Lab 4 - Restricting and Sorting Data

Done by : Eng. Asmaa Thabet

Objectives

After completing this lab, you should be able to do the following:

- Limit the rows that are retrieved by a query
- Sort the rows that are retrieved by a query

Limiting Rows Using a Selection

When retrieving data from the database, you may need to restrict the rows of data that are displayed.

*   To Restrict the rows that are returned by using the WHERE clause:

```
SELECT *|{[DISTINCT] column/expression [alias],...}
FROM    table
[WHERE condition(s)];
```

The WHERE clause follows the FROM clause.

In the syntax:

*   WHERE Restricts the query to rows that meet a condition
*   *condition* Is composed of column names, expressions, constants, and a comparison operator. A condition specifies a combination of one or more expressions and logical (Boolean) operators, and returns a value of TRUE, FALSE, or UNKNOWN.

Limiting Rows Using a Selection (Cont.)

The WHERE clause can compare values in columns, literal, arithmetic expressions, or functions. It

consists of three elements:

- Column name
- Comparison condition
- Column name, constant, or list of values

```sql
SELECT *
FROM city
WHERE country_id = 44 ;
```

city_id	city	country_id	last_update
8	Adoni	44	2006-02-15 04:45:25
9	Ahmadnagar	44	2006-02-15 04:45:25
18	Allappuzha (Alleppey)	44	2006-02-15 04:45:25
22	Ambattur	44	2006-02-15 04:45:25
24	Amroha	44	2006-02-15 04:45:25
51	Balurghat	44	2006-02-15 04:45:25
71	Berhampore (Baharampur)	44	2006-02-15 04:45:25
73	Bhavnagar	44	2006-02-15 04:45:25
74	Bhilwara	44	2006-02-15 04:45:25
75	Bhimavaram	44	2006-02-15 04:45:25
76	Bhopal	44	2006-02-15 04:45:25

Limiting Rows Using a Selection (Cont.)

Character Strings and Dates:

Character strings and date values are enclosed with single quotation marks.
• Character values are case-sensitive and date values are format-sensitive.
• The default date display format is `DD-MON-RR`.

```
SELECT *
FROM city
WHERE city = 'Adoni' ;
```

city_id	city	country_id	last_update
8	Adoni	44	2006-02-15 04:45:25
NULL	NULL	NULL	NULL

Limiting Rows Using a Selection (Cont.)

```sql
SELECT *
FROM city
WHERE last_update = '2006-02-15 04:45:25' ;
```

city_id	city	country_id	last_update
1	A Corua (La Corua)	87	2006-02-15 04:45:25
2	Abha	82	2006-02-15 04:45:25
3	Abu Dhabi	101	2006-02-15 04:45:25
4	Acua	60	2006-02-15 04:45:25
5	Adana	97	2006-02-15 04:45:25
6	Addis Abeba	31	2006-02-15 04:45:25
7	Aden	107	2006-02-15 04:45:25
8	Adoni	44	2006-02-15 04:45:25
9	Ahmadnagar	44	2006-02-15 04:45:25

Limiting Rows Using a Selection (Cont.)

Comparison Operators

Operator	Meaning
=	Equal to
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
<>	Not equal to
BETWEEN ...AND...	Between two values (inclusive)
IN(set)	Match any of a list of values
LIKE	Match a character pattern
IS NULL	Is a null value

Limiting Rows Using a Selection (Cont.)

Comparison Operators

```sql
SELECT *
FROM payment
WHERE amount >= 5;
```

payment_id	customer_id	staff_id	rental_id	amount	payment_date	last_update
3	1	1	1185	5.99	2005-06-15 00:54:12	2006-02-15 22:12:30
5	1	2	1476	9.99	2005-06-15 21:08:46	2006-02-15 22:12:30
10	1	2	4526	5.99	2005-07-08 03:17:05	2006-02-15 22:12:30
11	1	1	4611	5.99	2005-07-08 07:33:56	2006-02-15 22:12:30
14	1	1	6163	7.99	2005-07-11 10:13:46	2006-02-15 22:12:30
32	1	1	15315	5.99	2005-08-22 20:03:46	2006-02-15 22:12:30
36	2	1	5755	6.99	2005-07-10 12:38:56	2006-02-15 22:12:30
38	2	1	7376	5.99	2005-07-27 15:23:02	2006-02-15 22:12:30
39	2	2	7459	5.99	2005-07-27 18:40:20	2006-02-15 22:12:30
40	2	2	8230	5.99	2005-07-29 00:12:59	2006-02-15 22:12:30
42	2	2	8705	5.99	2005-07-29 17:14:29	2006-02-15 22:12:30
44	2	2	9236	10.99	2005-07-30 13:47:43	2006-02-15 22:12:30

Limiting Rows Using a Selection (Cont.)

