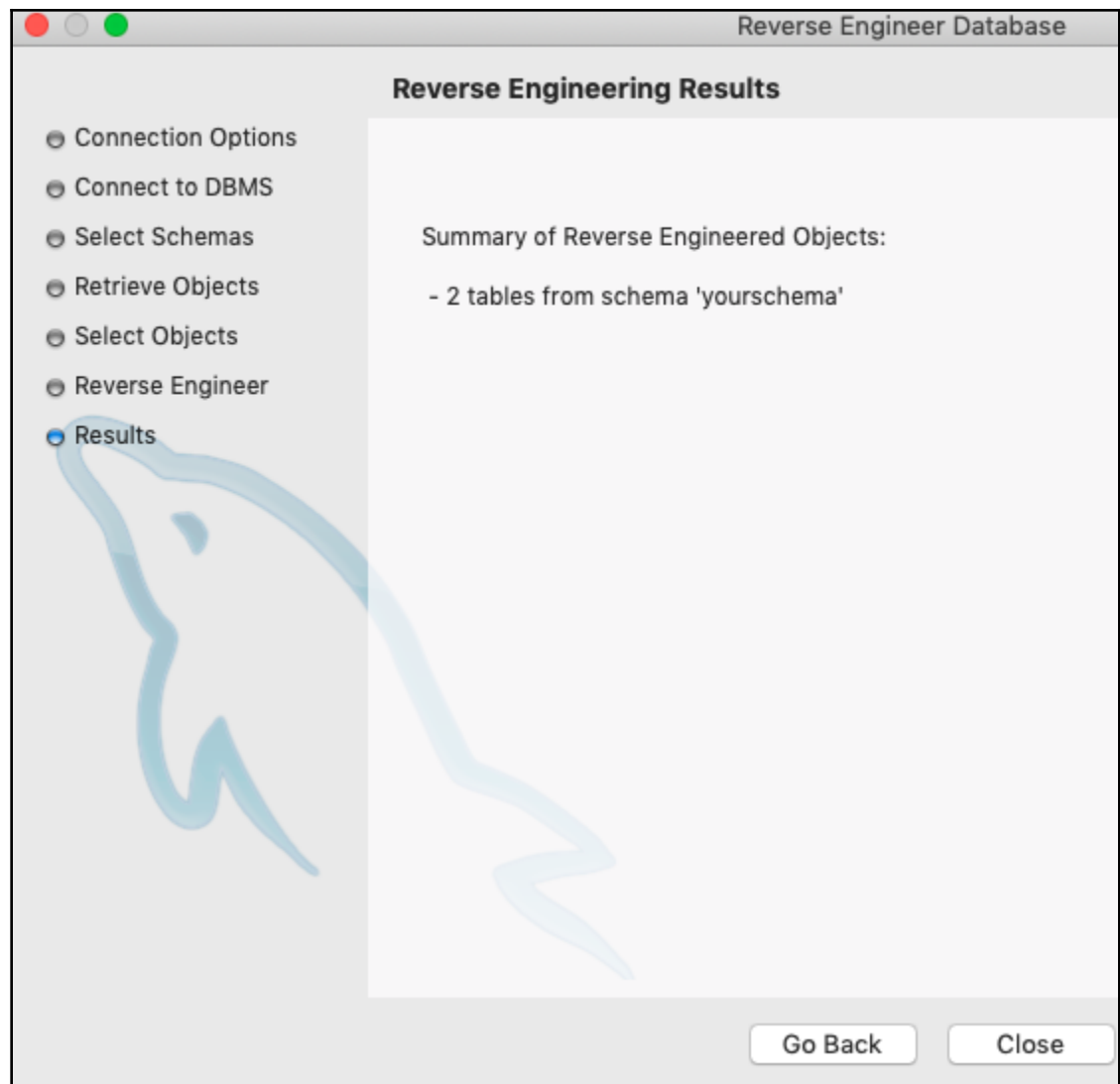
Continue

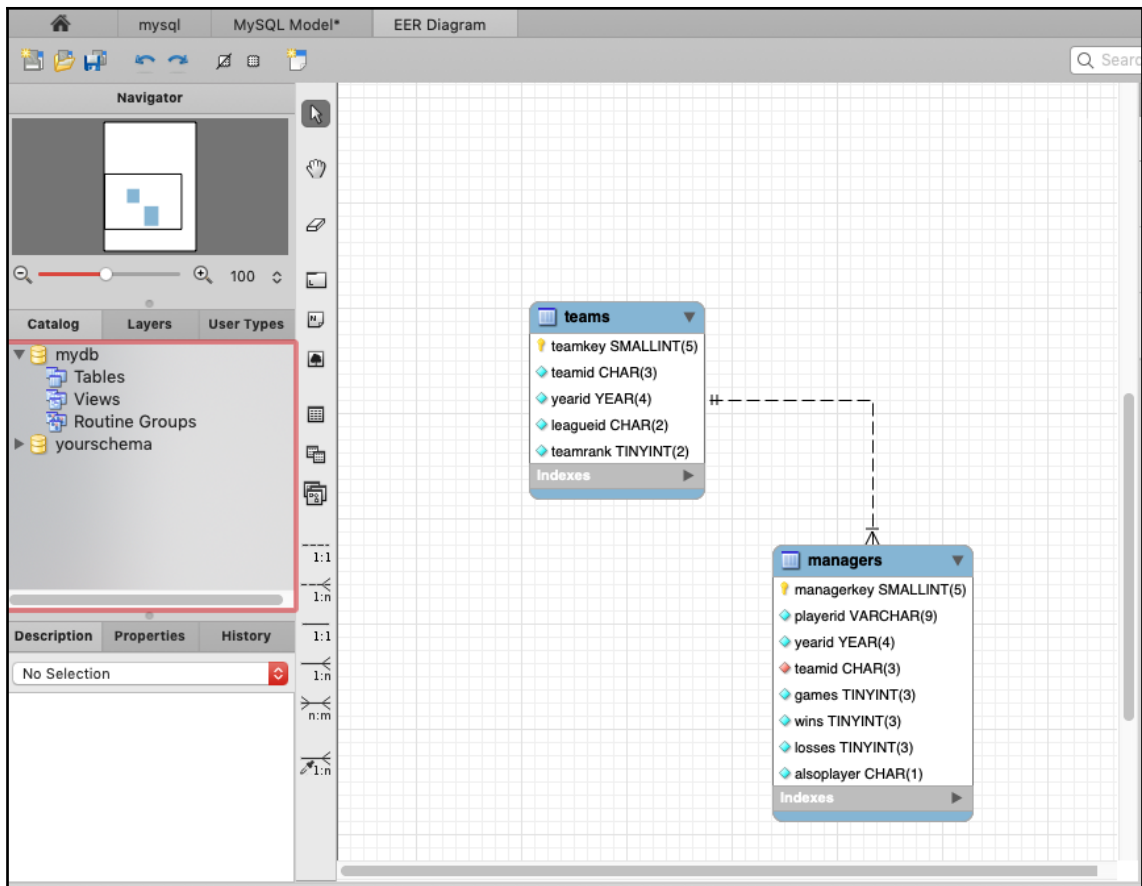
[47]





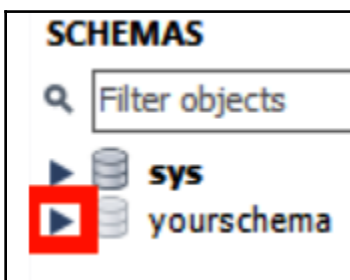
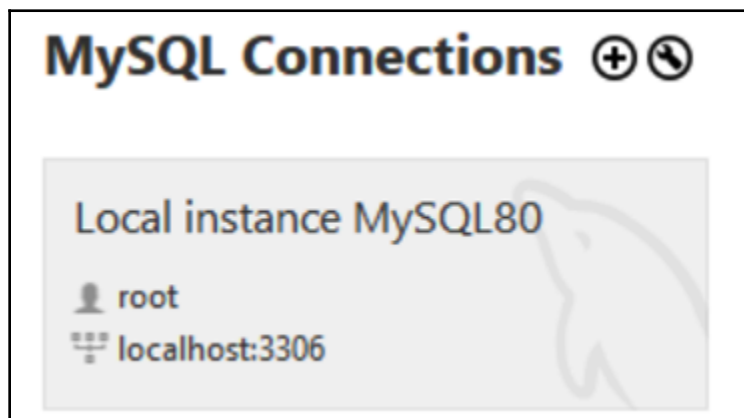


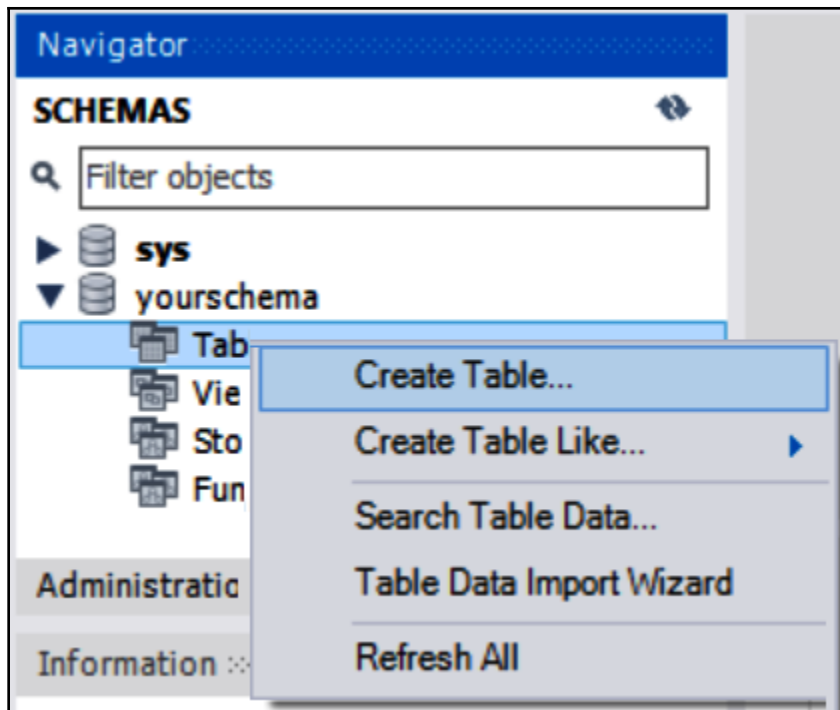




playerID	yearID	teamID	lgID	inseason	G	W	L	rank	plyrMgr
wrighha01	1871	BS1	NA	1	31	20	10	3	Y
woodji01	1871	CH1	NA	1	28	19	9	2	Y
paborch01	1871	CL1	NA	1	29	10	19	8	Y
lennobi01	1871	FW1	NA	1	14	5	9	8	Y
deaneha01	1871	FW1	NA	2	5	2	3	8	Y
fergubo01	1871	NY2	NA	1	33	16	17	5	Y
mcbri01	1871	PH1	NA	1	28	21	7	1	Y
hastisc01	1871	RC1	NA	1	25	4	21	9	Y
pikeli01	1871	TRO	NA	1	4	1	3	6	Y

yearID	lgID	teamID	franchID	divID	Rank	G	Ghome	W	L
1871	NA	BS1	BNA		3	31		20	10
1871	NA	CH1	CNA		2	28		19	9
1871	NA	CL1	CFC		8	29		10	19
1871	NA	FW1	KEK		7	19		7	12
1871	NA	NY2	NNA		5	33		16	17
1871	NA	PH1	PNA		1	28		21	7
1871	NA	RC1	ROK		9	25		4	21
1871	NA	TRO	TRO		6	29		13	15
1871	NA	WS3	OLY		4	32		15	15





managers - Table teams - Table **teams - Table** SQL File 5*

Table Name: Schema: **yourschema**

Charset/Collation: Engine:

Comments:

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
teamkey	SMALLINT(5)	☒	☒	☒	☐	☐	☐	☒	☐	
teamid	CHAR(3)	☐	☒	☐	☐	☐	☐	☐	☐	
yearid	YEAR(4)	☐	☒	☐	☐	☐	☐	☐	☐	
leagueid	CHAR(2)	☐	☒	☐	☐	☐	☐	☐	☐	
teamrank	TINYINT(2)	☐	☒	☐	☐	☐	☐	☐	☐	

Column Name: Data Type:

Charset/Collation: Default Coll:

Comments:

Storage: ☐ Virtual ☐ Stored

☐ Primary Key ☒ Not Null ☐ Unique

☐ Binary ☐ Unsigned ☐ Zero Fill

☐ Auto Increment ☐ Generated

Columns Indexes Foreign Keys Triggers Partitioning Options

managers - Table teams - Table

Table Name: Schema: **yourschema**

Charset/Collation: Engine:

Comments:

Index Name	Type
PRIMARY	PRIMARY
teamkey_UNIQUE	UNIQUE
teamid_yearid_leagueid_UNIQUE	INDEX

Column	#	Order	Length
☐ teamkey		ASC	
☒ teamid	1	ASC	
☒ yearid	2	ASC	
☒ leagueid	3	ASC	
☐ rank		ASC	

Index Options

Storage Type:

Key Block Size:

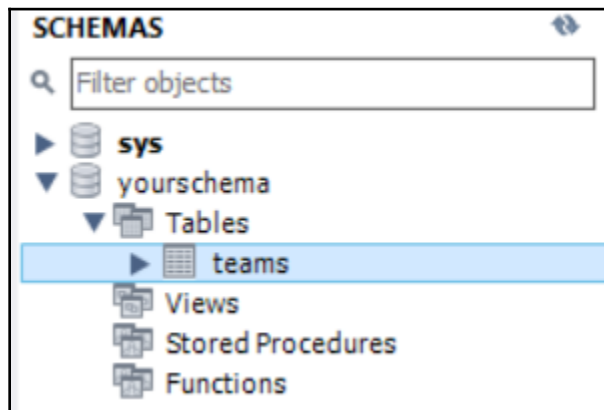
Parser:

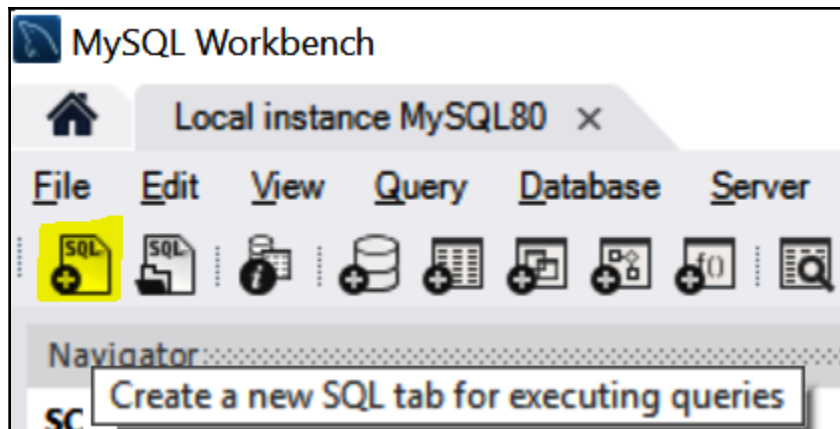
Visible: ☐

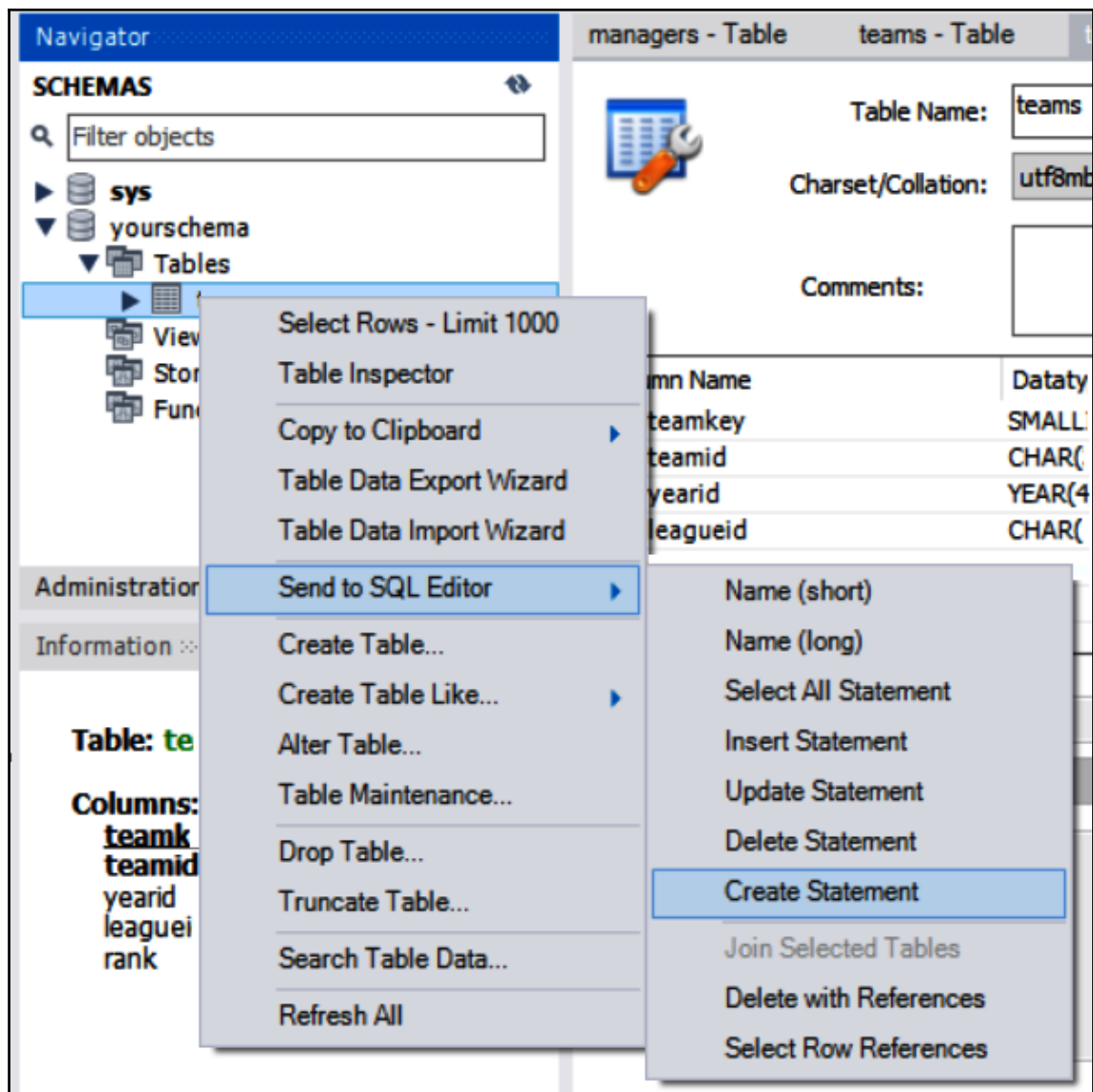
Index Comment:

