

### 3.4: Database Querying in SQL

#### 1. Refining Your Query:

Query Editor	Query History	Query Editor	Query History
1	EXPLAIN SELECT * FROM film	1	EXPLAIN SELECT film_id, title FROM film
Data Output	Explain	Data Output	Explain
1	Seq Scan on film (cost=0.00..64.00 rows=1000 width=384)	1	Seq Scan on film (cost=0.00..64.00 rows=1000 width=19)

The cost to run the queries are the same, 0 for the first row and 64 for all. To optimize the query, if you know what exactly you are looking for you can limit the query.

#### 2. Ordering the Data:

Query Editor	Query History
1	SELECT * FROM film ORDER BY title, release_year DESC, rental_rate DESC

#### 3. Grouping Data:

Query Editor	Query History
1	SELECT rating, AVG(rental_rate) AS average_rental_rate FROM film GROUP BY rating
Data Output	Explain
rating mpaa_rating	average_rental_rate numeric
1	R
2	NC-17
3	G
4	PG
5	PG-13

Query Editor

Query History

1

SELECT rating, MIN(rental\_duration), Max(rental\_duration) FROM film GROUP BY rating

Data Output

Explain

Messages

Notifications

	rating mpaa_rating	min smallint	max smallint
1	R	3	7
2	NC-17	3	7
3	G	3	7
4	PG	3	7
5	PG-13	3	7

#### 4. Database Migration:

The data migration will be the job of the data engineers as they follow the ETL process. First the data will have to be extracted from the new source. Then the data needs to be transformed into the proper format. And lastly the transformed data can be inserted or upload into the new database.

If the data is analyzed before being loaded into the database, you can be analyzing raw data that is not properly formatted.

#### Bonus:

Query Editor

Query History

```

1 SELECT rating,
2 MIN(replacement_cost) AS Min_Replacemnt_Cost, MAX(replacement_cost) AS Max_Replacement_Cost
3 FROM film GROUP BY rating
4 ORDER BY case when rating = 'G' then 1
5             when rating = 'PG' then 2
6             when rating = 'PG-13' then 3
7             when rating = 'R' then 4
8             when rating = 'NC-17' then 5
9             end asc

```

Data Output

Explain

Messages

Notifications

	rating mpaa_rating	min_replacemnt_cost numeric	max_replacement_cost numeric
1	G	9.99	29.99
2	PG	9.99	29.99
3	PG-13	9.99	29.99
4	R	9.99	29.99
5	NC-17	9.99	29.99