Range Conditions Using the BETWEEN **Operator**

```
SELECT *
FROM payment
WHERE amount between 2.99 AND 5.99;
```

Lower limit   Upper limit

payment_id	customer_id	staff_id	rental_id	amount	payment_date	last_update
1	1	1	76	2.99	2005-05-25 11:30:37	2006-02-15 22:12:30
3	1	1	1185	5.99	2005-06-15 00:54:12	2006-02-15 22:12:30
6	1	1	1725	4.99	2005-06-16 15:18:57	2006-02-15 22:12:30
7	1	1	2308	4.99	2005-06-18 08:41:48	2006-02-15 22:12:30
9	1	1	3284	3.99	2005-06-21 06:24:45	2006-02-15 22:12:30
10	1	2	4526	5.99	2005-07-08 03:17:05	2006-02-15 22:12:30
11	1	1	4611	5.99	2005-07-08 07:33:56	2006-02-15 22:12:30
12	1	1	5244	4.99	2005-07-09 13:24:07	2006-02-15 22:12:30
13	1	1	5326	4.99	2005-07-09 16:38:01	2006-02-15 22:12:30
15	1	2	7273	2.99	2005-07-27 11:31:22	2006-02-15 22:12:30
16	1	1	7841	4.99	2005-07-28 09:04:45	2006-02-15 22:12:30
17	1	2	8033	4.99	2005-07-28 16:18:23	2006-02-15 22:12:30

Limiting Rows Using a Selection (Cont.)

Membership Condition Using the `IN` Operator

```sql
select film_id, title, description, release_year, rental_duration
from film
where rental_duration IN (3,5,7);
```

film_id	title	description	release_year	rental_duration
2	ACE GOLDFINGER	A Astounding Epistle of a Database Administrat...	2006	3
3	ADAPTATION HOLES	A Astounding Reflection of a Lumberjack And a ...	2006	7
4	AFFAIR PREJUDICE	A Fanciful Documentary of a Frisbee And a Lum...	2006	5
6	AGENT TRUMAN	A Intrepid Panorama of a Robot And a Boy who...	2006	3
9	ALABAMA DEVIL	A Thoughtful Panorama of a Database Administ...	2006	3
15	ALIEN CENTER	A Brilliant Drama of a Cat And a Mad Scientist w...	2006	5
17	ALONE TRIP	A Fast-Paced Character Study of a Composer A...	2006	3
21	AMERICAN CIRCUS	A Insightful Drama of a Girl And a Astronaut wh...	2006	3
23	ANACONDA CONFESSIONS	A Lacklustre Display of a Dentist And a Dentist...	2006	3
25	ANGELS LIFE	A Thoughtful Display of a Woman And a Astron...	2006	3

Limiting Rows Using a Selection (Cont.)

Pattern Matching Using the `LIKE` Operator

Use the `LIKE` operator to perform wildcard searches of valid search string values.

Search conditions can contain either literal characters or numbers:

- `%` denotes zero or many characters.
- `_` denotes one character.

```
select film_id, title
from film
where title like 'B%';
```

film_id	title
47	BABY HALL
48	BACKLASH UNDEFEATED
49	BADMAN DAWN
50	BAKED CLEOPATRA
51	BALLOON HOMEWARD
52	BALLROOM MOCKINGBIRD
53	BANG KWAI
54	BANGER PINOCCHIO
55	BARBARELLA STREETCAR
56	BAREFOOT MANCHURIAN

Limiting Rows Using a Selection (Cont.)

Pattern Matching Using the `LIKE` Operator

- You may not always know the exact value to search for. You can select rows that match a character
- pattern by using the `LIKE` operator. The character pattern–matching operation is referred to as a *wildcard* search. Two symbols can be used to construct the search string

Symbol	Description
%	Represents any sequence of zero or more characters
_	Represents any single character

Limiting Rows Using a Selection (Cont.)

Combining Wildcard Characters

- You can combine the two wildcard characters (%, _) with literal characters for pattern matching:

```sql
select film_id, title
from film
where title like '_g%';
```

film_id	title
6	AGENT TRUMAN
274	EGG IGBY
275	EGYPT TENENBAUMS
451	IGBY MAKER
NULL	NULL

Limiting Rows Using a Selection (Cont.)

Using the `NULL` Conditions

- Test for nulls with the `IS NULL` operator

```
select *
from staff
where picture is Null;
```

staff_id	first_name	last_name	address_id	picture	email	store_id	active	username	password	last_update
2	Jon	Stephens	4	NULL	Jon.Stephens@sakilastaff.com	2	1	Jon	NULL	2006-02-15 03:57:16
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Defining Conditions Using the Logical Operators

- A logical condition combines the result of two component conditions to produce a single result based on those conditions or it inverts the result of a single condition. A row is returned only if the overall result of the condition is true.