Columns Indexes Foreign Keys Triggers Partitioning Options

Apply Revert







```
CREATE TABLE `teams` (
  `teamkey` smallint(5) NOT NULL AUTO_INCREMENT,
  `teamid` char(3) NOT NULL,
  `yearid` year(4) NOT NULL,
  `leagueid` char(2) NOT NULL,
  `teamrank` tinyint(2) NOT NULL,
  PRIMARY KEY (`teamkey`),
  UNIQUE KEY `teamkey_UNIQUE` (`teamkey`),
  KEY `teamid_yearid_leagueid_UNIQUE` (`teamid`,`yearid`,`leagueid`) /*!80000 INVISIBLE */,
  CONSTRAINT `check_teamrank` CHECK (((`teamrank` >= 0) and (`teamrank` <= 12))),
  CONSTRAINT `check_year` CHECK (((`yearid` >= 1871) and (`yearid` <= 2155)))
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

managers - Table SQL File 9*

Table Name: Schema: **yourschema**

Charset/Collation: Engine:

Comments:

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
managerkey	SMALLINT(5)	☒	☒	☒	☐	☐	☐	☒	☐	
playerid	VARCHAR(9)	☐	☒	☐	☐	☐	☐	☐	☐	
yearid	YEAR	☐	☒	☐	☐	☐	☐	☐	☐	
teamid	CHAR(3)	☐	☒	☐	☐	☐	☐	☐	☐	
games	TINYINT(3)	☐	☒	☐	☐	☐	☐	☐	☐	
wins	TINYINT(3)	☐	☒	☐	☐	☐	☐	☐	☐	
losses	TINYINT(3)	☐	☒	☐	☐	☐	☐	☐	☐	
alsoplayer	CHAR(1)	☐	☒	☐	☐	☐	☐	☐	☐	

Column Name: Data Type:

Charset/Collation:

Comments:

Default:

Storage: ☒ Virtual ☐ Stored

☒ Primary Key ☒ Not Null ☒ Unique

☐ Binary ☐ Unsigned ☐ Zero Fill

☒ Auto Increment ☐ Generated

Columns Indexes Foreign Keys Triggers Partitioning Options

Apply Revert

managers - Table
SQL File 9*

Table Name:
Schema: **yourschema**

Charset/Collation:

Engine:

Comments:

Index Name	Type
PRIMARY	PRIMARY
managerkey_UNIQUE	UNIQUE
playerid_yearid_teamid_UNIQUE	UNIQUE

Index Columns

Column	#	Order	Length
☐ managerkey		ASC	
☒ playerid	1	ASC	
☒ yearid	2	ASC	
☒ teamid	3	ASC	
☐ games		ASC	
☐ wins		ASC	
☐ losses		ASC	
☐ alsoplayer		ASC	

Index Options

Storage Type:

Key Block Size:

Parser:

Visible: ☐

Index Comment:

Columns
Indexes
Foreign Keys
Triggers
Partitioning
Options

Apply

Revert

managers - Table
SQL File 9*

Table Name:
Schema: **yourschema**

Charset/Collation:

Engine:

Comments:

Foreign Key Name	Referenced Table
FK_teamid	'yourschema'. 'teams'

Column	Referenced Column
☐ managerkey	
☐ playerid	
☐ yearid	
☒ teamid	teamid
☐ games	
☐ wins	
☐ losses	
☐ alsoplayer	

Foreign Key Options

On Update:

On Delete:

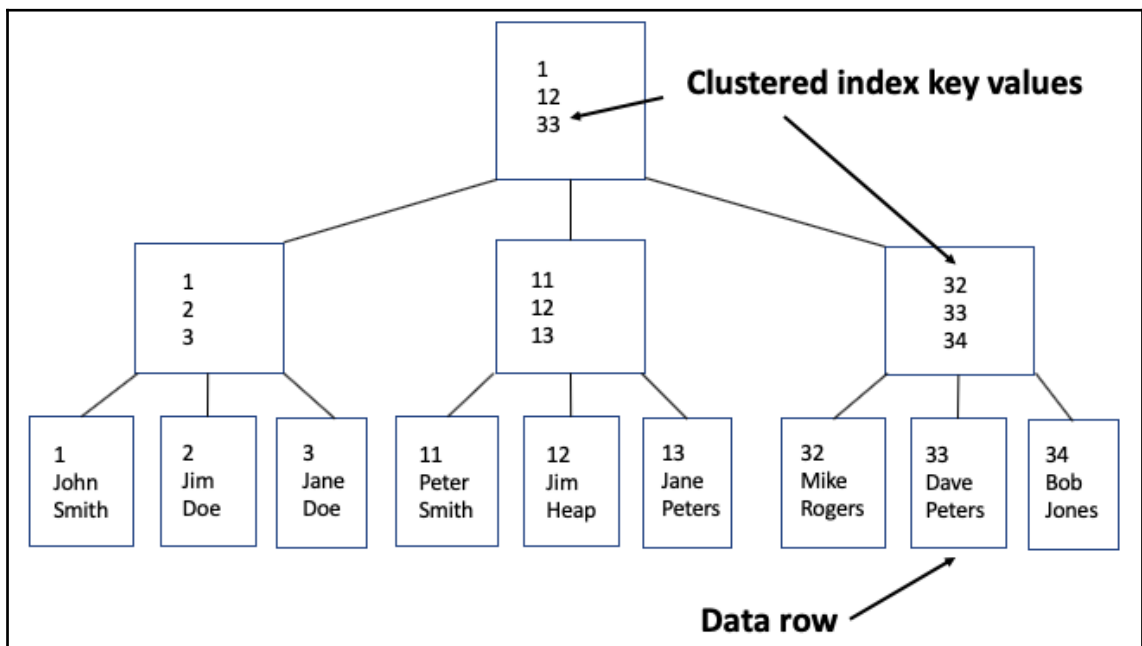
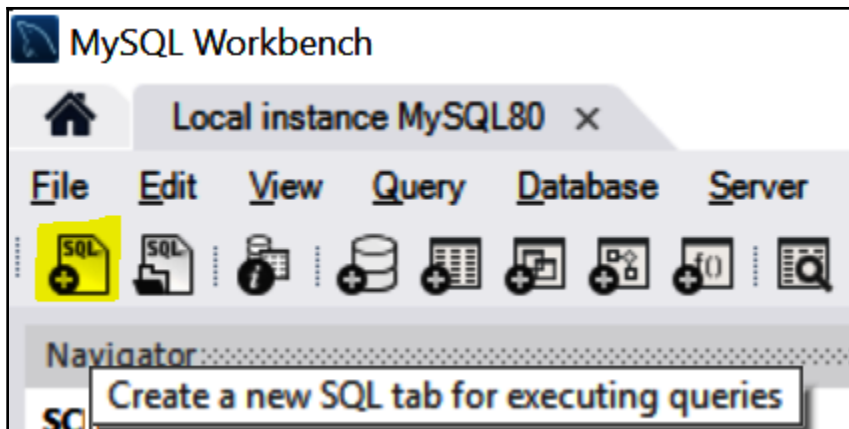
☐ Skip in SQL generation

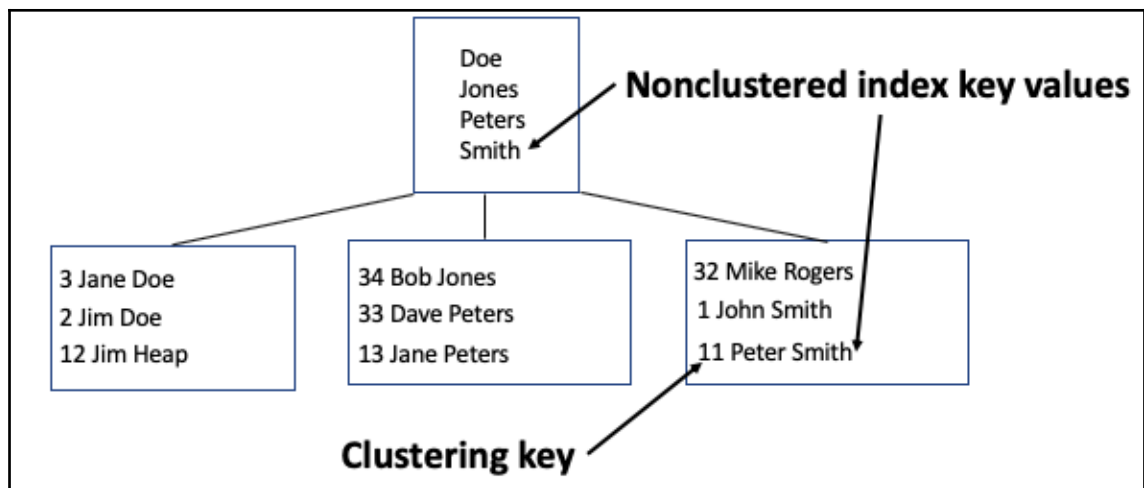
Foreign Key Comment:

Columns
Indexes
Foreign Keys
Triggers
Partitioning
Options

Apply

Revert





▼	managers
▶	Columns
▼	Indexes
▶	PRIMARY
▶	managerkey_UNIQUE
▶	playerid_yearid_teamid_UNIQUE
▶	FK_teamid_idx

Chapter 5: Importing and Exporting Data

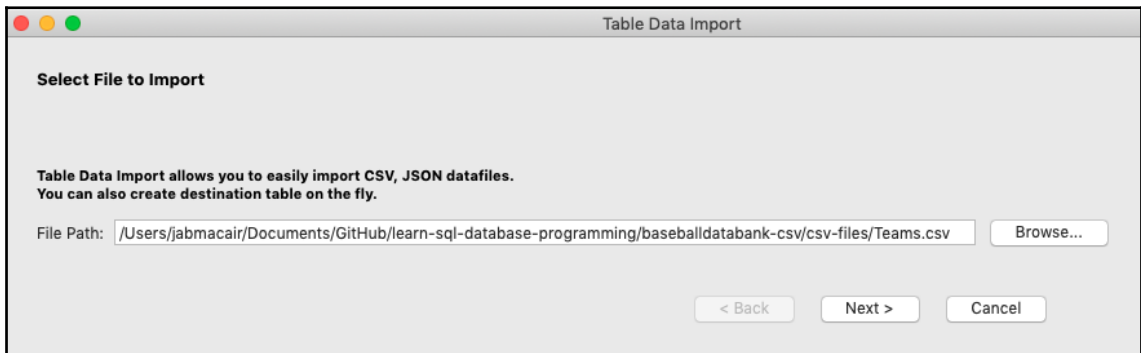
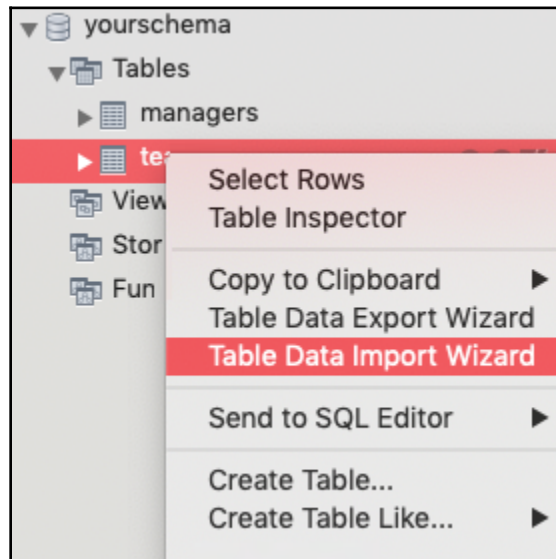


Table Data Import

Select Destination

Select destination table and additional options.

☒ Use existing table:

yourschema.teams

☐ Create new table:

yourschema

.

Teams

☐ Truncate table before import

< Back

Next >

Cancel

Table Data Import

Select Destination

Select destination table and additional options.

☐ Use existing table:

yourschema.managers

☒ Create new table:

yourschema

.

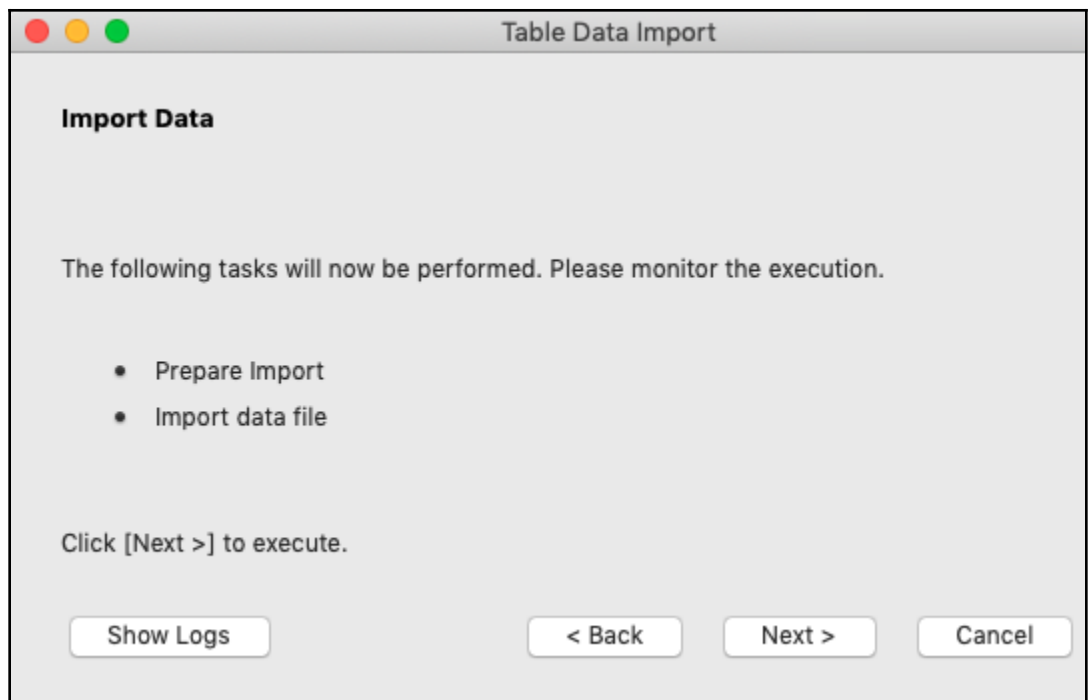
teams

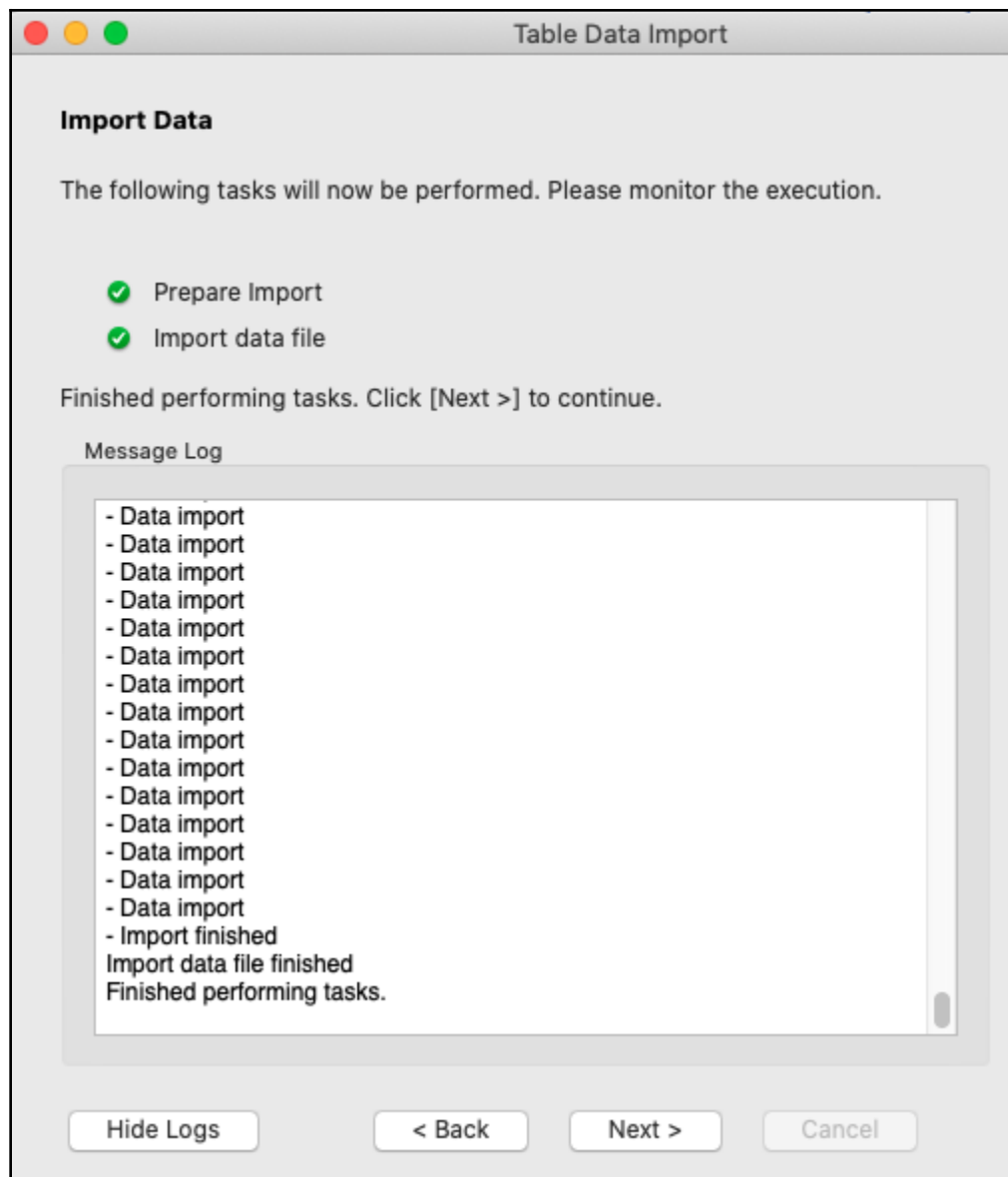
☐ Drop table if exists

< Back

Next >

Cancel





Don't Limit					
1 • <code>SELECT * FROM yourschema.teams;</code>					
100% 32:1					
Result Grid Filter Rows: Search Edit:					
	teamkey	teamid	yearid	leagueid	teamrank
▶ 1	BLA	1901	AL	5	
2	BOS	1901	AL	2	
3	BRO	1901	NL	3	
4	BSN	1901	NL	5	
5	CHA	1901	AL	1	
6	CHN	1901	NL	6	
7	CIN	1901	NL	8	
8	CLE	1901	AL	7	
9	DET	1901	AL	3	
10	MLA	1901	AL	8	
11	NY1	1901	NL	7	
12	PHA	1901	AL	4	
teams 1					

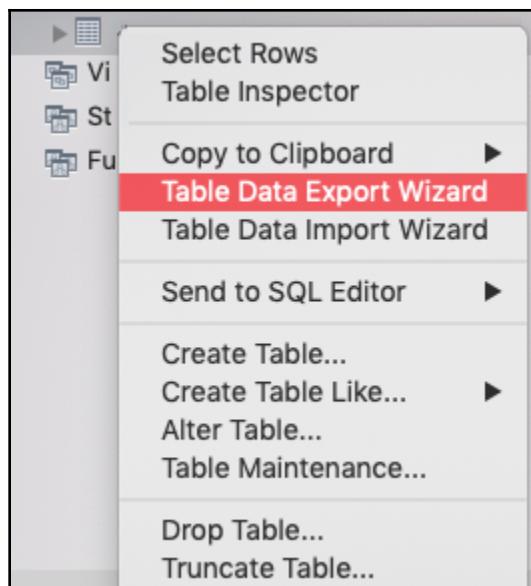


Table Data Export

Select data for export

Select source table for export:

Select columns you'd like to export

Export	Column name
☒	teamkey
☒	teamid
☒	yearid
☒	leagueid
☒	teamrank

☒ Select / Deselect all entries

Row Offset: Count:

Advanced >>

Next >

Cancel

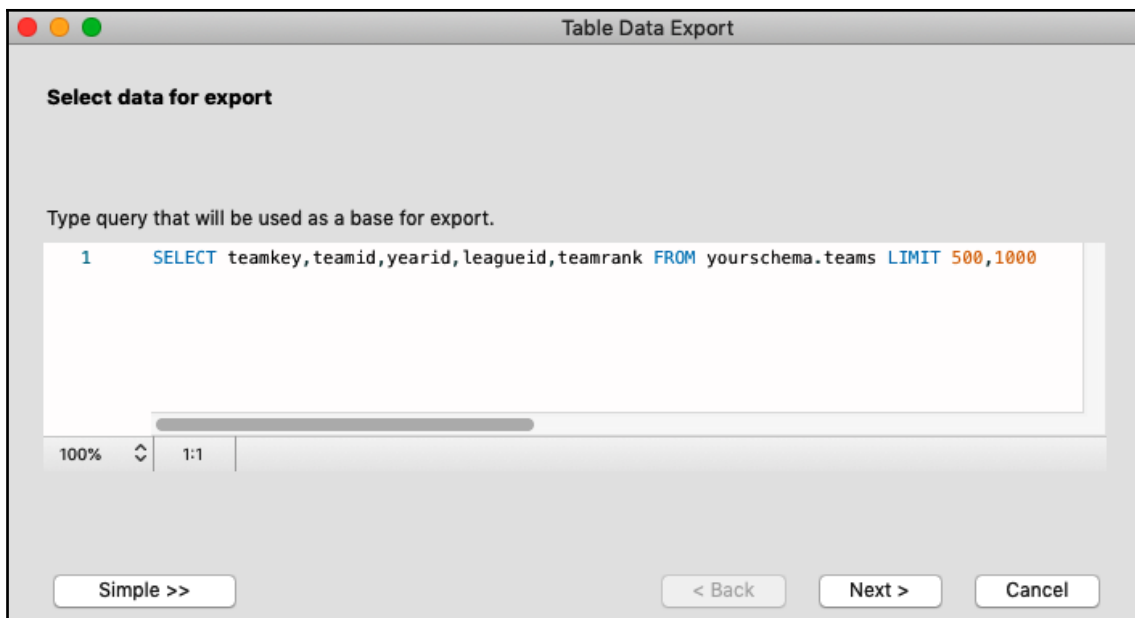


Table Data Export

Select output file location

Table Data Export allows you to easily export data into CSV, JSON datafiles.

File Path:

☒ csv ☐ json

Options:

Line Separator

LF

Enclose Strings in

"

Field Separator

;

null and NULL word as SQL keyword

YES

☒ Export to local machine
If checked, rows will be exported on the location that started Workbench.
If not checked, rows will be exported on the server.
If server and computer that started Workbench are different machines, import of that file can be done manual way only.

[72]

teams-export						
Home Insert Page Layout Formulas Data Revi						
A1	teamkey;"teamid";"yearid";"leagueid";					
	A	B	C	D	E	F
1	teamkey;"teamid";"yearid";"leagueid";"teamrank"					
2	501;"CHN";"1931";"NL";3					
3	502;"CIN";"1931";"NL";8					
4	503;"CLE";"1931";"AL";4					
5	504;"DET";"1931";"AL";7					
6	505;"NY1";"1931";"NL";2					
7	506;"NYA";"1931";"AL";2					
8	507;"PHA";"1931";"AL";1					
9	508;"PHI";"1931";"NL";6					
10	509;"PIT";"1931";"NL";5					
11	510;"SLA";"1931";"AL";5					
12	511;"SLN";"1931";"NL";1					
13	512;"WS1";"1931";"AL";3					
14	513;"BOS";"1932";"AL";8					
15	514;"BRO";"1932";"NL";3					
16	515;"BSN";"1932";"NL";5					
17	516;"CHA";"1932";"AL";7					
18	517;"CHN";"1932";"NL";1					
19	518;"CIN";"1932";"NL";8					