## CSV Files:

Task 3.4 Rockbuster

film_id	title	description	release_y	language	rental	du	rental_rat	length	replacement	rating	last_upd	special	fulltext
1	Academy A	Epic Ora	2006	1	6	0.99	86	20.99	PG	50:59.0	(Deleted)	'academy'1	'battl'15 'b
2	Ace Goldf A	Astoun	2006	1	3	4.99	48	12.99	G	50:59.0	(Trailers,)	'ace'1	'adminstr'9 'an
3	Adaptatio A	Stoun	2006	1	7	2.99	50	18.99	NC-17	50:59.0	(Trailers,)	'adapt'1	'astound'4 'b
4	Affair Prej A	Fanciful	2006	1	5	2.99	117	26.99	G	50:59.0	(Commen	'affair'1	'chase'14 'doc
5	African Eg A	Fast-Pac	2006	1	6	2.99	130	22.99	G	50:59.0	(Deleted)	'african'1	'che'11 'der
6	Agent Tru A	Intrepid	2006	1	3	2.99	169	17.99	PG	50:59.0	(Deleted)	'agent'1	'ancient'19 'b
7	Airplane EA	Touchin	2006	1	6	4.99	62	28.99	PG-13	50:59.0	(Trailers,)	'airplan'1	'boat'20 'but
8	Airport Pc A	Epic Tali	2006	1	6	4.99	54	15.99	R	50:59.0	(Trailers)	'airport'1	'ancient'18 'v
9	Alabama IA	Thought	2006	1	3	2.99	114	21.99	PG-13	50:59.0	(Trailers,)	'adminstr'9	'alabama'1
10	Aladdin C-A	Action-F	2006	1	6	4.99	63	24.99	NC-17	50:59.0	(Trailers,)	'action'5	'action-pack'3
11	Alamo Vic A	Boring E	2006	1	6	0.99	126	16.99	G	50:59.0	(Commen	'alamo'1	'bore'4 'butle
12	Alaska Ph A	Fanciful	2006	1	6	0.99	136	22.99	PG	50:59.0	(Commen	'alaska'1	'australia'19
13	Ali Foreve A	Action-F	2006	1	4	4.99	150	21.99	PG	50:59.0	(Deleted)	'action'5	'action-pack'3
14	Alice Fant A	Emotor	2006	1	6	0.99	94	23.99	NC-17	50:59.0	(Trailers,)	'adminstr'13	'alic'1 'd
15	Alien Cen A	Brilliant	2006	1	5	2.99	46	10.99	NC-17	50:59.0	(Trailers,)	'alien'1	'battl'15 'brill
16	Airley Evol A	Fast-Pac	2006	1	6	2.99	180	23.99	NC-17	50:59.0	(Trailers,)	'airley'1	'astronaut'18
17	Alone Trix A	Fast-Pac	2006	1	3	0.99	82	14.99	R	50:59.0	(Trailers,)	'abandon'22	'alon'1 'b
18	Alter Vict A	Thought	2006	1	6	0.99	57	27.99	PG-13	50:59.0	(Trailers,)	'agent'17	'alter'1 'can
19	Amadeus A	Emotor	2006	1	6	0.99	113	20.99	PG	50:59.0	(Commen	'amadeus'1	'baloon'20
20	Amellei H A	Boring C	2006	1	4	4.99	79	23.99	R	50:59.0	(Commen	'amell'1	'baloon'19 'b
21	American A	Insighth	2006	1	3	4.99	129	17.99	R	50:59.0	(Commen	'adminstr'17	'america
22	Amistad NA	Emotor	2006	1	6	2.99	85	10.99	G	50:59.0	(Commen	'amistad'1	'california'2
23	Anaconda A	Lackust	2006	1	3	0.99	92	9.99	R	50:59.0	(Trailers,)	'anaconda'1	'australia'1
24	Analyze H A	Thought	2006	1	6	2.99	181	19.99	R	50:59.0	(Trailers,)	'analy'1	'che'12 'des
25	Angels Lf A	Thought	2006	1	3	2.99	74	15.99	G	50:59.0	(Trailers)	'angel'1	'astronaut'11
26	Annie Ide A	Amazing	2006	1	3	0.99	86	15.99	G	50:59.0	(Commen	'abandon'20	'ama'2 '4
27	Anonymo A	Amazing	2006	1	7	0.99	179	12.99	NC-17	50:59.0	(Deleted)	'adminstr'5,18	'ama'2
28	Anthem Lf A	Touchin	2006	1	5	4.99	91	16.99	PG-13	50:59.0	(Deleted)	'abandon'19	'amut'20
29	Antitrustr	'A Fateful	2006	1	5	2.99	168	11.99	NC-17	50:59.0	(Trailers,)	'adminstr'17	'ancient
30	Anything I A	Epic Sto	2006	1	4	2.99	82	27.99	R	50:59.0	(Trailers,)	'abandon'20	'anyth'1 '1
31	Apache DIA	Awe-Int	2006	1	5	4.99	92	16.99	NC-17	50:59.0	(Commen	'apach'1	'awe'5 'awe-i
32	Apocalypse A	Stoun	2006	1	6	4.99	119	11.99	R	50:59.0	(Trailers,)	'abandon'19	'amut'20
33	Apollo Ten A	Action-F	2006	1	5	2.99	153	15.99	PG-13	50:59.0	(Trailers,)	'abandon'22	'action'5
34	Arabia Do A	Touchin	2006	1	6	0.99	62	29.99	NC-17	50:59.0	(Commen	'arabia'1	'cow'12 'defe
35	Arachnopl A	Action-F	2006	1	4	2.99	147	24.99	PG-13	50:59.0	(Trailers,)	'action'5	'action-pack'3
36	Argonaut A	Emotor	2006	1	7	0.99	127	12.99	PG-13	50:59.0	(Trailers,)	'abandon'20	'argonaut
37	Armura B A	Brilliant	2006	1	1	2.99	171	26.99	PG	50:59.0	(Trailers,)	'armura'1	'thame'2 'thel

Task 3.4 Rockbuster Min Max Rental Duration by Rating

rating	min	max
R	3	7
NC-17	3	7
G	3	7
PG	3	7
PG-13	3	7

Task 3.4 Rockbuster AVG Rental Rate by Rating

rating	average_rental_rate
R	2.938718
NC-17	2.970952
G	2.888876
PG	3.051856
PG-13	3.034843