Operator	Meaning
AND	Returns TRUE if *both* component conditions are true
OR	Returns TRUE if *either* component condition is true
NOT	Returns TRUE if the condition is false
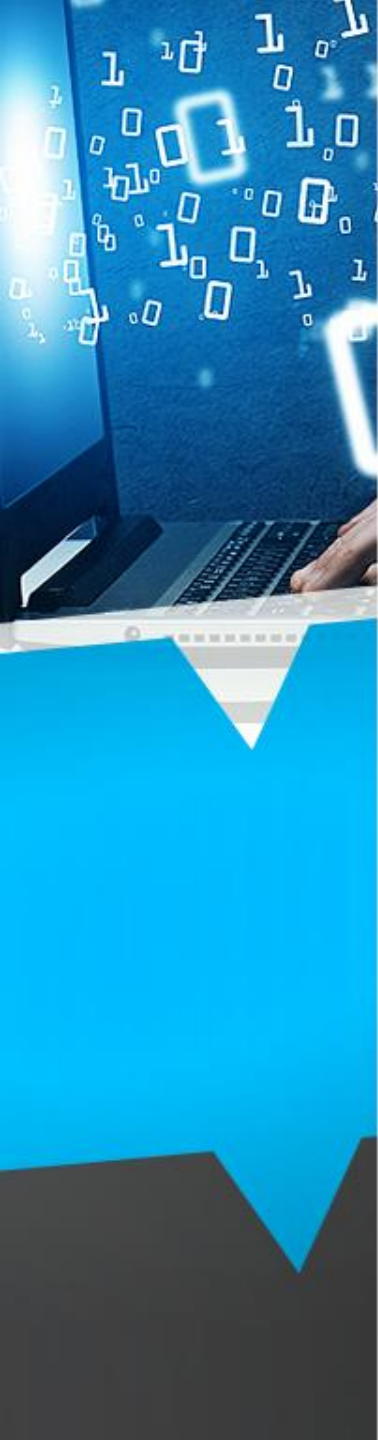
Defining Conditions Using the Logical Operators

Using the AND Operator

AND requires both the component conditions to be true:

AND Truth Table

The following table shows the results of combining two expressions with AND:

AND	TRUE	FALSE	NULL
TRUE	TRUE	FALSE	NULL
FALSE	FALSE	FALSE	FALSE
NULL	NULL	FALSE	NULL

Defining Conditions Using the Logical Operators

Using the AND Operator

```sql
SELECT film_id, title, description, release_year, rental_duration
FROM film
WHERE rental_duration <= 7
AND title LIKE '%ACADEMY%' ;
```

film_id	title	description	release_year	rental_duration
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist ...	2006	6
940	VICTORY ACADEMY	A Insightful Epistle of a Mad Scientist And a Exp...	2006	6
NULL	NULL	NULL	NULL	NULL

Defining Conditions Using the Logical Operators

Using the OR Operator

OR requires either component condition to be true:

OR Truth Table

The following table shows the results of combining two expressions with OR:

OR	TRUE	FALSE	NULL
TRUE	TRUE	TRUE	TRUE
FALSE	TRUE	FALSE	NULL
NULL	TRUE	NULL	NULL

Defining Conditions Using the Logical Operators

Using the OR Operator

```sql
SELECT film_id, title, description, release_year, rental_duration
FROM film
WHERE rental_duration <= 7
OR title LIKE '%ACADEMY%' ;
```