```
teams.json
[{"teamkey":501, "yearID":1908, "lgID":"NL", "teamID":"CIN", "Rank":5},
{"teamkey":502, "yearID":1908, "lgID":"AL", "teamID":"CLE", "Rank":2},
{"teamkey":503, "yearID":1908, "lgID":"AL", "teamID":"DET", "Rank":1},
{"teamkey":504, "yearID":1908, "lgID":"NL", "teamID":"NY1", "Rank":2},
{"teamkey":505, "yearID":1908, "lgID":"AL", "teamID":"NYA", "Rank":8},
{"teamkey":506, "yearID":1908, "lgID":"AL", "teamID":"PHA", "Rank":6},
{"teamkey":507, "yearID":1908, "lgID":"NL", "teamID":"PHI", "Rank":4},
{"teamkey":508, "yearID":1908, "lgID":"NL", "teamID":"PIT", "Rank":2},
{"teamkey":509, "yearID":1908, "lgID":"AL", "teamID":"SLA", "Rank":4},
{"teamkey":510, "yearID":1908, "lgID":"NL", "teamID":"SLN", "Rank":8},
{"teamkey":511, "yearID":1908, "lgID":"AL", "teamID":"WS1", "Rank":7},
{"teamkey":512, "yearID":1909, "lgID":"AL", "teamID":"BOS", "Rank":3},
{"teamkey":513, "yearID":1909, "lgID":"NL", "teamID":"BRO", "Rank":6},
{"teamkey":514, "yearID":1909, "lgID":"NL", "teamID":"BSN", "Rank":8},
{"teamkey":515, "yearID":1909, "lgID":"AL", "teamID":"CHA", "Rank":4},
{"teamkey":516, "yearID":1909, "lgID":"NL", "teamID":"CHN", "Rank":2},
{"teamkey":517, "yearID":1909, "lgID":"NL", "teamID":"CIN", "Rank":4},
{"teamkey":518, "yearID":1909, "lgID":"AL", "teamID":"CLE", "Rank":6},
{"teamkey":519, "yearID":1909, "lgID":"AL", "teamID":"DET", "Rank":1},
{"teamkey":520, "yearID":1909, "lgID":"NL", "teamID":"NY1", "Rank":3},
```

Table Data Export allows you to easily export data into CSV, JSON datafiles.

File Path:

☒ csv ☐ json

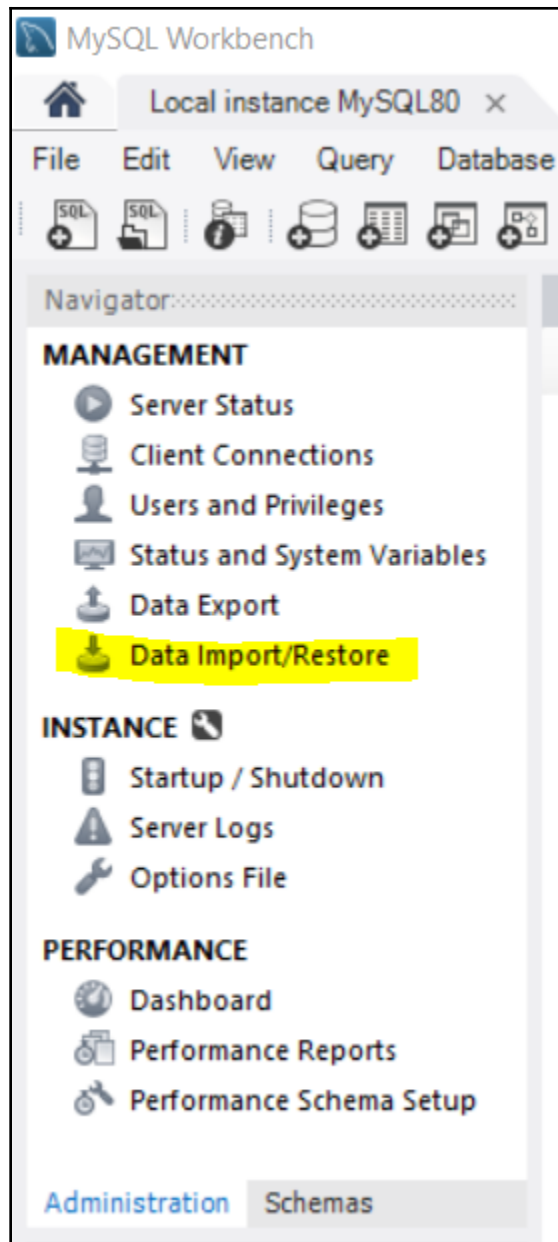
Options:

Line Separator

Enclose Strings in

Field Separator

null and NULL word as SQL keyword





nuc
Data Import

Import from Disk

Import Progress

Import Options

☒ Import from Dump Project Folder

/Users/ Documents/mysql-dump-export

...

Load Folder Contents

☐ Import from Self-Contained File

/Users/jabmacair/dumps/export.sql

...

Select the SQL/dump file to import. Please note that the whole file will be imported.

Default Schema to be Imported To

Default Target Schema:

⌵

New...

The default schema to import the dump into.
NOTE: this is only used if the dump file doesn't contain its schema, otherwise it is ignored.

Select Database Objects to Import (only available for Project Folders)

Import	Schema
✓	 yourschema

Import	Schema Objects
✓	 managers
✓	 teams

2 tables selected

Dump Structure and Data

⌵

Select Views

Select Tables

Unselect All

Press [Start Import] to start...

Start Import

[76]

Query 1Administration - Data Import/Restore

 **Data Import**

Import from DiskImport Progress

Import Options

☒ Import from Dump Project Folder

/Users/jabmacair/Documents/mysql-dump-export...

...

Select the Dump Project Folder to Import. You can do a selective restore.

Load Folder Contents

☐ Import from Self-Contained File

/Users/jabmacair/dumps/export.sql

...

Select the SQL/dump file to Import. Please note that the whole file will be Imported.

Default Schema to be Imported To

Default Target Schema: newschema

New...

The default schema to Import the dump into.
NOTE: this is only used if the dump file doesn't contain its schema, otherwise it is ignored.

Select Database Objects to Import (only available for Project Folders)

Import	Schema
☒	 yourschema

2 tables selected

Import	Schema Objects
☒	 managers
☒	 teams

Dump Structure and Data

Select Views

Select Tables

Unselect All

Import Completed

Start Import

Select Database Objects to Import (only available for Project Folders)

Import	Schema
☒	 yourschema

1 tables/views selected

Import	Schema Objects
☒	 managers
☐	 teams

Dump Structure Only

Select Views

Select Tables

Unselect All

Select Database Objects to Import (only available for Project Folders)

Import Schema

☒  yourschema

Import Schema Objects

☒  managers

☐  teams

1 tables/views selected

Dump Data Only

Select Views

Select Tables

Unselect All

Import from Disk

Import Progress

Import Options

☐ Import from Dump Project Folder

/Users/ Documents/mysql-dump-export

Select the Dump Project Folder to import. You can do a selective restore.

Load Folder Contents

☒ Import from Self-Contained File

/Users/ dumps/export.sql

Select the SQL/dump file to import. Please note that the whole file will be imported.

Default Schema to be Imported To

Default Target Schema:

New...

The default schema to import the dump into.
NOTE: this is only used if the dump file doesn't contain its schema, otherwise it is ignored.

Select Database Objects to Import (only available for Project Folders)

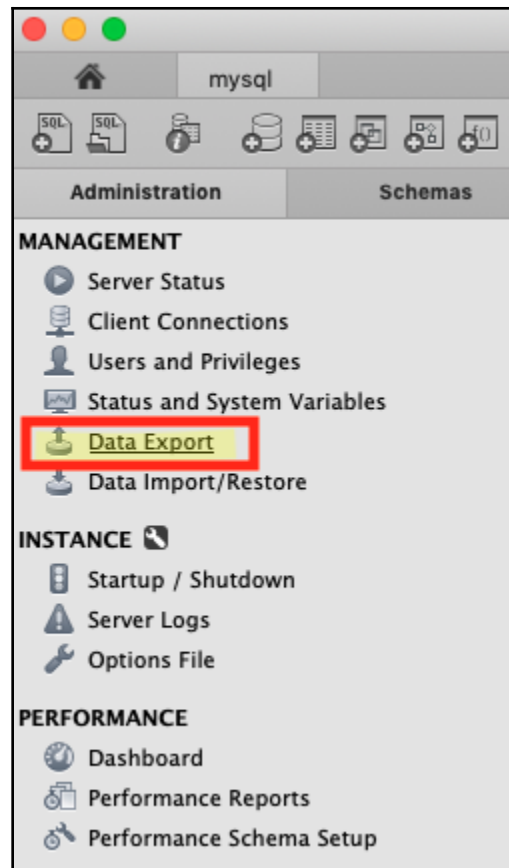
Import Schema

☒  yourschema

Import Schema Objects

☒  managers

☐  teams



Query 4

Administration - Data Export

mysql

Data Export

Advanced Options...

Object Selection

Export Progress

Tables to Export

Export	Schema
☐	lahmansbaseballdb
☐	sys
☒	yourschema

Refresh2 tables selectedDump Structure and DataSelect ViewsSelect TablesUnselect All

Export	Schema Objects
☒	managers
☒	teams

Objects to Export

☐ Dump Stored Procedures and Functions☐ Dump Events☐ Dump Triggers

Export Options

☒ Export to Dump Project Folder

/Users/mac/Documents/mysql-dump-export

...

☐ Export to Self-Contained File

/Users/jabmacair/dumps/Dump20191110.sql

...

All selected database objects will be exported into a single, self-contained file.

☐ Create Dump in a Single Transaction (self-contained file only)☐ Include Create Schema

Press [Start Export] to start...

Start Export

Query 4

Administration - Data Export

mysql

Data Export

Advanced Options...

Object Selection

Export Progress

Export Completed

Status:

2 of 2 exported.

Log:

17:28:19 Dumping yourschema (managers)

Running: /Applications/MySQLWorkbench.app/Contents/MacOS/mysqldump --defaults-file="/var/folders/mq/whjft5s6y53fl503k818qt80000gn/T/impABBC11/extraparams.cnf" --user=root --host=localhost --protocol=tcp --port=3306 --default-character-set=utf8 --skip-triggers "yourschema" "managers"

17:28:19 Dumping yourschema (teams)

Running: /Applications/MySQLWorkbench.app/Contents/MacOS/mysqldump --defaults-file="/var/folders/mq/whjft5s6y53fl503k818qt80000gn/T/impQZSXA/extraparams.cnf" --user=root --host=localhost --protocol=tcp --port=3306 --default-character-set=utf8 --skip-triggers "yourschema" "teams"

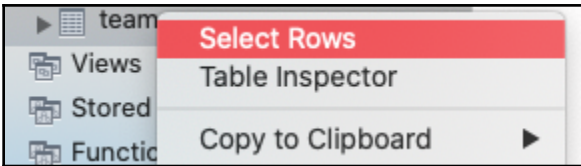
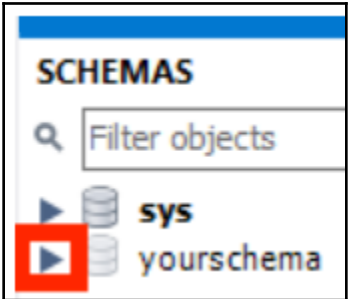
17:28:20 Export of /Users/jabmacair/Documents/mysql-dump-export has finished

Stop

Export Again

mysql-dump-export

Name	Date Modified	Size
yourschema_managers.sql	Today at 5:28 PM	3 KB
yourschema_teams.sql	Today at 5:28 PM	64 KB



Query 4 teams

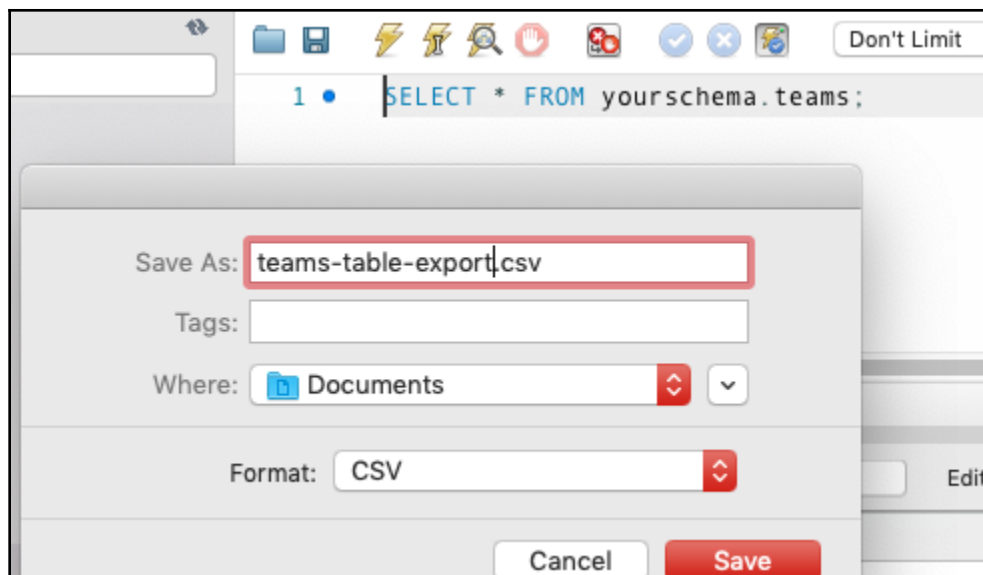
1 • `SELECT * FROM yourschema.teams;`

100% 1:1

Result Grid Filter Rows: Search Edit: Export/Import: Fetch rows:

Export recordset to an external file

teamkey	teamid	yearid	leagueid	teamrank
1	BLA	1901	AL	5
2	BOS	1901	AL	2
3	BRO	1901	NL	3
4	BSN	1901	NL	5
5	CHA	1901	AL	1
6	CHN	1901	NL	6
7	CIN	1901	NL	8



teamkey	teamid	yearid	leagueid	teamrank
1	BLA	1901	AL	5
2	BOS	1901	AL	2
3	BRO	1901	NL	3
4	BSN	1901	NL	5
5	CHA	1901	AL	1
6	CHN	1901	NL	6
7	CIN	1901	NL	8
8	CLE	1901	AL	7
9	DET	1901	AL	3
10	MLA	1901	AL	8
11	NY1	1901	NL	7
12	PHA	1901	AL	4
13	PHI	1901	NL	2

teams-export						
Home Insert Page Layout Formulas Data Review						
A1	teamkey;"teamid";"yearid";"leagueid";"					
	A	B	C	D	E	F
1	teamkey;"teamid";"yearid";"leagueid";"teamrank"					
2	501;"CHN";"1931";"NL";3					
3	502;"CIN";"1931";"NL";8					
4	503;"CLE";"1931";"AL";4					
5	504;"DET";"1931";"AL";7					
6	505;"NY1";"1931";"NL";2					
7	506;"NYA";"1931";"AL";2					
8	507;"PHA";"1931";"AL";1					
9	508;"PHI";"1931";"NL";6					
10	509;"PIT";"1931";"NL";5					
11	510;"SLA";"1931";"AL";5					
12	511;"SLN";"1931";"NL";1					
13	512;"WS1";"1931";"AL";3					
14	513;"BOS";"1932";"AL";8					
15	514;"BRO";"1932";"NL";3					
16	515;"BSN";"1932";"NL";5					
17	516;"CHA";"1932";"AL";7					
18	517;"CHN";"1932";"NL";1					
19	518;"CIN";"1932";"NL";8					

Chapter 6: Querying a Single Table

appearances

1 • SELECT * FROM lahmanbaseballdb.appearances;

100% 45:1

Result Grid Filter Rows: Search Edit: Export/Import: Fetch rows:

yearID	teamID	lgID	playerID	G_all	GS	G_batting	G_defense	G_p	G_c	G_1b	G_2b	G_3b	G_ss	G_lf	G_cf	G_rf	G_of	G_dh	G_ph	G_pr
1871	BS1	NA	barnero01	31	31	31	31	0	0	0	16	0	15	0	0	0	0	0	0	0
1871	BS1	NA	barrofr01	18	17	18	18	0	0	0	1	0	0	13	0	4	17	0	0	0
1871	BS1	NA	birdsda01	29	29	29	29	0	7	0	0	0	0	0	0	27	27	0	0	0
1871	BS1	NA	conefr01	19	18	19	19	0	0	0	0	0	0	18	0	1	19	0	0	0
1871	BS1	NA	gouldch01	31	31	31	31	0	0	30	0	0	0	0	0	1	1	0	0	0
1871	BS1	NA	jackssa01	16	15	16	16	0	0	0	14	0	1	0	1	0	1	0	0	0

appearances 2 Apply Revert

Action Output

	Time	Action	Response	Duration / Fetch Time
1	09:14:05	SELECT * FROM lahmanbaseballdb.appearances	105789 row(s) returned	0.0013 sec / 0.329 sec

Query 3 appearances

1 • SELECT playerid FROM lahmanbaseballdb.appearances;

100% 16:1

Result Grid Filter Rows: Search Export: Fetch rows:

playerid
birdsda01
conefr01
gouldch01
jackssa01
mcveyca01
schafha01

appearances 2 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
1	09:28:47	SELECT playerid FROM lahmanbaseballdb.appearances	105789 row(s) returned	0.0012 sec / 0.074 sec

The screenshot shows the DBeaver SQL editor with a query executed against the 'appearances' table. The query is:

```
1 • USE lahmanbaseballdb;
2 SELECT playerid, g_all, g_batting, g_defense FROM appearances
3 LIMIT 500;
```

The Result Grid displays the following data:

playerid	g_all	g_batting	g_defense
birdsda01	29	29	29
conefr01	19	19	19
gouldch01	31	31	31
jackssa01	16	16	16
mcveyca01	29	29	29
schafha01	31	31	31
spaldal01	31	31	31
...	...	...	...

The bottom of the screenshot shows the Action Output panel with the following log:

	Time	Action	Response	Duration / Fetch Time
✓ 1	10:57:42	USE lahmanbaseballdb	0 row(s) affected	0.00033 sec
✓ 2	10:57:42	SELECT playerid, g_all, g_batting, g_defense FROM appearances LIMIT 500	500 row(s) returned	0.0010 sec / 0.00019...

Query 3 appearances

Don't Limit

```
1 • USE lahmanbaseballdb;
2 • SELECT playerid, g_all, g_batting, g_defense FROM appearances
3 • LIMIT 500 OFFSET 1000;
```

100% 24:3

Result Grid Filter Rows: Search Export:

playerid	g_all	g_batting	g_defense
nelsoa01	19	19	NULL
nolanth01	38	38	NULL
questjo01	62	62	NULL
shaffor01	63	63	NULL
warnefr01	43	43	NULL
willine01	63	63	NULL
bennech01	49	49	NULL
blissfr01	2	2	NULL

appearances 15 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
✓ 1	11:00:16	USE lahmanbaseballdb	0 row(s) affected	0.00054 sec
✓ 2	11:00:16	SELECT playerid, g_all, g_batting, g_defense FROM appearances LIMIT 500 OFFSET 1000	500 row(s) returned	0.0026 sec / 0.0003...

Query 3 appearances

Don't

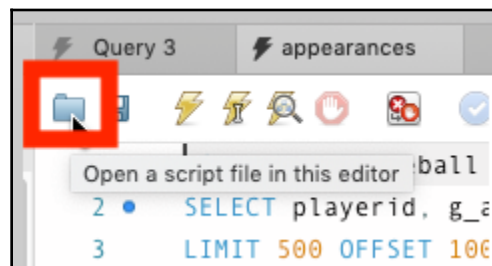
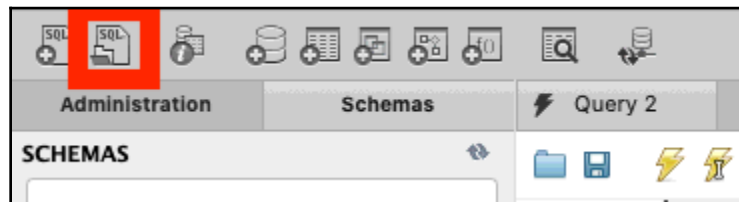
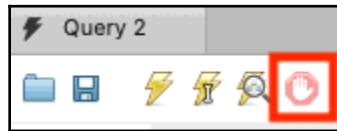
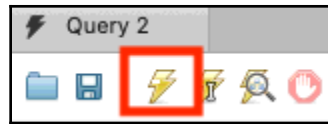
```
1 • USE lahmanbaseballdb;
2 • SELECT playerid, g_all, g_batting,
3 • LIMIT 500 OFFSET 1000;
```

Save As: appearances.sql

Tags:

Where: Documents

Cancel Save



playerid	g_all	g_batting	g_defense
barnero01	31	31	31
barrofr01	18	18	18
birdsda01	29	29	29
conefr01	19	19	19
gouldch01	31	31	31
jackssa01	16	16	16
mcveyca01	29	29	29
schafha01	31	31	31
spaldal01	31	31	31
wrighge01	16	16	16
wrighha01	31	31	31
brannmi01	3	3	3

playerid	g_all	g_batting	g_defense
addybo01	25	25	25
ansonca01	25	25	25
abercda01	1	1	1
allisdo01	27	27	27
allisan01	19	19	19
allisbi01	5	5	5
allisdo01	16	16	16
allisar01	19	19	19
allenha01	16	16	16
arnolbi01	2	2	2
ansonca01	46	46	46
allisdo01	23	23	23

```

1  USE lahmanbaseballdb;
2  • SELECT playerid, g_all, g_batting, g_defense
3  FROM appearances
4  WHERE playerid LIKE '%a'; |

```

100%



27:4

Result Grid



Filter Rows:

Search

Export:



playerid	g_all	g_batting	g_defense

playerid	g_all	g_batting	g_defense
birdsda01	29	29	29
jackssa01	16	16	16
mcveyca01	29	29	29
schafha01	31	31	31
spaldal01	31	31	31
wrighha01	31	31	31
branmni01	3	3	3
kingma01	20	20	20
mcatebu01	26	26	26
treacr01	25	25	25
allisar01	29	29	29
bassjo01	22	22	22

playerid	yearid	teamid	round	pos
aaronha01	1969	ATL	NLCS	RF
aasedo01	1979	CAL	ALCS	P
abbotgl01	1975	OAK	ALCS	P
abbotku01	1997	FLO	NLCS	2B
abbotku01	2000	NYN	NLCS	SS
abbotpa01	2000	SEA	ALCS	P
abbotpa01	2001	SEA	ALCS	P
abreubo01	2009	LAA	ALCS	RF
aceveal01	2009	NYA	ALCS	P

playerid	yearid	teamid	round	pos
aaronha01	1957	ML1	WS	CF
aaronha01	1958	ML1	WS	CF
aaronha01	1958	ML1	WS	RF
abbotku01	2000	NYN	WS	SS
abstebi01	1909	PIT	WS	1B
aceveal01	2009	NYA	WS	P
adairje01	1967	BOS	WS	2B
adamsba01	1909	PIT	WS	P
adamsba01	1925	PIT	WS	P
adamsma01	2013	SLN	WS	1B

playerid	yearid	teamid	round	pos
aasedo01	1979	CAL	ALCS	P
abadfe01	2014	OAK	ALWC	P
abbotgl01	1975	OAK	ALCS	P
abbotpa01	2000	SEA	ALCS	P
abbotpa01	2001	SEA	ALCS	P
abreubo01	2009	LAA	ALCS	RF
aceveal01	2009	NYA	ALCS	P

playerid	yearid	teamid	round	pos
abbotje01	2000	CHA	ALDS2	CF
abbotku01	1997	FLO	NLDS1	2B
abbotku01	2000	NYN	NLDS2	SS
abbotpa01	2000	SEA	ALDS2	P
abbotpa01	2001	SEA	ALDS1	P
abreubo01	2006	NYA	ALDS1	RF
abreubo01	2007	NYA	ALDS2	RF
abreubo01	2009	LAA	ALDS2	RF
aceveal01	2009	NYA	ALDS1	P
acunaro01	2018	ATL	NLDS2	LF
adamsma01	2013	SLN	NLDS1	1B

playerid	g_all	g_batting	g_defense
barrebi01	1	1	NULL
brainas01	16	16	NULL
careyto01	56	56	NULL
cravebi01	41	41	NULL
cummica01	42	42	NULL
forceda01	49	49	NULL
hallge01	35	35	NULL
hastisc01	30	30	NULL
mcveyca01	38	38	NULL
millsev01	54	54	NULL

playerid	g_all	g_batting	g_defense
barnero01	31	31	31
barrofr01	18	18	18
birdsda01	29	29	29
conefr01	19	19	19
gouldch01	31	31	31
jackssa01	16	16	16
mcveyca01	29	29	29
schafha01	31	31	31
spaldal01	31	31	31
wrighge01	16	16	16

playerid	g_all	g_batting	g_defense
parnebo01	1	1	1
anderbr05	1	1	0
lindbjo01	1	0	1
nerishe01	1	1	1
ambrihe01	1	1	1
bucknbi02	1	1	1
beavabl01	1	0	1
pryorst01	1	0	1
dunnija01	1	1	1

playerid	g_all	g_batting	g_defense
willsma01	165	165	165
paganjo01	164	164	164
santoro01	164	164	164
willibi01	164	164	164
tovarce01	164	164	163
robinbr01	163	163	163
cardele01	163	163	163
wagnele01	163	163	163
bankser01	163	163	162
bufordo01	163	163	162

playerid	g_all	g_batting	g_defense
aardsda01	1	0	1
aardsda01	11	11	11
aardsda01	25	2	25
aardsda01	33	30	33
aardsda01	43	41	43
aardsda01	45	43	45
aardsda01	47	5	47
aardsda01	53	4	53
aardsda01	73	3	73
aaronha01	85	85	1
aaronha01	112	112	89
aaronha01	120	120	105

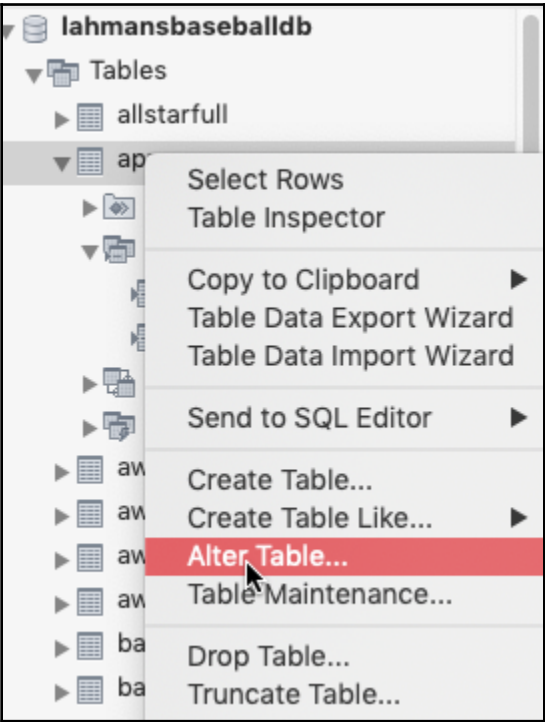
playerid	g_all	g_batting	g_defense
zychto01	45	4	45
zychto01	13	0	13
zychto01	12	0	12
zwilldu01	154	154	154
zwilldu01	150	150	149
zwilldu01	35	35	9
zwilldu01	28	28	28
zuverge01	62	62	62
zuverge01	56	56	56
zuverge01	45	45	45
zuverge01	35	35	35

playerid	g_all	g_batting	g_defense
zychto01	45	4	45
zychto01	13	0	13
zychto01	12	0	12
zwilldu01	154	154	154
zwilldu01	150	150	149
zwilldu01	35	35	9
zwilldu01	28	28	28
zuverge01	62	62	62
zuverge01	56	56	56
zuverge01	45	45	45
zuverge01	35	35	35

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	ALL	NULL	NULL	NULL	NULL	105113	100.00	NULL

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	ALL	NULL	NULL	NULL	NULL	105113	11.11	Using where; Using temporary; Using filesort

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	index	PRIMARY	PRIMARY	54	NULL	105113	11.11	Using where; Using index; Using temporary; Using filesort



appearances

appearances - Table

Name: appearances

Schema: lahmanbaseballdb

Index	Type
PRIMARY	PRIMARY
<click to edit>	

Index details "

Index Columns	#	Order	Length
☐ yearID		ASC	
☐ teamID		ASC	
☐ lgID		ASC	
☐ playerID		ASC	
☐ G_all		ASC	
☐ GS		ASC	
☐ G_batting		ASC	
☐ G_defense		ASC	
☐ G_p		ASC	
☐ G_c		ASC	
☐ G_1b		ASC	
☐ G_2b		ASC	
☐ G_3b		ASC	
☐ G_ss		ASC	
☐ G_if		ASC	

Storage Type:

Key Block Size:

Parser:

Visibility: ☒

Comments:

Columns

Indexes

Foreign Keys

Triggers

Partitioning

Options

Apply

Revert

appearances

appearances - Table

Name: appearances

Schema: lahmanbaseballdb

Index	Type
PRIMARY	PRIMARY
NC_playerid_g_cols	INDEX
<click to edit>	

Index details "NC_playerid_g_cols"

Index Columns	#	Order	Length
☐ yearID		ASC	
☐ teamID		ASC	
☐ lgID		ASC	
☒ playerID	1	ASC	
☒ G_all	2	ASC	
☐ GS		ASC	
☒ G_batting	3	ASC	
☒ G_defense	4	ASC	
☐ G_p		ASC	
☐ G_c		ASC	
☐ G_1b		ASC	
☐ G_2b		ASC	
☐ G_3b		ASC	
☐ G_ss		ASC	
☐ G_if		ASC	

Storage Type:

Key Block Size: 0

Parser:

Visibility: ☒

Comments:

Columns

Indexes

Foreign Keys

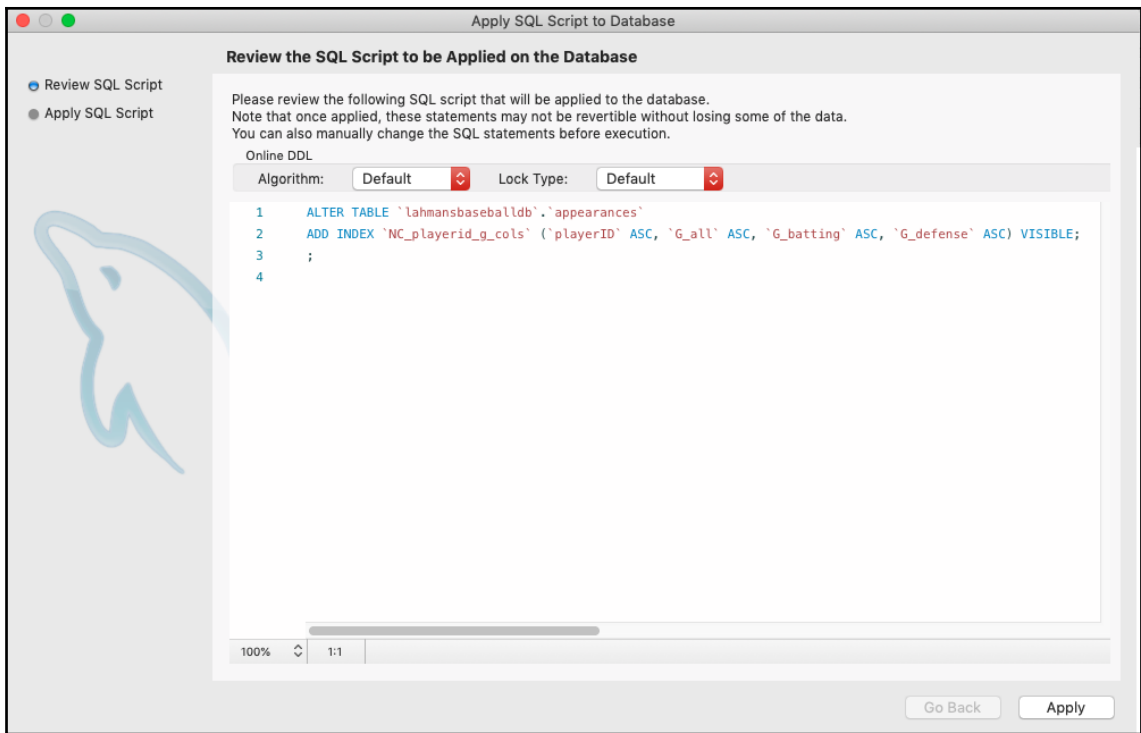
Triggers

Partitioning

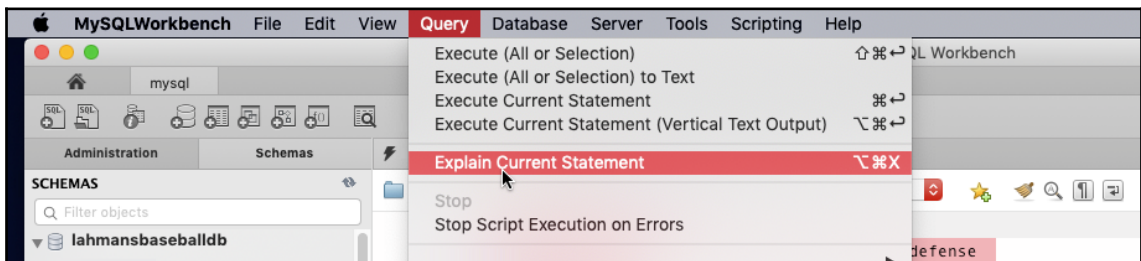
Options

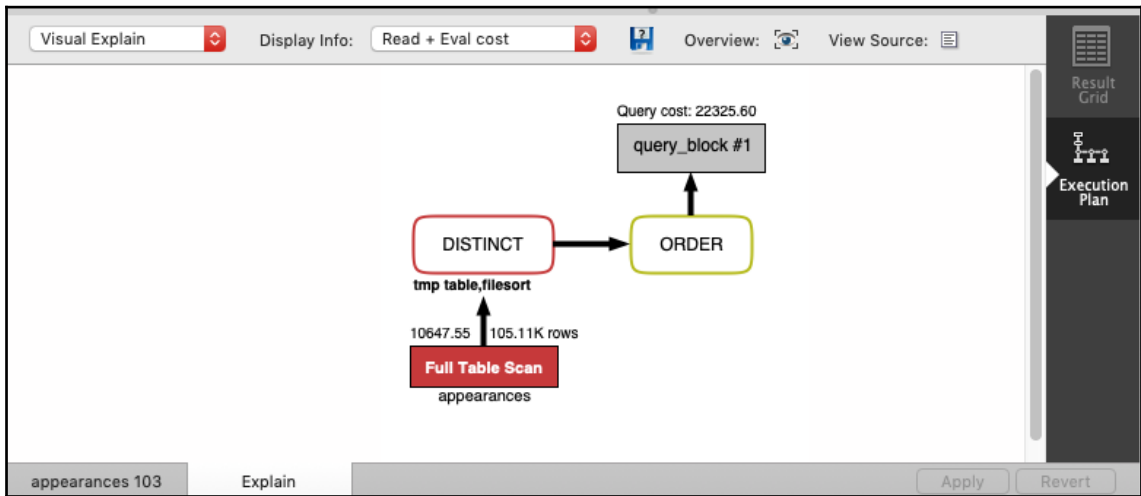
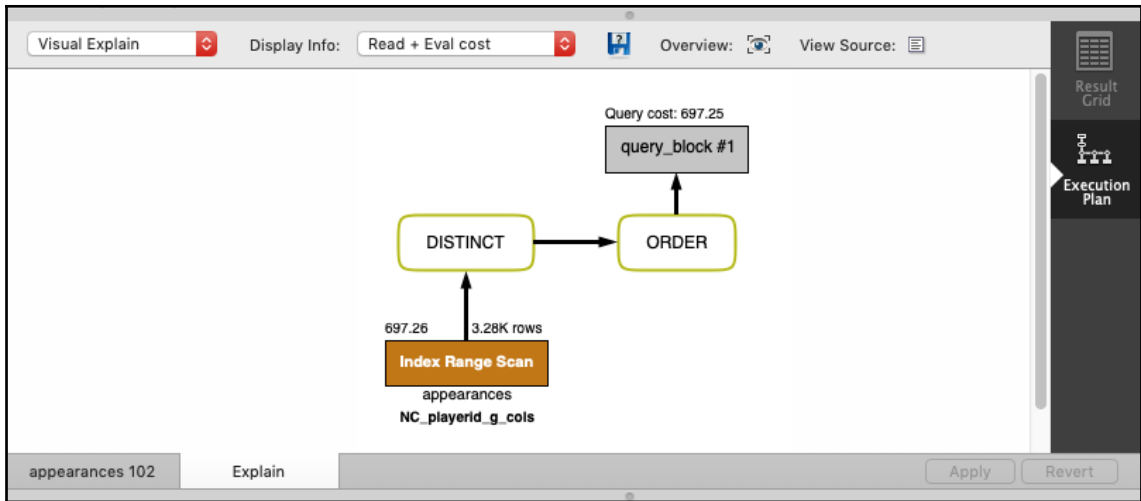
Apply

Revert

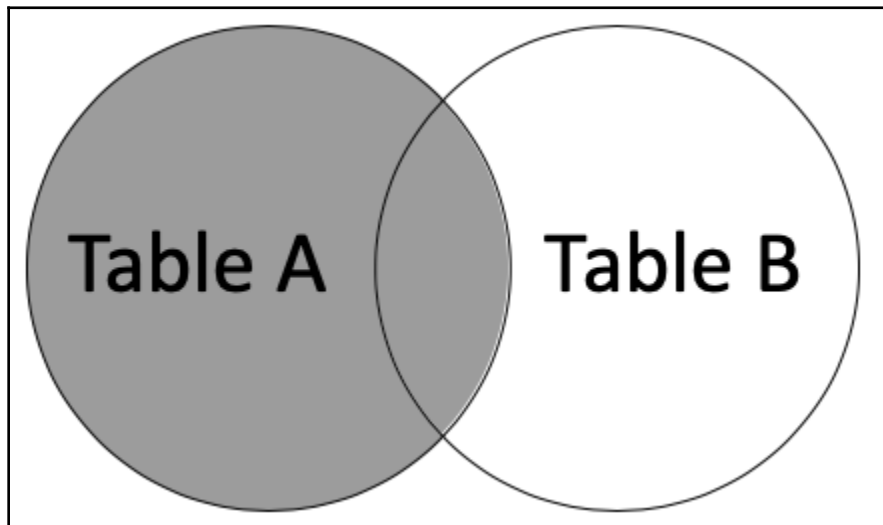
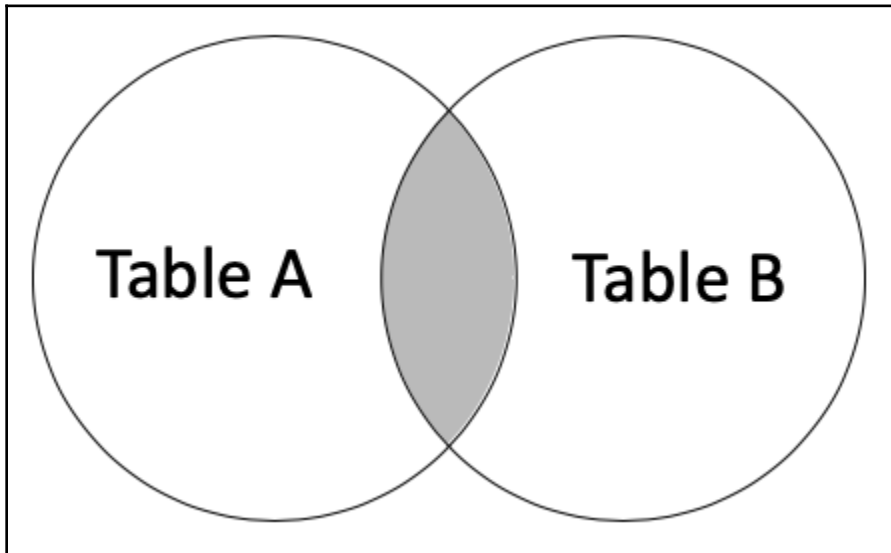


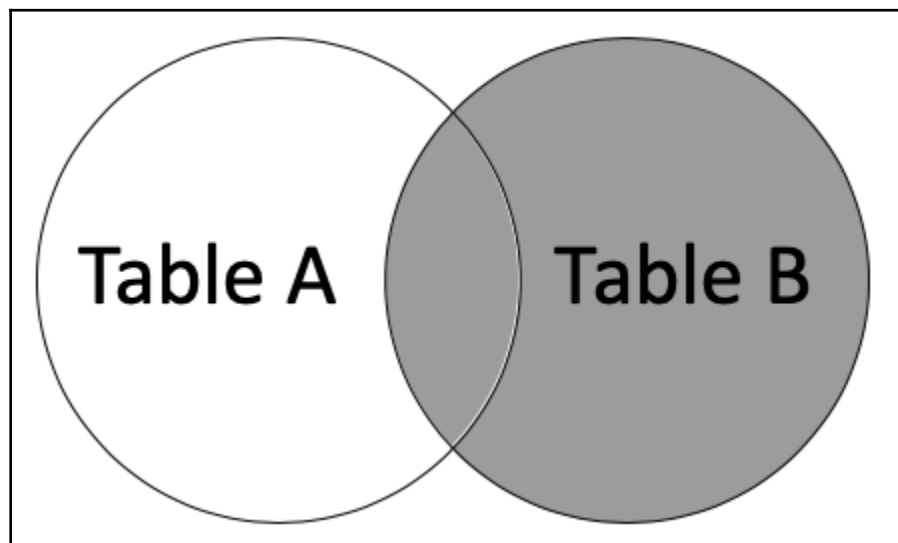
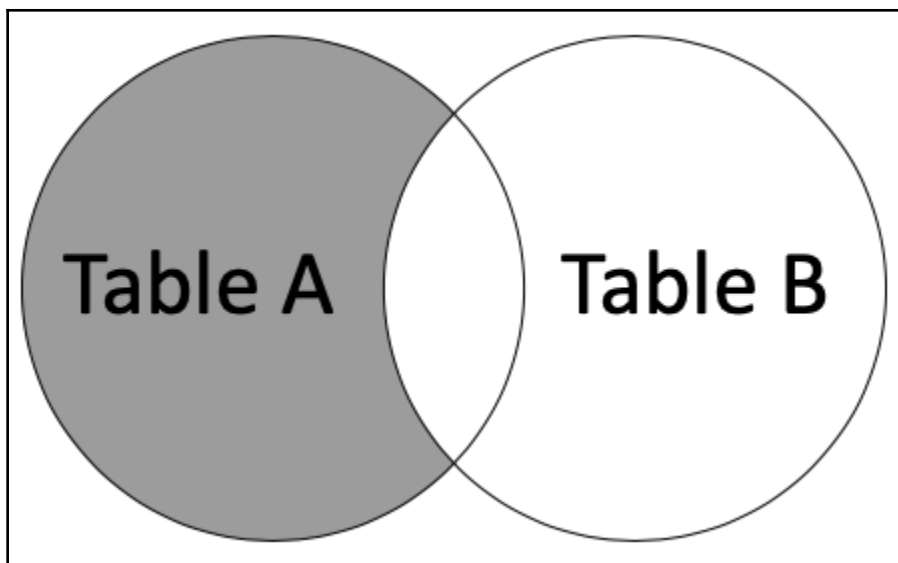
id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	range	NC_playerid_g_cols	NC_playerid_g_cols	38	NULL	3282	100.00	Using where; Using index

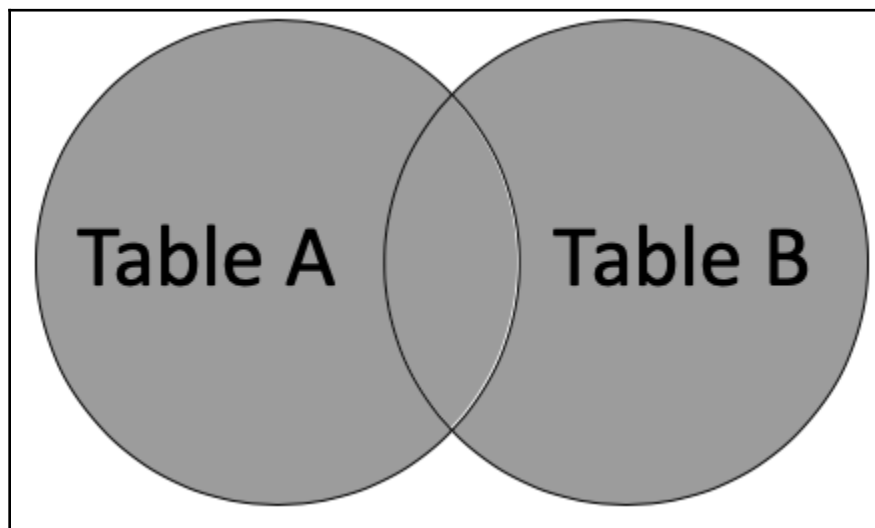
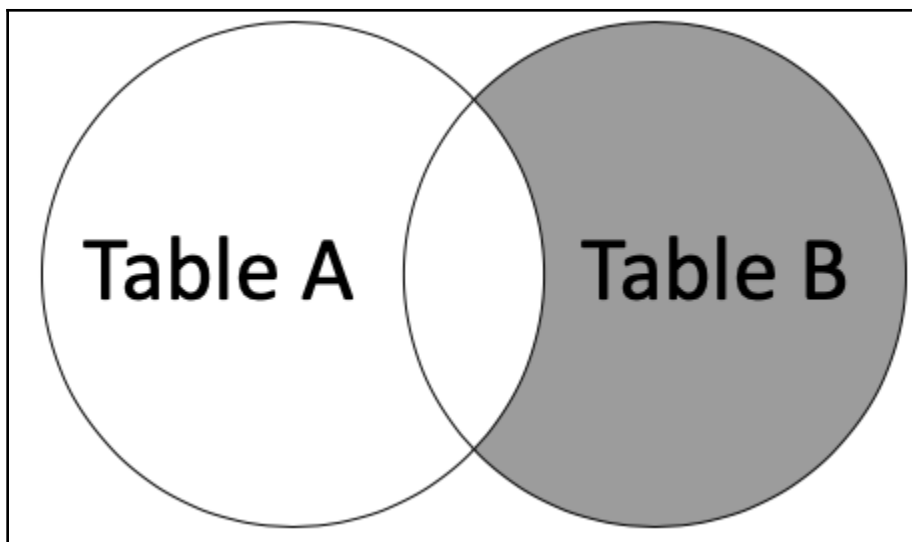




Chapter 7: Querying Multiple Tables

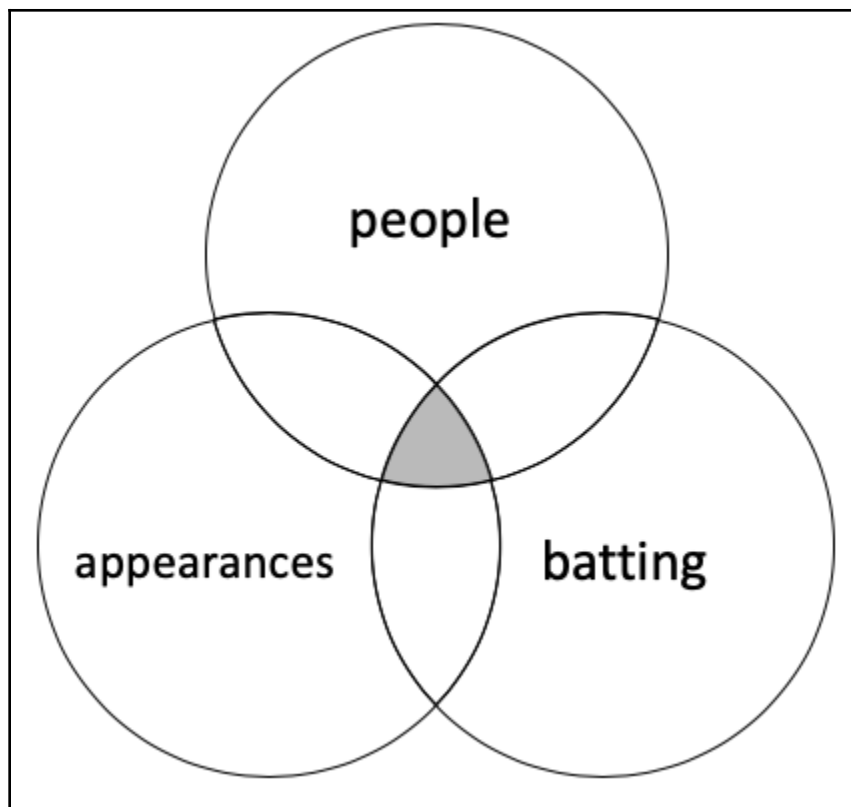






playerid	birthyear	yearid	teamid	G_batting	
abadfe01	1985	2017	BOS	4	
abreujo02	1987	2017	CHA	156	
adamecr01	1991	2017	COL	12	
adamsau02	1991	2017	WAS	6	
adamsla01	1989	2017	ATL	85	
adamsma01	1988	2017	ATL	100	
adamsma01	1988	2017	SLN	31	
adducji02	1985	2017	DET	29	

playerid	birthyear	yearid	teamid	G_defense	H
abreujo02	1987	2014	CHA	109	189
abreujo02	1987	2015	CHA	115	189
abreujo02	1987	2016	CHA	152	189
abreujo02	1987	2017	CHA	139	189
abreujo02	1987	2018	CHA	114	189
adamsla01	1989	2014	KCA	2	30
adamsla01	1989	2017	ATL	41	30
adamsla01	1989	2018	ATL	8	30



playerid	birthyear	schoolid	yearid
wotero01	1985	unc	2007
wotero01	1985	unc	2008
worthda01	1985	pepperdi...	2005
worthda01	1985	pepperdi...	2006
worthda01	1985	pepperdi...	2007
zawadla01	1985	sandiegost	2004
zawadla01	1985	sandiegost	2005
zawadla01	1985	sandiegost	2006
abadfe01	1985	NULL	NULL
abreju01	1985	NULL	NULL
adducji02	1985	NULL	NULL
ascanjo01	1985	NULL	NULL
atilalu01	1985	NULL	NULL
atkinmi01	1985	NULL	NULL

playerid	birthyear	schoolid	yearid	gameid
cassebo01	1985	NULL	NULL	NULL
castrfa01	1985	NULL	NULL	NULL
cespeyo01	1985	NULL	2014	ALS201407150
cespeyo01	1985	NULL	2016	ALS201607120
chenwe02	1985	NULL	NULL	NULL
ciriape01	1985	NULL	NULL	NULL
clipty01	1985	NULL	2011	NLS201107120
clipty01	1985	NULL	2014	ALS201407150
danksjo01	1985	NULL	NULL	NULL
daviswa01	1985	NULL	2015	NLS201507140
daviswa01	1985	NULL	2016	ALS201607120

playerid	birthyear	schoolid	yearid
abadfe01	1985	NULL	NULL
abreju01	1985	NULL	NULL
adducji02	1985	NULL	NULL
ascanjo01	1985	NULL	NULL
atilalu01	1985	NULL	NULL
atkinmi01	1985	NULL	NULL
bartoda02	1985	NULL	NULL
bastaan01	1985	NULL	NULL

playerid	yearid	gameid	startingpos
aardsda01	NULL	NULL	NULL
aaronha01	1955	NLS195507120	NULL
aaronha01	1956	ALS195607100	NULL
aaronha01	1957	NLS195707090	9
aaronha01	1958	ALS195807080	9
aaronha01	1959	NLS195907070	9
aaronha01	1959	NLS195908030	9
aaronha01	1960	ALS196007110	9
aaronha01	1960	ALS196007130	9
aaronha01	1961	NLS196107110	NULL
aaronha01	1961	ALS196107310	NULL
aaronha01	1962	ALS196207100	NULL
aaronha01	1962	NLS196207300	NULL
aaronha01	1963	ALS196307090	9

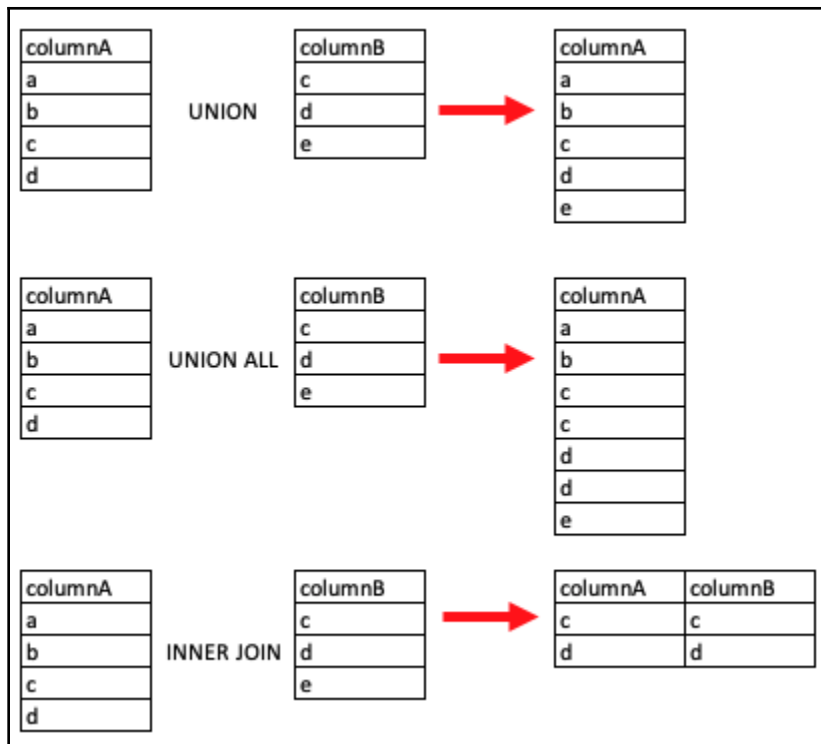