film_id	title	description	release_year	rental_duration
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist …	2006	6
2	ACE GOLDFINGER	A Astounding Epistle of a Database Administrat…	2006	3
3	ADAPTATION HOLES	A Astounding Reflection of a Lumberjack And a …	2006	7
4	AFFAIR PREJUDICE	A Fanciful Documentary of a Frisbee And a Lum…	2006	5
5	AFRICAN EGG	A Fast-Paced Documentary of a Pastry Chef An…	2006	6
6	AGENT TRUMAN	A Intrepid Panorama of a Robot And a Boy who…	2006	3
7	AIRPLANE SIERRA	A Touching Saga of a Hunter And a Butler who …	2006	6
8	AIRPORT POLLOCK	A Epic Tale of a Moose And a Girl who must Con…	2006	6
9	ALABAMA DEVIL	A Thoughtful Panorama of a Database Administ…	2006	3
10	ALADDIN CALENDAR	A Action-Packed Tale of a Man And a Lumberjac…	2006	6
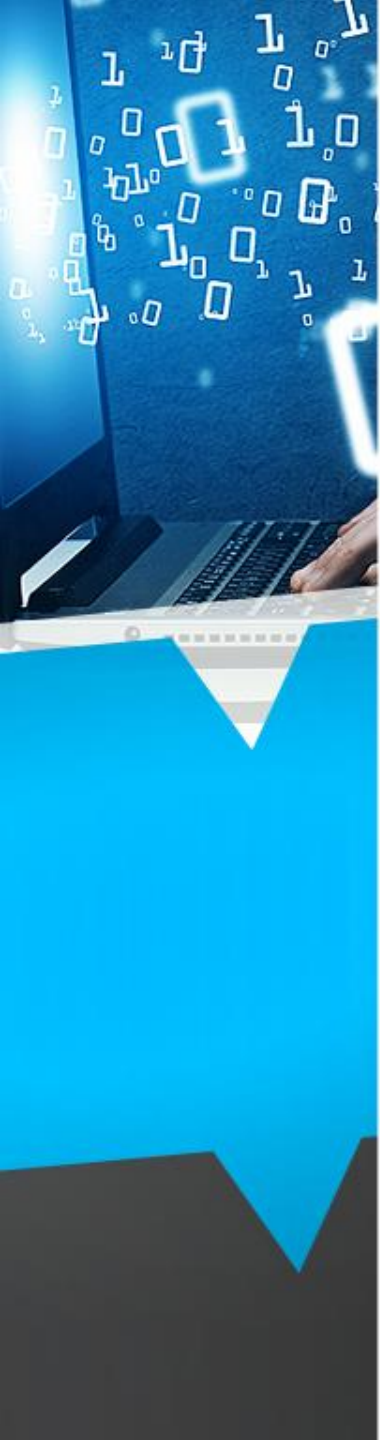
Defining Conditions Using the Logical Operators

Using the NOT Operator

Not used to Negate everything

NOT Truth Table

The following table shows the result of applying the NOT operator to a condition:

NOT	TRUE	FALSE	NULL
	FALSE	TRUE	NULL

Defining Conditions Using the Logical Operators

Using the NOT **Operator**

```
select *
from staff
where picture is Not Null;
```

```
select film_id, title, description, release_year, rental_duration
from film
where rental_duration NOT IN (3,5,7);
```

```
SELECT film_id, title, description, release_year, rental_duration
FROM film
WHERE rental_duration <= 7
AND title NOT LIKE '%ACADEMY%' ;
```

Rules of precedence for operators in an expression

Operator	Meaning
1	Arithmetic operators
2	Concatenation operator
3	Comparison conditions
4	IS [NOT] NULL, LIKE, [NOT] IN
5	[NOT] BETWEEN
6	Not equal to
7	NOT logical condition
8	AND logical condition
9	OR logical condition

You can use parentheses to override rules of precedence.

Rules of precedence for operators in an expression

```sql
SELECT film_id, title, description, release_year, rental_duration
FROM film
WHERE rental_duration <= 7
OR rental_duration >= 5
AND title NOT LIKE '%ACADEMY%' ;
```

OR
AND

```sql
SELECT film_id, title, description, release_year, rental_duration
FROM film
WHERE (rental_duration <= 7
OR rental_duration >= 5)
AND title NOT LIKE '%ACADEMY%' ;
```

Sorting rows using the ORDER BY clause

Syntax

```
SELECT          expr
FROM            table
[WHERE          condition(s)]
[ORDER BY  {column, expr, numeric_position} [ASC|DESC]];
```

In the syntax:

ORDER BY	specifies the order in which the retrieved rows are displayed
ASC	orders the rows in ascending order (This is the default order.)
DESC	orders the rows in descending order

Sorting rows using the ORDER BY clause

Sort the retrieved rows with the `ORDER BY` clause:

– `ASC`: Ascending order, default

– `DESC`: Descending order

The `ORDER BY` clause comes last in the `SELECT` statement:

```sql
SELECT film_id, title, description, release_year, length
FROM film
Order by length;
```

film_id	title	description	release_year	length
15	ALIEN CENTER	A Brilliant Drama of a Cat And a Mad Scientist w...	2006	46
469	IRON MOON	A Fast-Paced Documentary of a Mad Cow And ...	2006	46
504	KWAI HOMEWARD	A Amazing Drama of a Car And a Squirrel who m...	2006	46
505	LABYRINTH LEAGUE	A Awe-Inspiring Saga of a Composer And a Fris...	2006	46
730	RIDGEMONT SUBMARINE	A Unbelieveable Drama of a Waitress And a Co...	2006	46
237	DIVORCE SHINING	A Unbelieveable Saga of a Crocodile And a Stud...	2006	47
247	DOWNHILL ENOUGH	A Emotional Tale of a Pastry Chef And a Forensi...	2006	47
393	HALLOWEEN NUTS	A Amazing Panorama of a Forensic Psychologist...	2006	47
398	HANOVER GALAXY	A Stunning Reflection of a Girl And a Secret Age...	2006	47
407	HAWK CHILL	A Action-Packed Drama of a Mad Scientist And ...	2006	47