playerid	yearid	votedBy	salary
NULL	NULL	NULL	240000
NULL	NULL	NULL	483333
NULL	NULL	NULL	779227
NULL	NULL	NULL	1075000
NULL	NULL	NULL	325000
NULL	NULL	NULL	365000
boonebo01	1995	BBWAA	883000
boonebo01	1996	BBWAA	883000
boonebo01	1997	BBWAA	883000
boonebo01	2001	BBWAA	883000
boonebo01	2002	BBWAA	883000
boonebo01	2003	BBWAA	883000
boonebo01	1995	BBWAA	883000
boonebo01	1996	BBWAA	883000

playerid	yearid	gameid	startingpos
aardsda01	NULL	NULL	NULL
aaronto01	NULL	NULL	NULL
abadan01	NULL	NULL	NULL
abadfe01	NULL	NULL	NULL
abadijo01	NULL	NULL	NULL
abbated01	NULL	NULL	NULL
abbeybe01	NULL	NULL	NULL
abbeych01	NULL	NULL	NULL

ABC playerid	123 yearid	ABC gameid	123 startingpos
aguaylu01	[NULL]	[NULL]	[NULL]
aguilch01	[NULL]	[NULL]	[NULL]
aguilje01	2,018	NLS201807170	[NULL]
aguilri01	1,991	ALS199107090	[NULL]
aguilri01	1,992	NLS199207140	[NULL]
aguilri01	1,993	ALS199307130	[NULL]
aguirha01	1,962	ALS196207100	[NULL]
aguirha01	1,962	NLS196207300	[NULL]
ahearch01	[NULL]	[NULL]	[NULL]

playerid	schoolid	yearid	schoolid	city	state	country
aardsda01	pennst	2001	akron	Akron	OH	USA
aardsda01	rice	2002	akron	Akron	OH	USA
aardsda01	rice	2003	akron	Akron	OH	USA
abadan01	gamiddl	1992	akron	Akron	OH	USA
abadan01	gamiddl	1993	akron	Akron	OH	USA
abbeybe01	vermont	1889	akron	Akron	OH	USA
abbeybe01	vermont	1890	akron	Akron	OH	USA
abbeybe01	vermont	1891	akron	Akron	OH	USA
abbeybe01	vermont	1892	akron	Akron	OH	USA
abbotje01	kentucky	1991	akron	Akron	OH	USA
abbotje01	kentucky	1992	akron	Akron	OH	USA
abbotje01	kentucky	1994	akron	Akron	OH	USA
abbotji01	michigan	1986	akron	Akron	OH	USA
abbotji01	michigan	1987	akron	Akron	OH	USA
abbotji01	michigan	1988	akron	Akron	OH	USA

playerid	schoolid	yearid	schoolid	city	state	country
aardsda01	pennst	2001	pennst	State College	PA	USA
aardsda01	rice	2002	rice	Houston	TX	USA
aardsda01	rice	2003	rice	Houston	TX	USA
abadan01	gamiddl	1992	gamiddl	Cochran	GA	USA
abadan01	gamiddl	1993	gamiddl	Cochran	GA	USA
abbeybe01	vermont	1889	vermont	Burlington	VT	USA
abbeybe01	vermont	1890	vermont	Burlington	VT	USA
abbeybe01	vermont	1891	vermont	Burlington	VT	USA
abbeybe01	vermont	1892	vermont	Burlington	VT	USA
abbotje01	kentucky	1991	kentucky	Lexington	KY	USA
abbotje01	kentucky	1992	kentucky	Lexington	KY	USA
abbotje01	kentucky	1994	kentucky	Lexington	KY	USA
abbotji01	michigan	1986	michigan	Ann Arbor	MI	USA

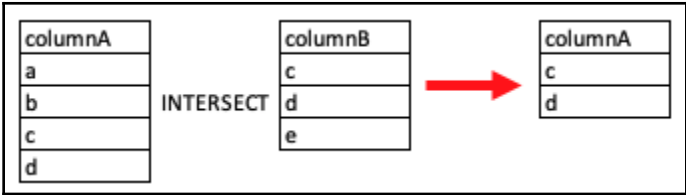


playerid	namegiven	awardid	yearid
mcgrifr01	Frederick Stanley	All-Star Game MVP	1994
aloufe01	Felipe Rojas	BBWAA Manager of the Year	1994
showabu99	William Nathaniel	BBWAA Manager of the Year	1994
smithoz01	Osborne Earl	Branch Rickey Award	1994
maddugr01	Gregory Alan	Cy Young Award	1994
coneda01	David Brian	Cy Young Award	1994
willima04	Matthew Derrick	Gold Glove	1994
whitede03	Devon Markes	Gold Glove	1994
alomaro01	Roberto	Gold Glove	1994
vizquom01	Omar Enrique	Gold Glove	1994

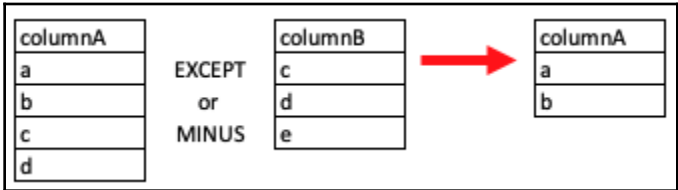
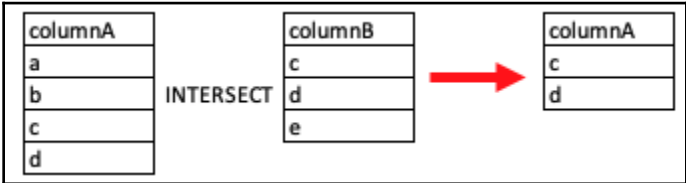
playerid	awardid	yearid	namegiven
molitpa01	Paul Leo	TSN All-Star	1994
mondera01	Raul Ramon	Rookie of the Year	1994
hamelbo01	Robert James	Rookie of the Year	1994
alomaro01	Roberto	Gold Glove	1994
beckro01	Rodney Roy	Rolands Relief Man Award	1994
pagnoto01	Thomas Alan	Gold Glove	1994
showabu99	TSN Manager...	1994	William N...
aloufe01	TSN Manager...	1994	Felipe Rojas
boggswa01	Wade Anthony	TSN All-Star	1994
boggswa01	Wade Anthony	Gold Glove	1994
boggswa01	Wade Anthony	Silver Slugger	1994
cordewi01	Wilfredo	Silver Slugger	1994

playerid	namegiven	awardid	yearid	playeridType
mcgrifr01	Frederick Stanley	All-Star Game MVP	1994	Player
aloufe01	Felipe Rojas	BBWAA Manager of the Year	1994	Manager
showabu99	William Nathaniel	BBWAA Manager of the Year	1994	Manager
smithoz01	Osborne Earl	Branch Rickey Award	1994	Player
maddugr01	Gregory Alan	Cy Young Award	1994	Player
coneda01	David Brian	Cy Young Award	1994	Player
willima04	Matthew Derrick	Gold Glove	1994	Player
whitede03	Devon Markes	Gold Glove	1994	Player
alomaro01	Roberto	Gold Glove	1994	Player
vizquom01	Omar Enrique	Gold Glove	1994	Player
bagweje01	Jeffrey Robert	Gold Glove	1994	Player

playerid	yearid	teamid	gamesbatted
acevejo01	2005	COL	36
acevejo01	2005	COL	36
adamsmi03	2005	MIL	12
adamsmi03	2005	MIL	13
adamsru01	2005	TOR	139
adamsru01	2005	TOR	139
adamste01	2005	PHI	14
adamste01	2005	PHI	16
adkinjo01	2005	CHA	0
adkinjo01	2005	CHA	5
affelje01	2005	KCA	3
affelje01	2005	KCA	49



playerid
aardsda01
aaronha01
aaronto01
aasedo01
abadan01
abadfe01
abadijo01
abbated01
abbeybe01
abbeych01
abbotda01



id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	p	NULL	ALL	NULL	NULL	NULL	NULL	19473	100.00	Using where; Using temporary; Using filesort
1	SIMPLE	b	NULL	ref	PRIMARY	PRIMARY	40	lahmansbaseballdb.p.playerID,const	1	90.00	Using where
1	SIMPLE	a	NULL	ALL	NULL	NULL	NULL	NULL	105113	10.00	Using where; Using join buffer (Block Nested Loop)

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	a	NULL	ref	PRIMARY	PRIMARY	2	const	1494	100.00	Using temporary; Using filesort
1	SIMPLE	p	NULL	ALL	NULL	NULL	NULL	NULL	19473	10.00	Using where; Using join buffer (Block Nested Loop)
1	SIMPLE	b	NULL	ref	PRIMARY	PRIMARY	38	lahmansbaseballdb.p.playerID	5	90.00	Using where

SCHEMAS

Filter objects

lahmansbaseballdb

Tables

allstarfull

appearances

Columns

Indexes

PRIMARY

Foreign Keys

Triggers

awardsmanagers

awardsplayers

awardssharemanagers

Object Info

Session

Index: PRIMARY

Definition:

Type

BTREE

Unique

Yes

Visible

Yes

Columns

yearID

teamID

playerID

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	a	HULL	ALL	HULL	HULL	HULL	HULL	105113	100.00	Using temporary; Using filesort
1	SIMPLE	p	HULL	ref	NC_playerid_birthday	NC_playerid_birthday	1023	lahmansbaseballdb.a.playerID	1	100.00	Using where; Using index
1	SIMPLE	b	HULL	ref	PRIMARY	PRIMARY	40	lahmansbaseballdb.p.playerID,const	1	90.00	Using where

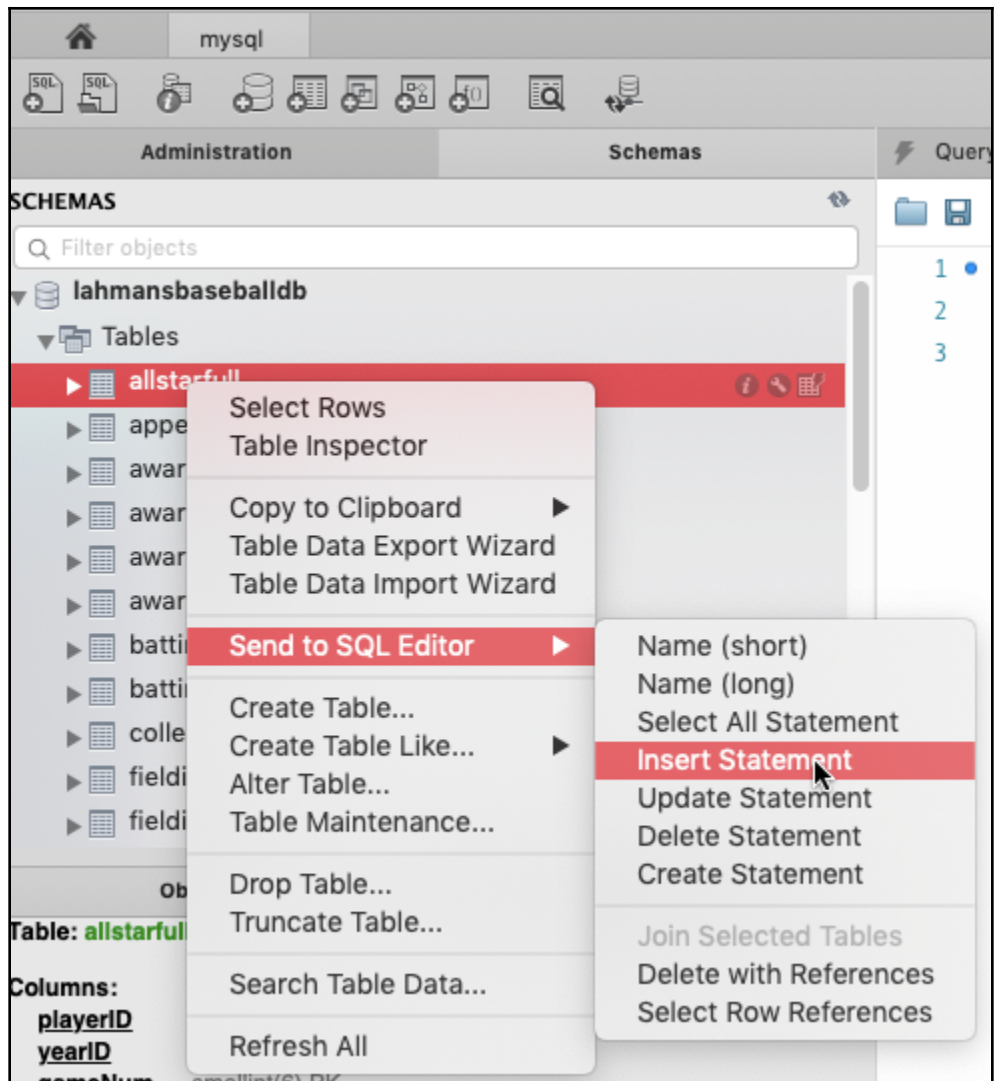
id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	b	HULL	ALL	PRIMARY	HULL	HULL	HULL	105369	9.00	Using where; Using temporary; Using filesort
1	SIMPLE	p	HULL	ref	NC_playerid_birthday	NC_playerid_birthday	1023	lahmansbaseballdb.b.playerID	1	100.00	Using where; Using index
1	SIMPLE	a	HULL	ref	NC_playerid_yearid_teamid_G_defense	NC_playerid_yearid_teamid_G...	38	lahmansbaseballdb.p.playerID	5	100.00	Using where; Using index

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	b	HULL	index	PRIMARY,NC_playerid_yearid_H	NC_playerid_yearid_H	43	HULL	105369	9.00	Using where; Using index; Using temporary; Using filesort
1	SIMPLE	p	HULL	ref	NC_playerid_birthday	NC_playerid_birthday	1023	lahmansbaseballdb.b.playerID	1	100.00	Using where; Using index
1	SIMPLE	a	HULL	ref	NC_playerid_yearid_teamid_G_defense	NC_playerid_yearid_teamid_G...	38	lahmansbaseballdb.p.playerID	5	100.00	Using where; Using index

Chapter 8: Modifying Data and Table Structures

Field	Type	Null	Key	Default	Extra
managerkey	smallint(5)	NO	PRI	NULL	auto_increment
playerid	varchar(9)	NO	MUL	NULL	
yearid	year(4)	NO		NULL	
games	tinyint(3)	NO		NULL	
wins	tinyint(3)	NO		NULL	
losses	tinyint(3)	NO		NULL	
alsoplayer	char(1)	NO		NULL	

CONSTRAINT_CATALOG	CONSTRAINT_SCHEMA	CONSTRAINT_NAME	TABLE_SCHEMA	TABLE_NAME	CONSTRAINT_TYPE	ENFORCED
def	yourschema	PRIMARY	yourschema	managers	PRIMARY KEY	YES
def	yourschema	managerkey_UNIQUE	yourschema	managers	UNIQUE	YES
def	yourschema	playerid_yearid_teamid_UNIQUE	yourschema	managers	UNIQUE	YES
def	yourschema	check_alsoplayer	yourschema	managers	CHECK	YES
def	yourschema	check_games	yourschema	managers	CHECK	YES
def	yourschema	check_losses	yourschema	managers	CHECK	YES