Sorting rows using the ORDER BY clause

Sort the retrieved rows with the `ORDER BY` clause:

– `ASC`: Ascending order, default

– `DESC`: Descending order

The `ORDER BY` clause comes last in the `SELECT` statement:

```sql
SELECT film_id, title, description, release_year, length
FROM film
Order by length desc;
```

film_id	title	description	release_year	length
141	CHICAGO NORTH	A Fateful Yarn of a Mad Cow And a Waitress w...	2006	185
182	CONTROL ANTHEM	A Fateful Documentary of a Robot And a Stude...	2006	185
212	DARN FORRESTER	A Fateful Story of a A Shark And a Explorer wh...	2006	185
349	GANGS PRIDE	A Taut Character Study of a Woman And a A S...	2006	185
426	HOME PITY	A Touching Panorama of a Man And a Secret Ag...	2006	185
609	MUSCLE BRIGHT	A Stunning Panorama of a Sumo Wrestler And a...	2006	185
690	POND SEATTLE	A Stunning Drama of a Teacher And a Boat who...	2006	185
817	SOLDIERS EVOLUTION	A Lacklustre Panorama of a A Shark And a Pio...	2006	185
872	SWEET BROTHERHOOD	A Unbelieveable Epistle of a Sumo Wrestler And...	2006	185
991	WORST BANGER	A Thrilling Drama of a Madman And a Dentist wh...	2006	185

Sorting rows using the ORDER BY clause

:

```sql
1 • select film_id, title, description, length
2   from film
3   order by film_id, length;
4
5 • select film_id, title, description, length
6   from film
7   order by 1, 4;
```

	film_id	title	description	length
▶	1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist ...	86
	2	ACE GOLDFINGER	A Astounding Epistle of a Database Administrat...	48
	3	ADAPTATION HOLES	A Astounding Reflection of a Lumberjack And a ...	50
	4	AFFAIR PREJUDICE	A Fanciful Documentary of a Frisbee And a Lum...	117
	5	AFRICAN EGG	A Fast-Paced Documentary of a Pastry Chef An...	130
	6	AGENT TRUMAN	A Intrepid Panorama of a Robot And a Boy who...	169
	7	AIRPLANE SIERRA	A Touching Saga of a Hunter And a Butler who ...	62
	8	AIRPORT POLLOCK	A Epic Tale of a Moose And a Girl who must Con...	54
	9	ALABAMA DEVIL	A Thoughtful Panorama of a Database Administ...	114
	10	ALADDIN CALENDAR	A Action-Packed Tale of a Man And a Lumberjac...	63
	11	ALAMO VIDEOTAPE	A Boring Epistle of a Butler And a Cat who must ...	126
	12	ALASKA PHANTOM	A Fanciful Saga of a Hunter And a Pastry Chef ...	136

Result Grid | Filter Rows: | Edit: | Export/Import:

Sorting rows using the ORDER BY clause

```sql
select film_id, title, description, length
from film
order by length desc, film_id ;
```

	film_id	title	description	length
▶	141	CHICAGO NORTH	A Fateful Yarn of a Mad Cow And a Waitress w...	185
	182	CONTROL ANTHEM	A Fateful Documentary of a Robot And a Stude...	185
	212	DARN FORRESTER	A Fateful Story of a A Shark And a Explorer wh...	185
	349	GANGS PRIDE	A Taut Character Study of a Woman And a A S...	185
	426	HOME PITY	A Touching Panorama of a Man And a Secret Ag...	185
	609	MUSCLE BRIGHT	A Stunning Panorama of a Sumo Wrestler And a...	185
	690	POND SEATTLE	A Stunning Drama of a Teacher And a Boat who...	185
	817	SOLDIERS EVOLUTION	A Lacklusture Panorama of a A Shark And a Pio...	185
	872	SWEET BROTHERHOOD	A Unbelieveable Epistle of a Sumo Wrestler And...	185
	991	WORST BANGER	A Thrilling Drama of a Madman And a Dentist wh...	185
	180	CONSPIRACY SPIRIT	A Awe-Inspiring Story of a Student And a Frisb...	184
	198	CRYSTAL BREAKING	A Fast-Paced Character Study of a Feminist An...	184

Sorting rows using the ORDER BY clause

```sql
select film_id, title, description, length
from film
where rental_duration > 5
order by rental_duration * rental_rate ;
```

film_id	title	description	length
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist ...	86
11	ALAMO VIDEOTAPE	A Boring Epistle of a Butler And a Cat who must ...	126
12	ALASKA PHANTOM	A Fanciful Saga of a Hunter And a Pastry Chef ...	136
14	ALICE FANTASIA	A Emotional Drama of a A Shark And a Databas...	94
18	ALTER VICTORY	A Thoughtful Drama of a Composer And a Femi...	57
19	AMADEUS HOLY	A Emotional Display of a Pioneer And a Technica...	113
34	ARABIA DOGMA	A Touching Epistle of a Madman And a Mad Cow...	62
38	ARK RIDGEMONT	A Beautiful Yarn of a Pioneer And a Monkey wh...	68
52	BALLROOM MOCKINGBIRD	A Thrilling Documentary of a Composer And a M...	173
63	BEDAZZLED MARRIED	A Astounding Character Study of a Madman An...	73
64	BEETHOVEN EXORCIST	A Epic Display of a Pioneer And a Student who ...	151
66	BENEATH RUSH	A Astounding Panorama of a Man And a Monke...	53

Sorting rows using the ORDER BY clause

```sql
select film_id, title, rental_duration * rental_rate As 'Total Rental'
from film
where rental_duration > 5
order by rental_duration * rental_rate desc;
```

	film_id	title	Total Rental
▶	70	BIKINI BORROWERS	34.93
	84	BOILED DARES	34.93
	88	BORN SPINAL	34.93
	92	BOWFINGER GABLES	34.93
	100	BROOKLYN DESERT	34.93
	103	BUCKET BROTHERHOOD	34.93
	133	CHAMBER ITALIAN	34.93
	139	CHASING FIGHT	34.93
	144	CHINATOWN GLADIATOR	34.93
	165	COLDBLOODED DARLING	34.93
	172	CONEHEADS SMOOCHY	34.93
	173	CONFESSIONS MAGUIRE	34.93

Using REGEXP [Regular Expression]

- Used when it comes to searching for strings to allow us to search for more complex patterns that used with Like.
- There is Many Characters used with REGEXP:

- Carrot Sign (^) : at the beginning of the string. Means The title we fetch Must start with the word after the sign.
- Dollar Sign ($) : at the end of the string. Means The thing we fetch Must end with the word after the sign.
- Pipe or Vertical bar (|) : To Search for Multiple words in specific column & represent Multiple search pattern.
- Bracket ([ ]) : To Specify one or multiple pattern comes before or after a character or more.

Using REGEXP [Regular Expression]

- Carrot Sign (^) : at the beginning of the string. Means The title we fetch Must start with the word after the sign.

```sql
select *
from film
where title regexp '^ACADEMY' ;
```

film_id	title	description	release_year	language_id
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist ...	2006	1
NULL	NULL	NULL	NULL	NULL

Using REGEXP [Regular Expression]

- Dollar Sign ($) : at the end of the string. Means The thing we fetch Must end with the word after the sign.

```
select *
from film
where title regexp 'EGG$' ;
```

film_id	title	description	release_year	language_id
5	AFRICAN EGG	A Fast-Paced Documentary of a Pastry Chef An...	2006	1
709	RACER EGG	A Emotional Display of a Monkey And a Waitres...	2006	1
NULL	NULL	NULL	NULL	NULL

Using REGEXP [Regular Expression]

- Pipe or Vertical bar (|) : To Search for Multiple words in specific column & represent Multiple search pattern.

```
select *
from film
where title regexp 'ACADEMY| EGG' ;
```

film_id	title	description	release_year	language_id
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist ...	2006	1
5	AFRICAN EGG	A Fast-Paced Documentary of a Pastry Chef An...	2006	1
709	RACER EGG	A Emotional Display of a Monkey And a Waitres...	2006	1
940	VICTORY ACADEMY	A Insightful Epistle of a Mad Scientist And a Exp...	2006	1
NULL	NULL	NULL	NULL	NULL

Using REGEXP [Regular Expression]

-
```sql
select *
from film
where title regexp 'ACADEMY$| ^EGG' ;
```

film_id	title	description	release_year	language_id
940	VICTORY ACADEMY	A Insightful Epistle of a Mad Scientist And a Exp...	2006	1
NULL	NULL	NULL	NULL	NULL

```sql
select *
from film
where title regexp '^ACADEMY| EGG$ | HOLES' ;
```

film_id	title	description	release_year	language_id
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist ...	2006	1
3	ADAPTATION HOLES	A Astounding Reflection of a Lumberjack And a ...	2006	1
NULL	NULL	NULL	NULL	NULL

Using REGEXP [Regular Expression]