def	yourschema	check_manager_year	yourschema	managers	CHECK	YES
def	yourschema	check_wins	yourschema	managers	CHECK	YES



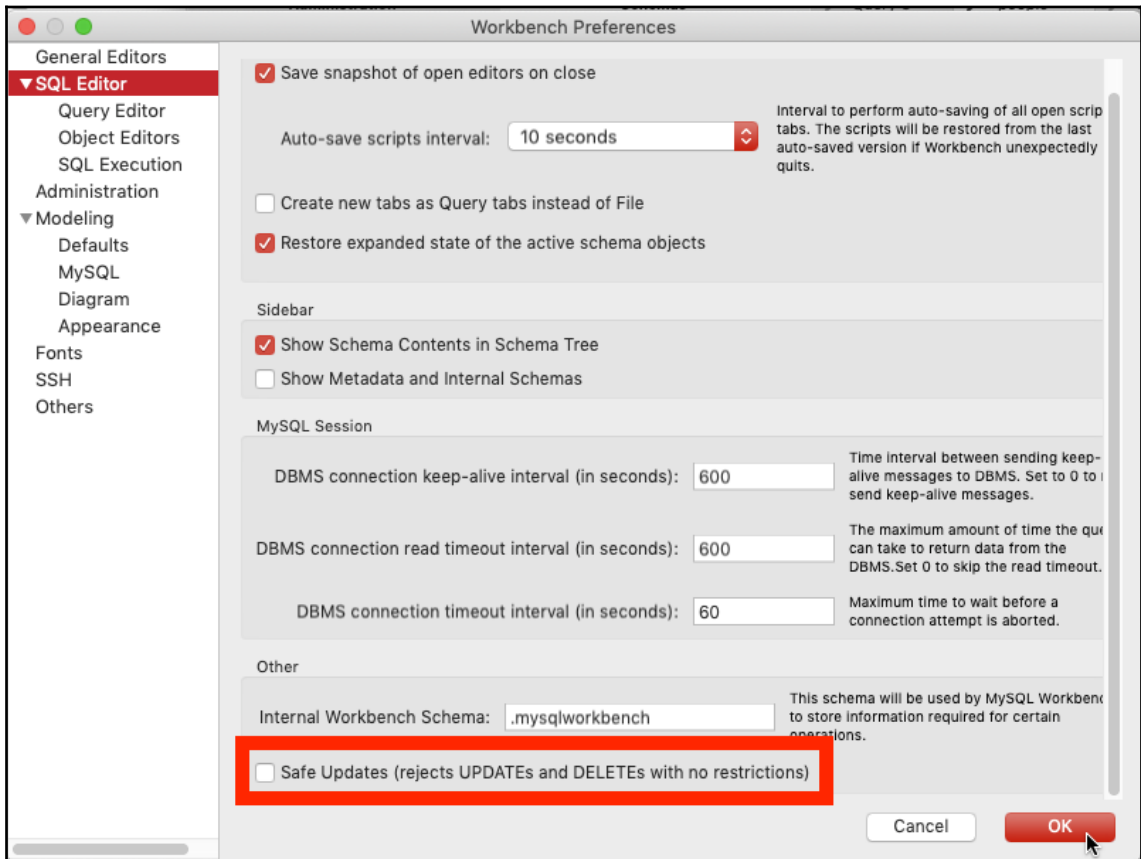
playerID	schoolID	yearID
blaloha01	sandiegost	1999

playerID	schoolID	yearID
blaloha01	HULL	1999

playerID	schoolID	yearID
blaloha01	1999	NULL

playerID	schoolID	yearID
blaloha01	sandiegost	1999
blaloha01	sandiegost	2000
blaloha01	sandiegost	2001
blaloha01	sandiegost	2002

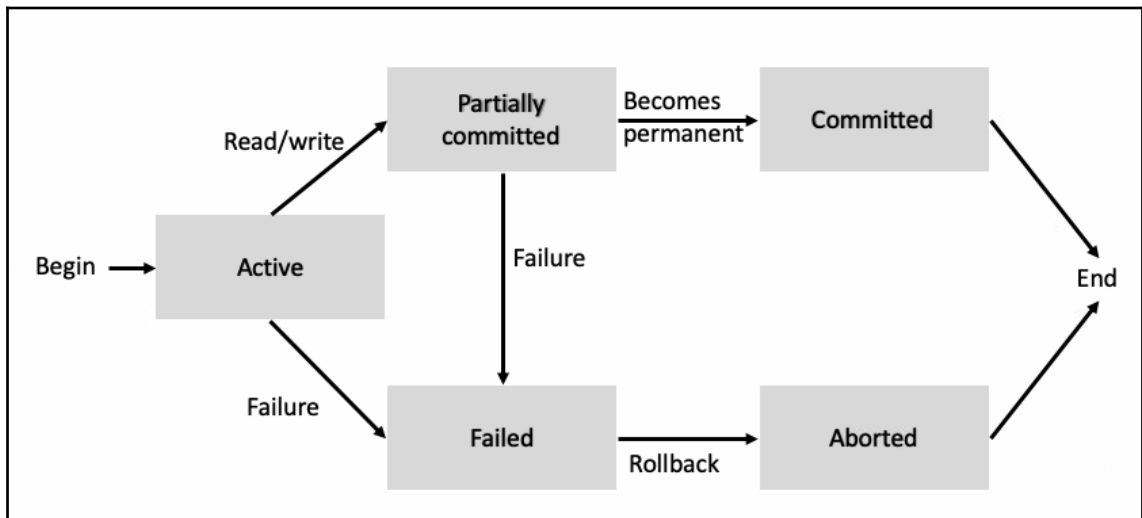
playerID	schoolID	yearID
blaloha01	sandiegost	1999
blaloha01	NULL	1999
blaloha01	1999	NULL

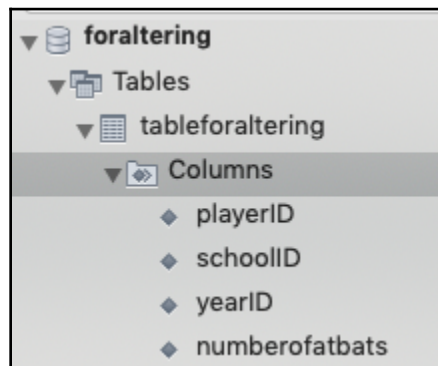
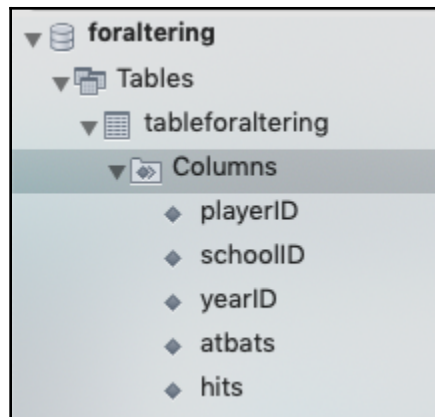


playerID	schoolID	yearID
blaloha01	sandiego	2000

playerID	yearID	teamID	lgID	inseason	G	W	L	rank	plyrMgr
wrighha01	1871	BS1	--	1	31	20	10	3	Y
woodji01	1871	CH1	--	1	28	19	9	2	Y
paborch01	1871	CL1	--	1	29	10	19	8	Y
lennobi01	1871	FW1	--	1	14	5	9	8	Y

playerID	yearID	teamID	lgID	inseason	G	W	L	rank	plyrMgr
wrighha01	1871	BS1	NA	1	31	20	10	3	Y
woodji01	1871	CH1	NA	1	28	19	9	2	Y
paborch01	1871	CL1	NA	1	29	10	19	8	Y
lennobi01	1871	FW1	NA	1	14	5	9	8	Y
deaneha01	1871	FW1	NA	2	5	2	3	8	Y





Object Info	
Table: tableforaltering	
Columns:	
playerID	varchar(9)
schoolID	varchar(8)
yearID	smallint(4)

Chapter 9: Working with Expressions

string	1	1.23	NULL
string	1	1.23	NULL

stringvalue	numbervalue	floatdecimalvalue	nullvalue
string	1	1.23	NULL

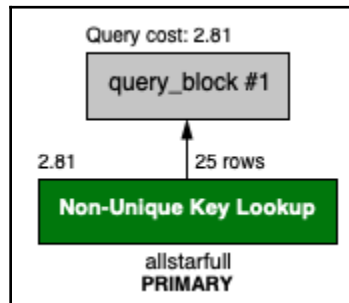
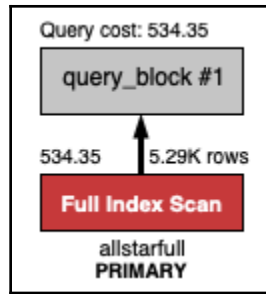
stringvalue	numbervalue	floatdecimalvalue	nullvalue
2	3	3.23	NULL

playeridupper	playerid	teamleague	teamid	lgid	gameidlower	gameid
AARONHA01	aaronha01	atl nl	ATL	NL	als197307240	ALS197307240
AARONHA01	aaronha01	atl nl	ATL	NL	nls197407230	NLS197407230
AARONHA01	aaronha01	ml4 al	ML4	AL	als197507150	ALS197507150
AASEDO01	aasedo01	bal al	BAL	AL	nls198607150	NLS198607150
ABREUBO01	abreubo01	phi nl	PHI	NL	nls200407130	NLS200407130
ABREUBO01	abreubo01	phi nl	PHI	NL	als200507120	ALS200507120
ABREUJO02	abreujo02	cha al	CHA	AL	als201407150	ALS201407150
ABREUJO02	abreujo02	cha al	CHA	AL	nls201807170	NLS201807170

average_g_all	max_g_all	min_g_all
51.3	165	1

playerid	average_g_all	max_g_all	min_g_all
aardsda01	36.8	73	1
aaronha01	143.4	161	85
aaronto01	62.4	141	8
aasedo01	34.5	66	7
abadan01	5.0	9	1
abadfe01	40.3	69	18
abadijo01	6.0	11	1

dayofweek	month	day	year	hour	minute	second
Monday	6	10	2019	11	12	13



Name: Schema: lahmansbaseballdb

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	G	Default / Expression
playerID	VARCHAR(9)	☒	☒	☐	☐	☐	☐	☐	☐	
yearID	SMALLINT(6)	☒	☒	☐	☐	☐	☐	☐	☐	
stint	SMALLINT(6)	☒	☒	☐	☐	☐	☐	☐	☐	
teamID	VARCHAR(3)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
lgID	VARCHAR(2)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
batavg	DECIMAL(4,3)	☐	☐	☐	☐	☐	☐	☒	☒	('H' / nullif('AB',0))
G	SMALLINT(6)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
G_batting	SMALLINT(6)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
AB	SMALLINT(6)	☐	☐	☐	☐	☐	☐	☐	☐	NULL

Column details 'batavg'

Column Name: Datatype:

Charset/Collation:

Expression: ('H' / nullif('AB',0))

Comments:

Storage: ☒ VIRTUAL ☐ STORED

☐ Primary Key ☐ Not NULL ☐ Unique

☐ Binary ☐ Unsigned ☐ ZeroFill

☐ Auto Increment ☒ Generated

Chapter 10: Grouping and Summarizing Data

playerid	teamid
aardsda01	SFN
aardsda01	CHN
aardsda01	CHA
aardsda01	BOS
aardsda01	SEA
aardsda01	NYA
aardsda01	NYN
aardsda01	ATL
aaronha01	ML1
aaronha01	ATL
aaronha01	ML4

playerid	teamid
aardsda01	SFN
aardsda01	CHN
aardsda01	CHA
aardsda01	BOS
aardsda01	SEA
aardsda01	NYA
aardsda01	NYN
aardsda01	ATL

playerid	teamid
aardsda01	SFN
aardsda01	CHN
aardsda01	CHA
aardsda01	BOS
aardsda01	SEA
aardsda01	SEA
aardsda01	NYA
aardsda01	NYN
aardsda01	ATL

playerid	teamid	yearid
aardsda01	SFN	2004
aardsda01	CHN	2006
aardsda01	CHA	2007
aardsda01	BOS	2008
aardsda01	SEA	2009
aardsda01	SEA	2010
aardsda01	NYA	2012
aardsda01	NYN	2013
aardsda01	ATL	2015

playerid	teamid
aardsda01	SFN
aardsda01	CHN
aardsda01	CHA
aardsda01	BOS
aardsda01	SEA
aardsda01	NYA
aardsda01	NYN
aardsda01	ATL

playerid	teamid
aardsda01	SFN
aardsda01	CHN
aardsda01	CHA
aardsda01	BOS
aardsda01	SEA
aardsda01	NYA
aardsda01	NYN
aardsda01	ATL

playerid	teamid
aardsda01	SFN
aardsda01	CHN
aardsda01	CHA
aardsda01	BOS
aardsda01	SEA
aardsda01	NYA
aardsda01	NYN
aardsda01	ATL

playerid	teamid	sum_at_bats
aardsda01	SFN	0
aardsda01	CHN	2
aardsda01	CHA	0
aardsda01	BOS	1
aardsda01	SEA	0
aardsda01	NYA	0
aardsda01	NYN	0
aardsda01	ATL	1
aaronha01	ML1	7080
aaronha01	ATL	4548
aaronha01	ML4	736

playerid	teamid	sum_at_bats	
zuverge01	BAL	72	
zuverge01	CIN	2	
zuverge01	CLE	0	
zuverge01	DET	68	
zuverge01	NULL	142	← subtotal
zwilldu01	CHA	87	
zwilldu01	CHF	1140	
zwilldu01	CHN	53	
zwilldu01	NULL	1280	← subtotal
zychto01	SEA	0	
zychto01	NULL	0	← subtotal
NULL	NULL	14922240	← total

ABC playerid	ABC teamid	123 sum_at_bats
aardsda01	ATL	1
aardsda01	BOS	1
aardsda01	CHA	0
aardsda01	CHN	2
aardsda01	NYA	0
aardsda01	NYN	0
aardsda01	SEA	0
aardsda01	SFN	0
aardsda01	[NULL]	4
aaronha01	ATL	4,548
aaronha01	ML1	7,080
aaronha01	ML4	736
aaronha01	[NULL]	12,364

playerid	teamid	sum_at_bats
aaronha01	ML1	7080
aaronha01	ATL	4548
aaronha01	ML4	736
aaronto01	ML1	485
aaronto01	ATL	459
abbated01	PHI	102
abbated01	BSN	1856
abbated01	PIT	1086
abbeych01	WAS	1756
abbotfr01	CLE	385
abbotfr01	PHI	128

playerid	teamid	sum_at_bats
aaronha01	ML1	7080
aaronha01	ATL	4548
aaronha01	ML4	736
aaronto01	ML1	485
aaronto01	ATL	459
abbated01	PHI	102
abbated01	BSN	1856
abbated01	PIT	1086
abbeych01	WAS	1756
abbotfr01	CLE	385
abbotfr01	PHI	128

playerid	teamid	sum_at_bats
abbated01	PHI	102
abbotfr01	CLE	385
abbotfr01	PHI	128
abbotku01	OAK	184
abbotku01	COL	357
abbotku01	NYN	157
abercree01	FLO	331
aberscl01	CHN	179
abnersh01	CAL	101
abnersh01	CHA	208
abramca01	BRO	228

Chapter 11: Advanced Querying Techniques

playerid	yearid	GamesBatted
anderbi01	1925	2
bagweje01	1991	156
bagweje01	1992	162
bagweje01	1993	142
bagweje01	1994	110
bagweje01	1995	114
bagweje01	1996	162
bagweje01	1997	162
bagweje01	1998	147
bagweje01	1999	162
bagweje01	2000	159
bagweje01	2001	161

playerid	yearid	GamesBatted
aardsda01	2004	11
aardsda01	2006	45
aardsda01	2007	25
aardsda01	2008	47
aardsda01	2009	73
aardsda01	2010	53
aardsda01	2012	1
aardsda01	2013	43
aardsda01	2015	33
aaronha01	1954	122

playerid	yearid	salary
aardsda01	2010	2750000
aardsda01	2011	4500000
abbotji01	1994	2775000
abbotji01	1995	2775000
abbotpa01	2002	3425000
abreubo01	2000	2933333
abreubo01	2001	4983000
abreubo01	2002	6333333
abreubo01	2003	9100000
abreubo01	2004	10600000

playerid	yearid	salary
aardsda01	2010	2750000
aardsda01	2011	4500000
aasedo01	1987	625000
aasedo01	1988	675000
abadfe01	2015	1087500
abadfe01	2016	1250000
abbotji01	1992	1850000
abbotji01	1993	2350000
abbotji01	1994	2775000
abbotji01	1995	2775000

playerid	yearid	salary
aardsda01	2011	4500000
abreubo01	2001	4983000
abreubo01	2002	6333333
abreubo01	2003	9100000
abreubo01	2004	10600000
abreubo01	2005	13100000
abreubo01	2006	13600000
abreubo01	2007	15000000
abreubo01	2008	16000000
abreubo01	2009	5000000

playerid	yearid	salary	average_salary	difference	max_salary
aardsda01	2004	300000	2085634	-1785634	33000000
aardsda01	2007	387500	2085634	-1698134	33000000
aardsda01	2008	403250	2085634	-1682384	33000000
aardsda01	2009	419000	2085634	-1666634	33000000
aardsda01	2010	2750000	2085634	664366	33000000
aardsda01	2011	4500000	2085634	2414366	33000000
aardsda01	2012	500000	2085634	-1585634	33000000
aasedo01	1986	600000	2085634	-1485634	33000000
aasedo01	1987	625000	2085634	-1460634	33000000
aasedo01	1988	675000	2085634	-1410634	33000000