- Bracket ([ ]) : To Specify one or multiple pattern comes before or after a character or more. [Before Case]

```
select *
from film
where title regexp '[rif]g' ;
```

film_id	title	description	release_year	language_id
20	AMELIE HELLFIGHTERS	A Boring Drama of a Woman And a Squirrel who...	2006	1
36	ARGONAUTS TOWN	A Emotional Epistle of a Forensic Psychologist A...	2006	1
62	BED HIGHBALL	A Astounding Panorama of a Lumberjack And a ...	2006	1
82	BLOOD ARGONAUTS	A Boring Drama of a Explorer And a Man who m...	2006	1
93	BRANNIGAN SUNRISE	A Amazing Epistle of a Moose And a Crocodile w...	2006	1
97	BRIDE INTRIGUE	A Epic Tale of a Robot And a Monkey who must ...	2006	1
98	BRIGHT ENCOUNTERS	A Fateful Yarn of a Lumberjack And a Feminist ...	2006	1

Using REGEXP [Regular Expression]

- Bracket ([ ]) : To Specify one or multiple pattern comes before or after a character or more. [After Case]

```
select *
from film
where title regexp 'g[rif]' ;
```

film_id	title	description	release_year	language_id
59	BEAR GRACELAND	A Astounding Saga of a Dog And a Boy who mu…	2006	1
61	BEAUTY GREASE	A Fast-Paced Display of a Composer And a Moo…	2006	1
86	BOOGIE AMELIE	A Lacklusture Character Study of a Husband An…	2006	1
99	BRINGING HYSTERICAL	A Fateful Saga of a A Shark And a Technical Wri…	2006	1
102	BUBBLE GROSSE	A Awe-Inspiring Panorama of a Crocodile And a …	2006	1
117	CANDLES GRAPES	A Fanciful Character Study of a Monkey And a …	2006	1
160	CLUB GRAFFITI	A Epic Tale of a Pioneer And a Hunter who must…	2006	1

Using REGEXP [Regular Expression]

- Bracket ([ ]) : To Specify one or multiple pattern comes before or after a character or more. [Range of Characters]

```
select *
from film
where title regexp '[m-z]g' ;
```

film_id	title	description	release_year	language_id
2	ACE GOLDFINGER	A Astounding Epistle of a Database Administrat...	2006	1
25	ANGELS LIFE	A Thoughtful Display of a Woman And a Astron...	2006	1
30	ANYTHING SAVANNAH	A Epic Story of a Pastry Chef And a Woman wh...	2006	1
32	APOCALYPSE FLAMINGOS	A Astounding Story of a Dog And a Squirrel who...	2006	1
34	ARABIA DOGMA	A Touching Epistle of a Madman And a Mad Cow...	2006	1
36	ARGONAUTS TOWN	A Emotional Epistle of a Forensic Psychologist A...	2006	1
37	ARIZONA BANG	A Brilliant Panorama of a Mad Scientist And a M...	2006	1

```
select *
from film
where title regexp 'g[m-z]' ;
```

Difference between REGEXP & Like

```sql
select *
from film
where title regexp 'ACADEMY' ;
```

film_id	title	description	release_year	language_id
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist …	2006	1
940	VICTORY ACADEMY	A Insightful Epistle of a Mad Scientist And a Exp…	2006	1
NULL	NULL	NULL	NULL	NULL

```sql
select * from
film
where title like 'ACADEMY';
```

film_id	title	description	release_year	language_id
NULL	NULL	NULL	NULL	NULL

Using LIMIT

- To Limit the number of returned rows .

```sql
select *
from film
limit 5;
```

film_id	title	description	release_year	language_id	original_language_id	rental_duration	rental_rate
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist ...	2006	1	NULL	6	0.99
2	ACE GOLDFINGER	A Astounding Epistle of a Database Administrat...	2006	1	NULL	3	4.99
3	ADAPTATION HOLES	A Astounding Reflection of a Lumberjack And a ...	2006	1	NULL	7	2.99
4	AFFAIR PREJUDICE	A Fanciful Documentary of a Frisbee And a Lum...	2006	1	NULL	5	2.99
5	AFRICAN EGG	A Fast-Paced Documentary of a Pastry Chef An...	2006	1	NULL	6	2.99
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Using LIMIT

- To Limit the number of returned rows from specific id.
-

```sql
select *
from film
limit 3, 5;
```