```

USE lahmanbaseballdb;
SELECT ROUND(AVG(average_salary), 0) as average_of_all_teams_salaries
FROM
    (SELECT AVG(salary) average_salary
    FROM salaries
    GROUP BY teamid) AS team_salary;

```

average_of_all_teams_salaries
2078464

```

USE lahmanbaseballdb;
SELECT ROUND(AVG(average_salary), 0) as average_of_all_teams_salaries
FROM
    (SELECT AVG(salary) average_salary
    FROM salaries
    GROUP BY teamid) AS team_salary;

```

teamid	average_salary
ATL	2211176.3114754097
BAL	2028838.645744681
BOS	2968591.2033898304
CAL	739073.179347826
CHA	2168060.259009009
CHN	2353348.3900552485
CIN	1759986.7666666666
CLE	1651203.1548998947
DET	2386561.292410714
HOU	1788017.0908059024

average_of_all_teams_salaries
2537765

teamid	salaryavg
ATL	2211176.3114754097
BAL	2028838.645744681
BOS	2968591.2033898304
CHA	2168060.259009009
CHN	2353348.3900552485
DET	2386561.292410714
LAN	2795033.524555904
NYA	3968910.44076841
NYN	2463019.7297592997

teamid	salaryavg
ATL	2211176.3114754097
ATL	2028838.645744681
ATL	2968591.2033898304
ATL	2168060.259009009
ATL	2353348.3900552485
ATL	2386561.292410714
ATL	2795033.524555904
ATL	3968910.44076841

playerid	yearid	teamid	pos
abbotje01	1998	CHA	OF
abbotji01	1989	CAL	P
abbotji01	1990	CAL	P
abbotku01	1995	FLO	SS
abbotku01	1994	FLO	SS
abbotku01	1993	OAK	SS
abbotku01	1993	OAK	OF
abbotku01	1993	OAK	2B
abbotky01	1995	PHI	P
abbotky01	1992	PHI	P

playerid	yearid	teamid	pos
abbotje01	1997	CHA	OF
abbotje01	1998	CHA	OF
abbotje01	1999	CHA	OF
abbotje01	2000	CHA	OF
abbotje01	2001	FLO	OF
abbotji01	1999	MIL	P
abbotji01	1989	CAL	P
abbotji01	1990	CAL	P
abbotji01	1991	CAL	P
abbotji01	1992	CAL	P
abbotji01	1993	NYA	P
abbotji01	1994	NYA	P

playerid	yearid	teamid	pos	salary
aardsda01	2004	SFN	P	300000
aardsda01	2006	CHN	P	NULL
aardsda01	2007	CHA	P	387500
aardsda01	2008	BOS	P	403250
aardsda01	2009	SEA	P	419000
aardsda01	2010	SEA	P	2750000
aardsda01	2012	NYA	P	500000
aardsda01	2013	NYN	P	NULL
aardsda01	2015	ATL	P	NULL
aaronha01	1954	ML1	OF	NULL
aaronha01	1955	ML1	2B	NULL
aaronha01	1955	ML1	OF	NULL

CTE begins with WITH CTE name specified by you

Column names are OPTIONAL and must match names of columns in query inside the CTE

WITH ctename1 (col1, col2, colN)

AS Need to use AS to define the query for the CTE

(select col1, col2, colN from table1), Query to run in CTE needs to be surrounded by parentheses. NOTE: this query is followed by a comma because there is another query in this CTE

ctename2 (col1, col2, colN)

AS Second CTE with query

(select col1, col2, colN from table2)

SELECT col1, col2, colN

FROM ctename1

JOIN ctename2

ON ctename1.col1 = ctename2.col1;

Query to execute the CTE and join the two CTEs together

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type
appearances	0	PRIMARY	1	yearID	A	151	NULL	NULL		BTREE
appearances	0	PRIMARY	2	teamID	A	2827	NULL	NULL		BTREE
appearances	0	PRIMARY	3	playerID	A	105627	NULL	NULL		BTREE
appearances	1	NC_playerid_g_cols	1	playerID	A	19632	NULL	NULL		BTREE
appearances	1	NC_playerid_g_cols	2	G_all	A	97630	NULL	NULL	YES	BTREE
appearances	1	NC_playerid_g_cols	3	G_batting	A	99498	NULL	NULL	YES	BTREE
appearances	1	NC_playerid_g_cols	4	G_defense	A	102543	NULL	NULL	YES	BTREE

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	index	NULL	NC_playerid_g_cols	47	NULL	105627	100.00	Using index

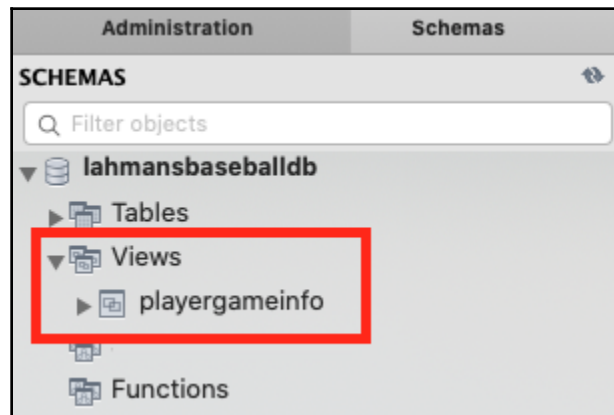
id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	index	NULL	PRIMARY	54	NULL	105627	100.00	Using index

Action Output		Time	Action	Response	Duration / Fetch Time
✓	1	17:13:03	SELECT playerid FROM appearances USE INDEX (PRIMARY)	105789 row(s) returned	0.161 sec / 0.443 sec
✓	2	17:13:22	SELECT playerid FROM appearances	105789 row(s) returned	0.222 sec / 0.442 sec

Chapter 12: Programmable Objects

playerid	birthyear	yearid	teamid	defensegames	numberofhits
abreujo02	1987	2017	CHA	139	189
adamsla01	1989	2017	ATL	41	30
adamsma01	1988	2017	ATL	72	79
adamsma01	1988	2017	SLN	9	14
adducji02	1985	2017	DET	26	20
adlemti01	1987	2017	CIN	30	3
adriaeh01	1989	2017	MIN	61	43
aguilje01	1990	2017	MIL	78	74
ahmedni01	1990	2017	ARI	48	42

playerid	birthyear	yearid	teamid	defensegames
anderti01	1993	2017	CHA	145
abreujo02	1987	2017	CHA	139
garcia01	1991	2017	CHA	132
sanchca01	1992	2017	CHA	130
engelad01	1991	2017	CHA	96
cabreme01	1984	2017	CHA	92
narvaom01	1992	2017	CHA	84
garcile02	1991	2017	CHA	83



parkalias	parkkey	parkname	city	state	country
Edison Field; Anaheim Stadium	ANA01	Angel Stadium of Anaheim	Anaheim	CA	US
The Ballpark in Arlington; Ameriquest Fi	ARL02	Rangers Ballpark in Arlington	Arlington	TX	US
American League Park	BAL09	Oriole Park IV	Baltimore	MD	US
Oriole Park V	BAL10	Terrapin Park	Baltimore	MD	US
Walpole Street Grounds	BOS01	South End Grounds I	Boston	MA	US
Union Park	BOS02	Dartmouth Grounds	Boston	MA	US
Bee Hive	BOS08	Braves Field	Boston	MA	US
Federal League Park	BUF04	International Fair Association Grounds	Buffalo	NY	US

namefirst	namelast	schoolid	yearid
David	Aardsma	rice	2003
David	Aardsma	rice	2002
David	Aardsma	pennst	2001
Andy	Abad	gamiddl	1993
Andy	Abad	gamiddl	1992
Bert	Abbey	vermont	1892

namefirst	namelast	schoolid	yearid
David	Aardsma	testing	2004
David	Aardsma	rice	2002
David	Aardsma	pennst	2001
Andy	Abad	gamiddl	1993

namefirst	namelast	schoolid	yearid
David	Aardsma	testing	2004
David	Aardsma	rice	2002
David	Aardsma	pennst	2001
Andy	Abad	gamiddl	1993

namefirst	namelast	schoolid	yearid
David	Aardsma	testing	2004
David	Aardsma	rice	2002
David	Aardsma	pennst	2001

namefirst	namelast	schoolid	yearid
David	Aardsma	rice	2003
David	Aardsma	rice	2002
David	Aardsma	pennst	2001
Andy	Abad	gamiddl	1993
Andy	Abad	gamiddl	1992
Bert	Abbey	vermont	1892

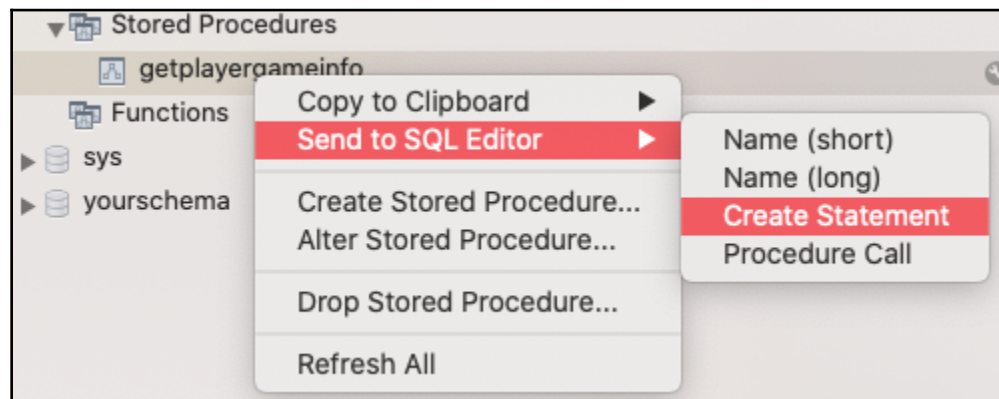
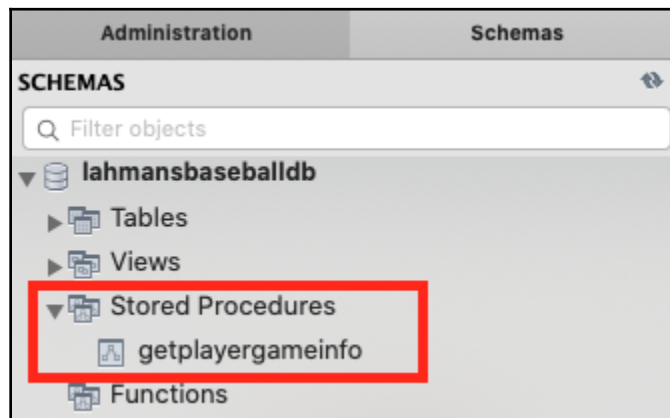
playerid	namefirst	namelast	schoolid	yearid
aardsda01	David	Aardsma	rice	2003
aardsda01	David	Aardsma	rice	2002
aardsda01	David	Aardsma	pennst	2001
abadan01	Andy	Abad	gamiddl	1993
abadan01	Andy	Abad	gamiddl	1992
abbeybe01	Bert	Abbey	vermont	1892

playerid	namefirst	namelast	schoolid	yearid
aardsda01	David	Aardsma	rice	2004
aardsda01	David	Aardsma	rice	2003
aardsda01	David	Aardsma	rice	2002
aardsda01	David	Aardsma	pennst	2001

Action Output				
		Time	Action	Response
✓	1	11:57:42	USE lahmansbaseballdb	0 row(s) affected
✓	2	11:57:42	DELETE from parksalias WHERE parkkey = 'ALB01'	0 row(s) affected

ID	parkalias	parkkey	parkname	city	state	country
1	NULL	ALB01	Riverside Park	Albany	NY	US

playerid	birthyear	yearid	teamid	defensegames	numberofhits
abreujo02	1987	2017	CHA	139	189
adamsla01	1989	2017	ATL	41	30
adamsma01	1988	2017	ATL	72	79
adamsma01	1988	2017	SLN	9	14
adducji02	1985	2017	DET	26	20
adlemti01	1987	2017	CIN	30	3
adriaeh01	1989	2017	MIN	61	43
aguijje01	1990	2017	MIL	78	74
ahmedni01	1990	2017	ARI	48	42



playerid	birthyear	yearid	teamid	defensegames	numberofhits
abreujo02	1987	2016	CHA	152	183
ackledu01	1988	2016	NYA	22	9
adamecr01	1991	2016	COL	68	49
adamsma01	1988	2016	SLN	86	74
adlemti01	1987	2016	CIN	13	4
adriaeh01	1989	2016	SFN	25	16
ahmedni01	1990	2016	ARI	88	62
alberha01	1992	2016	TEX	29	8
alberma01	1983	2016	CHA	58	1

@countplayers

543

playerid	yearid	gamecount
averyst01	1990	some more
bellmi01	1990	some more
berroge01	1990	barely any
blausje01	1990	some more
boevejo01	1990	some more
cabrefr01	1990	some more
castito02	1990	some more
claryma01	1990	some more
davisjo02	1990	some more
esaskni01	1990	barely any

playerid	yearid	gamecount
averyst01	1990	some
bellmi01	1990	some
berroge01	1990	barely any
blausje01	1990	tons
boevejo01	1990	some
cabrefr01	1990	many
castito02	1990	many
claryma01	1990	some
davisjo02	1990	some
esaskni01	1990	barely any

loopreturn

2,4,6,8,10,12,14,

repeatresults
1,2,3,4,5,6,7,8,9,10,

whilereult
1,2,3,4,5,6,7,8,9,10,

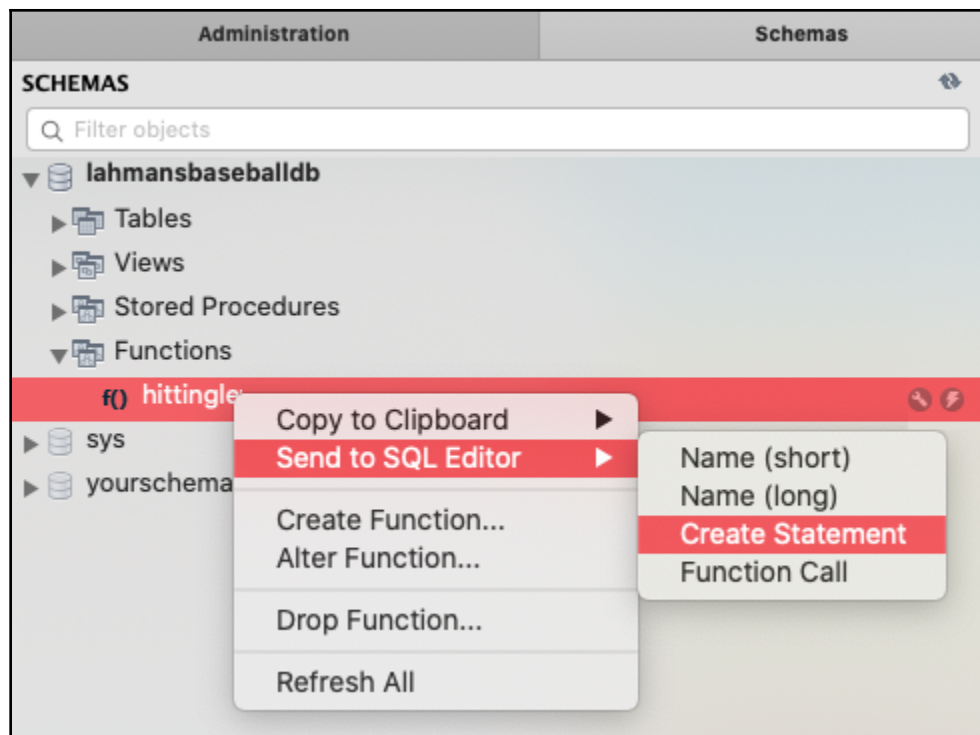
message
Duplicate key (aaronha01,1958,0) occurred

count(*)
26

ErrorNumber	ErrorMessage
2,627	Violation of PRIMARY KEY constraint 'AllstarFull\$Index_2BD68208_C8B4_4347'. Cannot insert duplicate key in object 'dbo.AllstarFull'. The

playerid	yearid	teamid	hits
abadfe01	2017	BOS	barely any
abreujo02	2017	CHA	tons
adamecr01	2017	COL	some
adamsau02	2017	WAS	barely any
adamsia01	2017	ATL	tons
adamsma01	2017	SLN	some
adamsma01	2017	ATL	tons

Administration	Schemas
SCHEMAS	
Filter objects	
lahmansbaseballdb Tables Views Stored Procedures Functions f() hittinglevel	



playerID	yearID	gameNum	gameID	teamID	lgID	GP	startingPos
arrieja01	2015	1	NLS201507170	CHI	AL	1	9

id	playerID	yearID	gameNum	gameID	teamID	lgID	GP	startingPos	changedate	actiontype
1	arrieja01	2016	0	ALS201607120	CHN	NL	0	NULL	2020-02-26 18:54:22	update

Field	Type	Null	Key	Default	Extra
playerid	varchar(255)	YES		NULL	NULL
birthyear	int(11)	YES		NULL	NULL
yearid	smallint(6)	NO		NULL	NULL
teamid	varchar(3)	NO		NULL	NULL
defensegames	smallint(6)	YES		NULL	NULL
numberofhits	smallint(6)	YES		NULL	NULL

Chapter 13: Exploring and Processing Your Data

playerid	mean	stddev	variance	minimum	maximum
aardsda01	0.0000	0	0	0	0
aaronha01	163.9565	39.70486582914487	1576.4763705103962	62	223
aaronto01	30.8571	27.51845391955095	757.265306122449	3	77
aasedo01	0.0000	0	0	0	0
abadan01	0.6667	0.9428090415820634	0.888888888888889	0	2
abadfe01	0.1111	0.3142696805273545	0.09876543209876545	0	1
abadijo01	5.5000	4.5	20.25	1	10
abbated01	77.2000	62.31982028215421	3883.7599999999998	0	170
abbeybe01	6.3333	3.4480268109295333	11.888888888888888	1	12

yearid	mean	stddev	variance	minimum	maximum
2004	33.0773	52.80202141332675	2788.0534653334166	0	262
2006	32.7328	52.70350916804687	2777.6598786264008	0	224
2007	32.4744	52.91470788468406	2799.9663105214454	0	238
2008	31.7487	50.870690179533604	2587.8271193420965	0	213
2009	31.3573	50.56072300834159	2556.3867111262425	0	225
2010	31.3820	49.48379640741829	2448.6461068908234	0	214
2012	29.8743	48.14048414779622	2317.5062139842194	0	216
2013	29.8744	48.45953998617647	2348.3270156718368	0	199
2015	28.3351	47.48300756005938	2254.636006948656	0	205

teamid	mean	stddev	variance	minimum	maximum
SFN	34.6597	49.723618668352444	2472.438253475728	0	208
CHN	38.7813	52.90249138611787	2798.6735948582755	0	229
CHA	37.1048	52.77147268378825	2784.8283292158094	0	224
BOS	38.1086	55.085629471992824	3034.4265743256847	0	240
SEA	32.3567	51.57954201225256	2660.449154193727	0	262
NYA	37.7133	55.02322842740567	3027.5556665744634	0	238
NYN	31.4877	45.889666160965	2105.861460364816	0	227
ATL	33.3161	50.67764177905283	2568.2233762860005	0	219
ML1	39.0728	55.567917134036385	3087.7934146151347	0	223

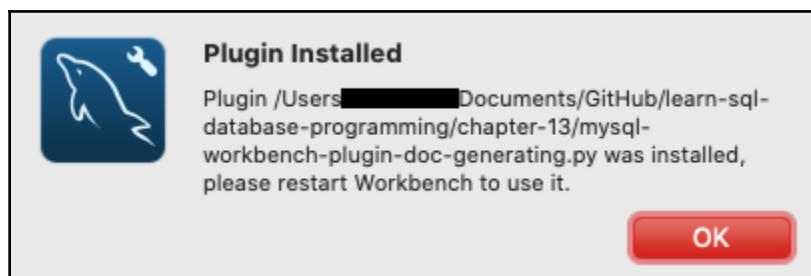
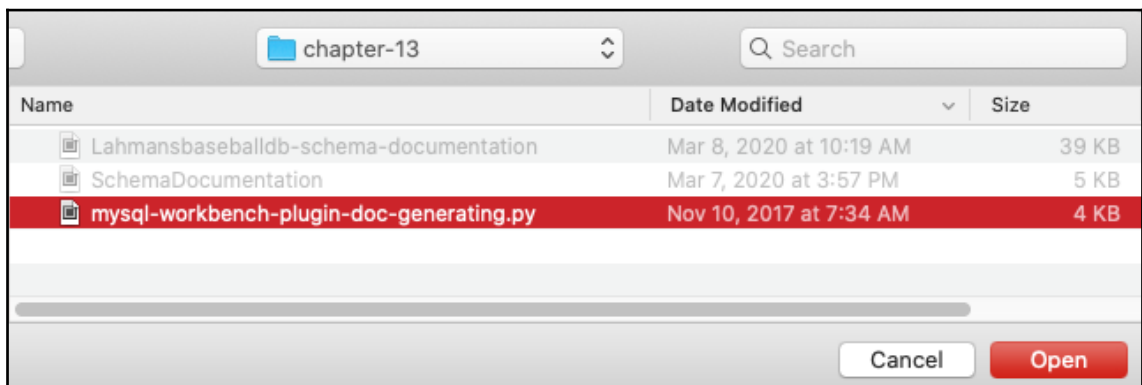
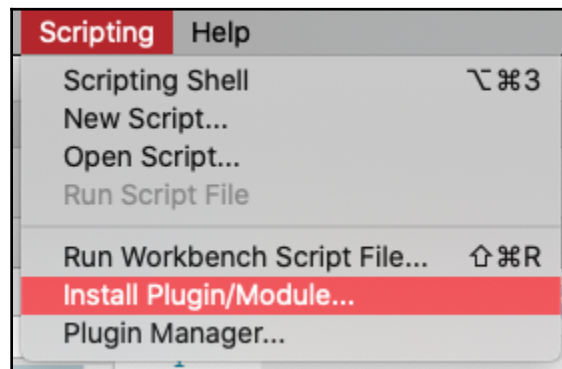
hits	count
248	1
235	1
229	1
233	1
253	1
257	1
246	1
242	1
262	1

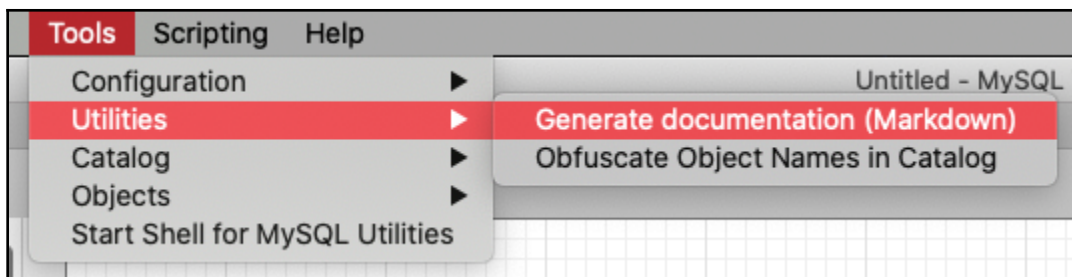
hits	count
8	1638
7	1845
6	2054
5	2282
4	2638
3	3225
2	4248
1	6928
0	28067

name_full
Bethel College
"University of California
"California Polytechnic State University
Southwestern College
"Long Island University
"Miami-Dade College
Butler County Community College
Lincoln University
"Minnesota State University
"Community College of Baltimore County
"St. Louis Community College

schoolID	name_full	city	state	country
betheltn	Bethel College	McKenzie	TN	USA
inbethel	Bethel College	Mishawaka	IN	USA

schoolID	name_full	city	state	country
calpoly	"California Polytechnic State University	San Luis Obispo"	San Luis Obispo	CA,USA
calpolypom	"California Polytechnic State University	Pomona"	Pomona	CA,USA





Schema documentation

Generated by MySQL Workbench Model Documentation v1.0.0 - Copyright (c) 2015 Hieu Le

Table: `allstarfull`

Description:

Columns:

Column	Data type	Attributes	Default	Description
<code>playerID</code>	VARCHAR(9)	PRIMARY, Not null		
<code>yearID</code>	SMALLINT	PRIMARY, Not null		
<code>gameNum</code>	SMALLINT	PRIMARY, Not null		
<code>gameID</code>	VARCHAR(12)		NULL	
<code>teamID</code>	VARCHAR(3)		NULL	
<code>lgID</code>	VARCHAR(2)		NULL	
<code>GP</code>	SMALLINT		NULL	
<code>startingPos</code>	SMALLINT		NULL	

Indices:

Name	Columns	Type	Description
PRIMARY	<code>playerID</code> , <code>yearID</code> , <code>gameNum</code>	PRIMARY	

Table: **batting**

Description:

Columns:



Column	Data type	Attributes	Default	Description
playerID	VARCHAR(9)	PRIMARY, Not null		
yearID	SMALLINT	PRIMARY, Not null		
stint	SMALLINT	PRIMARY, Not null		
teamID	VARCHAR(3)		NULL	
lgID	VARCHAR(2)		NULL	
G	SMALLINT		NULL	Games
G_batting	SMALLINT		NULL	Games batted
AB	SMALLINT		NULL	At-bats
R	SMALLINT		NULL	Runs scored
H	SMALLINT		NULL	Hits
2B	SMALLINT		NULL	

birthcity
Albion
Ashton
Barton
Belton
Benson
Benton
Bolton
Boston
Burton
Canton
Carson
Colton

hits	count
248	1
235	1
229	1
233	1
253	1
257	1
246	1
242	1
262	1

playerid	namefirst	namelast	yearid	teamid	g	ab	h
cobbty01	Ty	Cobb	1911	DET	146	591	248

playerid	namefirst	namelast	birthyear	debut
barre01	John	Barrett	NULL	1872-09-18 00:00:00
barrebi01	Bill	Barrett	NULL	1871-07-08 00:00:00
besti01	William	Bestick	NULL	1872-06-20 00:00:00
bolan01	NULL	Boland	NULL	1875-09-04 00:00:00
booth01	NULL	Booth	NULL	1875-05-01 00:00:00
boothed01	Eddie	Booth	NULL	1872-04-26 00:00:00
brown01	Robert	Brown	NULL	1874-07-29 00:00:00
browned01	Ed	Brown	NULL	1882-08-19 00:00:00
burkeja01	James	Burke	NULL	1882-06-10 00:00:00
burnsj01	Jim	Burns	NULL	1888-09-25 00:00:00

name_full
Bethel College
"University of California
"California Polytechnic State University
Southwestern College
"Long Island University
"Miami-Dade College
Butler County Community College
Lincoln University
"Minnesota State University
"Community College of Baltimore County
"St. Louis Community College

schoolID	name_full	city	state	country
betheltn	Bethel College	McKenzie	TN	USA
inbethel	Bethel College	Mishawaka	IN	USA

schoolID	name_full	city	state	country
betheltn	Bethel College	McKenzie	TN	USA

name_full
► Adelphi University

schoolID	name_full	city	state	country
adelphi	Adelphi University	Garden City	NY	USA
adrianmi	Adelphi University	Garden City	NY	USA



✕ 🔍

🔍 All
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🖼️ Images
📺 Videos
⋮ More
⚙️ Settings
🛠️ Tools

About 156,000,000 results (0.92 seconds)

Showing results for **adrian college**
 Search instead for **adrianmi college**

adrian.edu ▾

Adrian College

Adrian College is a modern liberal arts college that has been recognized by the U.S. News & World Report as the #1 Up-and-Coming College in the Midwest.

🔍

schoolID	name_full	city	state	country
adelphi	Adelphi University	Garden City	NY	USA

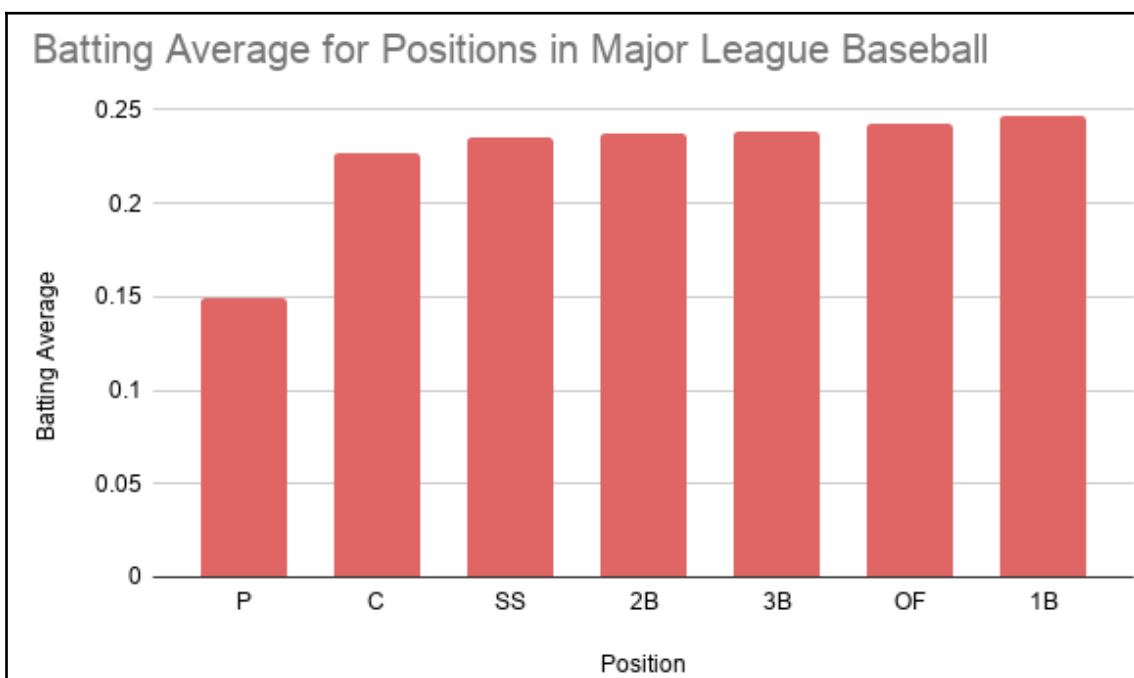
schoolID	name_full	city	state	country
calpoly	"California Polytechnic State University	San Luis Obispo"	San Luis Obispo	CA,USA
calpolypom	"California Polytechnic State University	Pomona"	Pomona	CA,USA

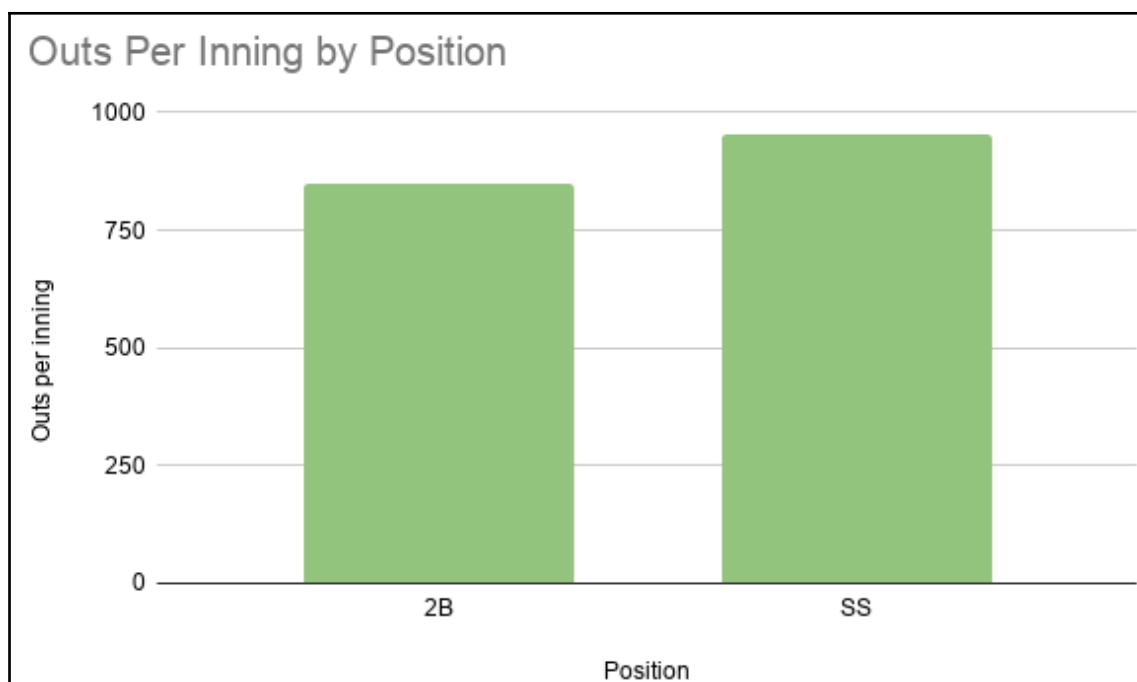
schoolID	name_full	city	state	country
calpolypom	"California Polytechnic State University	Pomona"	Pomona	CA,USA

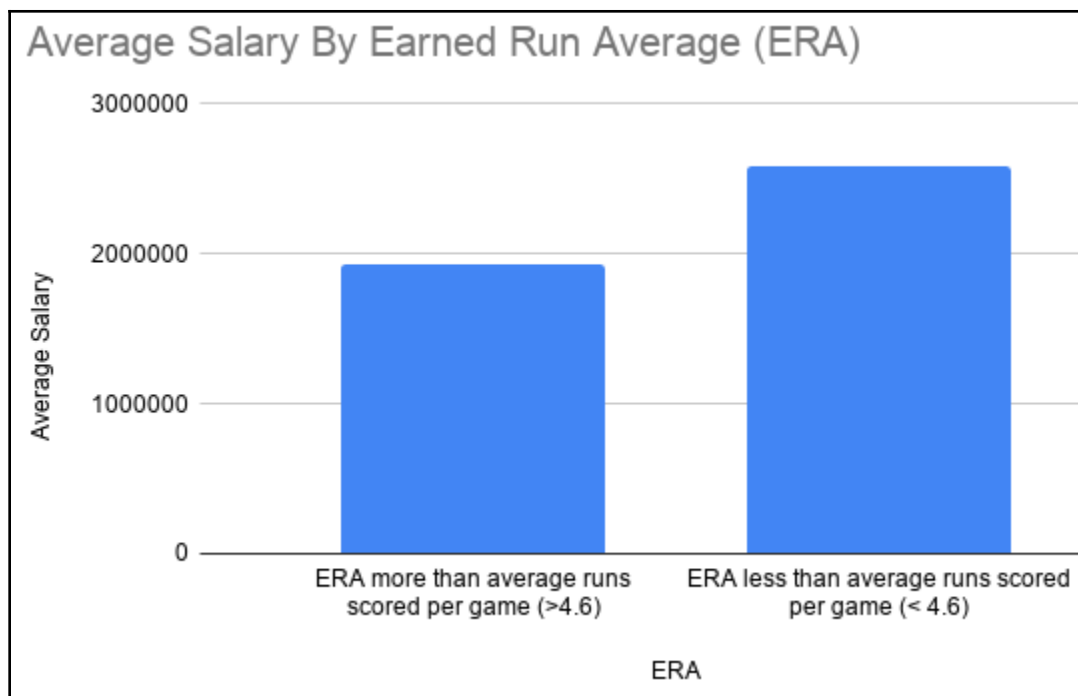
Chapter 14: Telling a Story with Your Data

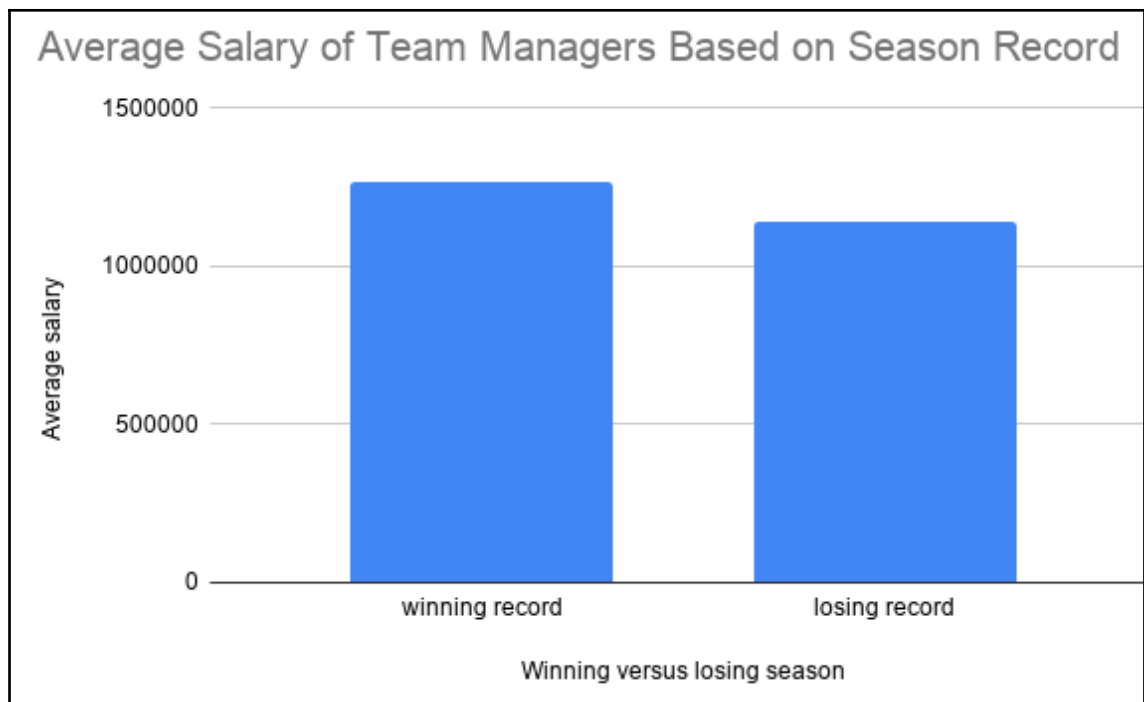
position	averagesalary
C	1,415,324
2B	1,467,949
SS	1,588,975
3B	1,667,332
P	1,939,988
OF	2,157,168
1B	2,374,374

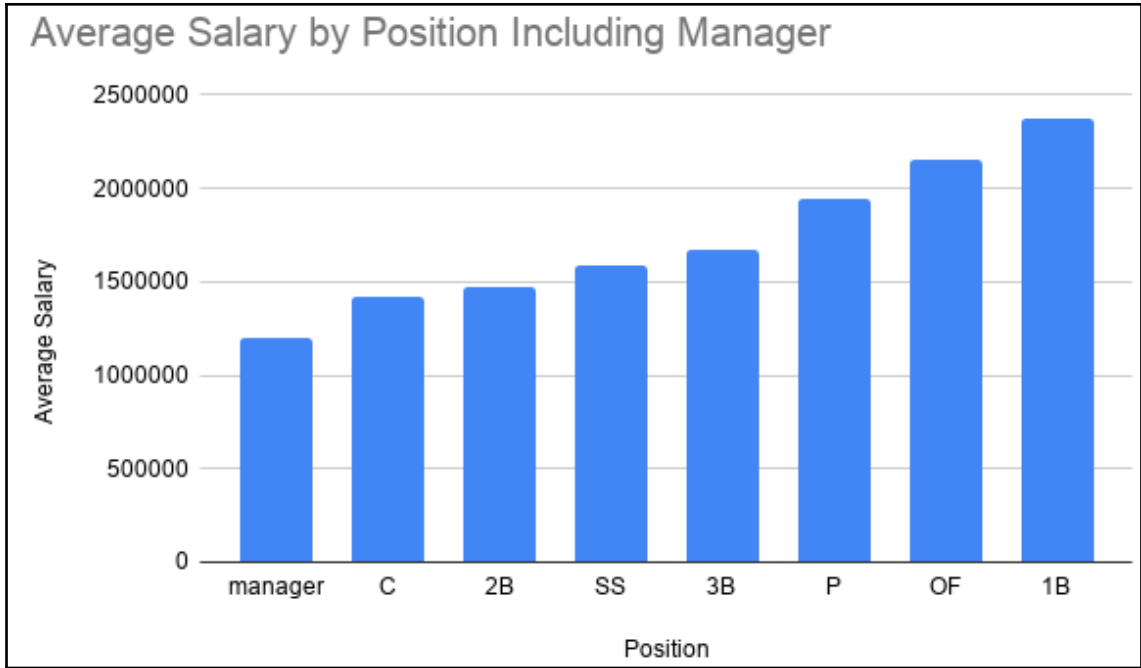
 Untitled spreadsheet ☆			
File Edit View Insert Format			
    100% ▾ \$ %			
<i>fx</i>			
	A	B	
1	position	averagesalary	
2	C	1,415,324	
3	2B	1,467,949	
4	SS	1,588,975	
5	3B	1,667,332	
6	P	1,939,988	
7	OF	2,157,168	
8	1B	2,374,374	



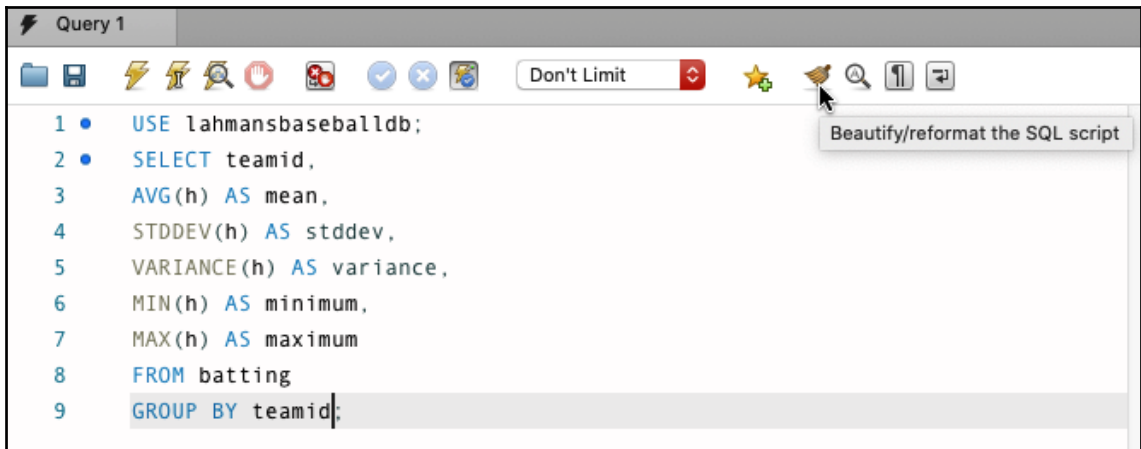
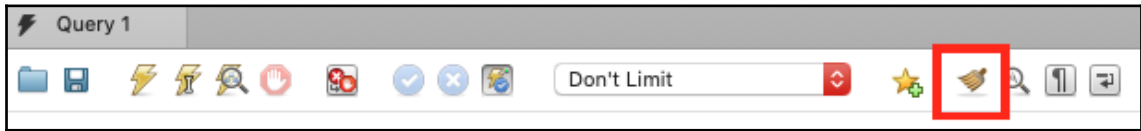








Chapter 15: Best Practices for Designing and Querying



```

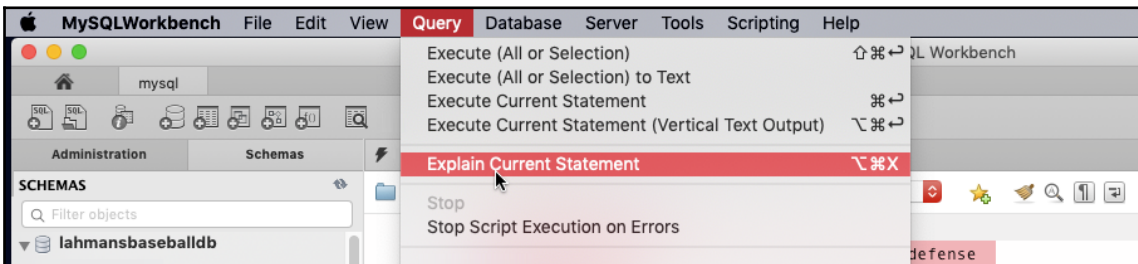
Query 1
1 •  USE lahmanbaseballdb;
2 •  SELECT
3      teamid,
4      AVG(h) AS mean,
5      STDDEV(h) AS stddev,
6      VARIANCE(h) AS variance,
7      MIN(h) AS minimum,
8      MAX(h) AS maximum
9  FROM
10     batting
11  GROUP BY teamid;
12

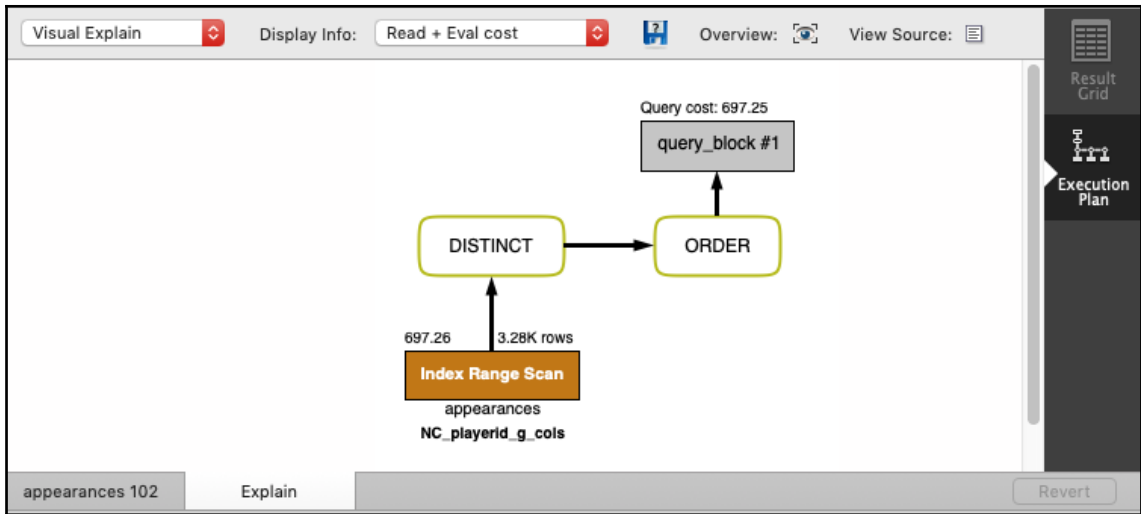
```

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	ALL	NULL	NULL	NULL	NULL	105113	100.00	NULL

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	ALL	NULL	NULL	NULL	NULL	105113	11.11	Using where; Using temporary; Using filesort

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	appearances	NULL	index	PRIMARY	PRIMARY	54	NULL	105113	11.11	Using where; Using index; Using temporary; Using filesort





UPPER('ab')
AB

uppercase
AB