film_id	title	description	release_year	language_id	original_language_id	rental_duration	rental_rate
4	AFFAIR PREJUDICE	A Fanciful Documentary of a Frisbee And a Lum...	2006	1	NULL	5	2.99
5	AFRICAN EGG	A Fast-Paced Documentary of a Pastry Chef An...	2006	1	NULL	6	2.99
6	AGENT TRUMAN	A Intrepid Panorama of a Robot And a Boy who...	2006	1	NULL	3	2.99
7	AIRPLANE SIERRA	A Touching Saga of a Hunter And a Butler who ...	2006	1	NULL	6	4.99
8	AIRPORT POLLOCK	A Epic Tale of a Moose And a Girl who must Con...	2006	1	NULL	6	4.99
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Using UNION OPERATOR
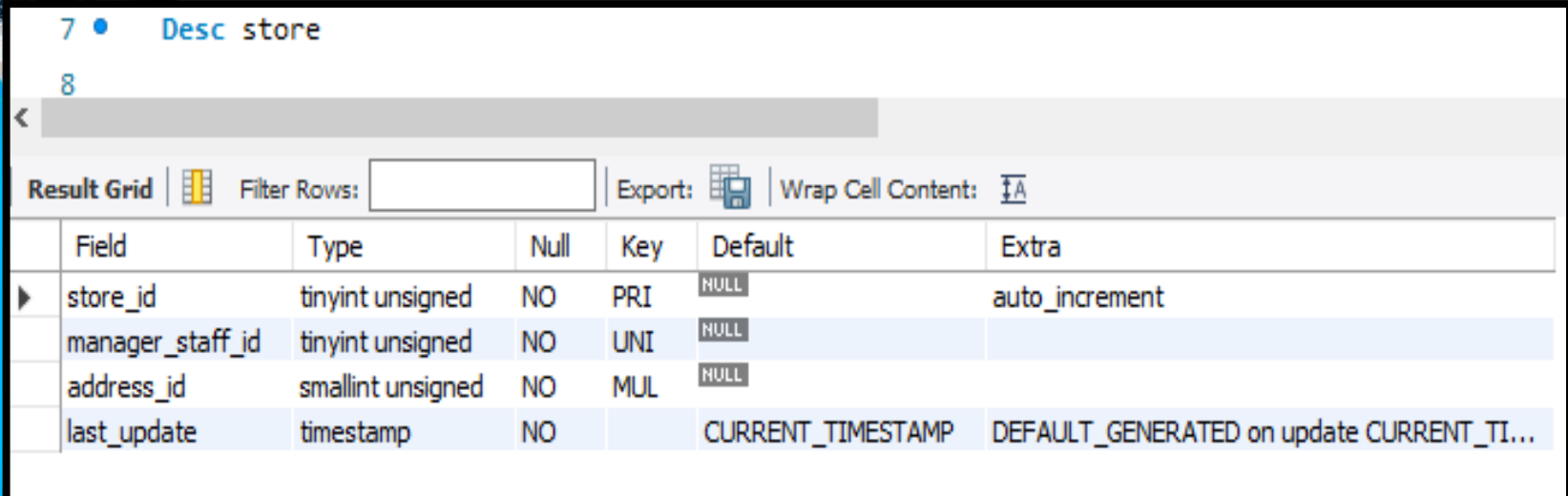
- Union used to display all results from two or more queries

```sql
select film_id, title, rental_duration * rental_rate As 'Total Rental'
from film
where rental_duration > 5
UNION
select film_id, title, rental_duration * rental_rate As 'Total Rental'
from film
where rental_duration <9;
```

| film_id	title	Total Rental
1	ACADEMY DINOSAUR	5.94
3	ADAPTATION HOLES	20.93
5	AFRICAN EGG	17.94
7	AIRPLANE SIERRA	29.94
8	AIRPORT POLLOCK	29.94
10	ALADDIN CALENDAR	29.94
11	ALAMO VIDEOTAPE	5.94
12	ALASKA PHANTOM	5.94
14	ALICE FANTASIA	5.94
16	ALLEY EVOLUTION	17.94
18	ALTER VICTORY	5.94
19	AMADEUS HOLY	5.94

Using DESCRIBE OPERATOR

- DESCRIBE or DESC used to show the structure of the table in MySQL.

-

Using DESCRIBE OPERATOR

```
7 •    Desc film
8
9
```

	Field	Type	Null	Key	Default	Extra
▶	film_id	smallint unsigned	NO	PRI	NULL	auto_increment
	title	varchar(255)	NO	MUL	NULL	
	description	text	YES		NULL	
	release_year	year	YES		NULL	
	language_id	tinyint unsigned	NO	MUL	NULL	
	original_language_id	tinyint unsigned	YES	MUL	NULL	
	rental_duration	tinyint unsigned	NO		3	
	rental_rate	decimal(4,2)	NO		4.99	
	length	smallint unsigned	YES		NULL	
	replacement_cost	decimal(5,2)	NO		19.99	
	rating	enum('G','PG','P...	YES		G	
	special_features	set('Trailers','Co...	YES		NULL	
	last_update	timestamp	NO		CURR...	DEFAULT_GEN...

Result Grid   Filter Rows: Export: Wrap Cell Content:

Exercises

Get Films which :

- Title contains DEVIL or FOREVER words.
- Title End with HUMAN or LIFE words.
- Title Start with AN or Contains MY.
- Title contains F Followed by M or S or Y.
- Title contains A or B or C then N.
- Title contains from H-M before S.
- Get the first 3 customers from customer table.
- Get the 5 lowest rental duration films from film table.