

MySQL - Logical Operators Challenges - Lecture 20

Logical Exercise + CASE Statement.

```
mysql> SELECT * FROM books
-> WHERE author_lname='Eggers' AND
-> released_year > 2010 AND
-> title LIKE '%novel%';
+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+
|      5 | A Hologram for the King: A Novel | Dave | Eggers | 2012 | 154 | 352 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT * FROM books
-> WHERE author_lname='Eggers' OR
-> released_year > 2010;
+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+
|      2 | Norse Mythology | Neil | Gaiman | 2016 | 43 | 304 |
|      5 | A Hologram for the King: A Novel | Dave | Eggers | 2012 | 154 | 352 |
|      6 | The Circle | Dave | Eggers | 2013 | 26 | 504 |
|      9 | A Heartbreaking Work of Staggering Genius | Dave | Eggers | 2001 | 104 | 437 |
|     17 | 10% Happier | Dan | Harris | 2014 | 29 | 256 |
|     19 | Lincoln In The Bardo | George | Saunders | 2017 | 1000 | 367 |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

Between - AND Logic: Inclusive in nature

- It can be replaced with comparison operators.



WHERE Released_Year Between 1990 AND 2010;

Where released_year >= 1990 AND released_year <= 2010;

1. Select all books published between 2004 and 2015

```
mysql> SELECT * FROM Books WHERE released_year BETWEEN 2004 AND 2015;
+-----+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+-----+
| 5 | A Hologram for the King: A Novel | Dave | Eggers | 2012 | 154 | 352 |
| 6 | The Circle | Dave | Eggers | 2013 | 26 | 504 |
| 8 | Just Kids | Patti | Smith | 2010 | 55 | 304 |
| 15 | Oblivion: Stories | David | Foster Wallace | 2004 | 172 | 329 |
| 16 | Consider the Lobster | David | Foster Wallace | 2005 | 92 | 343 |
| 17 | 10% Happier | Dan | Harris | 2014 | 29 | 256 |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> SELECT * FROM Books WHERE released_year >= 2004 AND released_year <= 2015;
+-----+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+-----+
| 5 | A Hologram for the King: A Novel | Dave | Eggers | 2012 | 154 | 352 |
| 6 | The Circle | Dave | Eggers | 2013 | 26 | 504 |
| 8 | Just Kids | Patti | Smith | 2010 | 55 | 304 |
| 15 | Oblivion: Stories | David | Foster Wallace | 2004 | 172 | 329 |
| 16 | Consider the Lobster | David | Foster Wallace | 2005 | 92 | 343 |
| 17 | 10% Happier | Dan | Harris | 2014 | 29 | 256 |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

NOT BETWEEN

1.2 Select all books published not between 2004 and 2015

```
mysql> SELECT * FROM Books WHERE released_year NOT BETWEEN 2004 AND 2015;
+-----+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | The Namesake | Jhumpa | Lahiri | 2003 | 32 | 291 |
| 2 | Norse Mythology | Neil | Gaiman | 2016 | 43 | 304 |
| 3 | American Gods | Neil | Gaiman | 2001 | 12 | 465 |
| 4 | Interpreter of Maladies | Jhumpa | Lahiri | 1996 | 97 | 198 |
| 7 | The Amazing Adventures of Kavalier & Clay | Michael | Chabon | 2000 | 68 | 634 |
| 9 | A Heartbreaking Work of Staggering Genius | Dave | Eggers | 2001 | 104 | 437 |
| 10 | Coraline | Neil | Gaiman | 2003 | 100 | 208 |
| 11 | What We Talk About When We Talk About Love: Stories | Raymond | Carver | 1981 | 23 | 176 |
| 12 | Where I'm Calling From: Selected Stories | Raymond | Carver | 1989 | 12 | 526 |
| 13 | White Noise | Don | DeLillo | 1985 | 49 | 320 |
| 14 | Cannery Row | John | Steinbeck | 1945 | 95 | 181 |
| 18 | fake_book | Freida | Harris | 2001 | 287 | 428 |
| 19 | Lincoln In The Bardo | George | Saunders | 2017 | 1000 | 367 |
+-----+-----+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)

mysql> SELECT * FROM Books WHERE released_year < 2004 AND released_year > 2015;
Empty set (0.00 sec)
```

```
mysql> SELECT * FROM Books WHERE released_year < 2004 OR released_year > 2015;
+-----+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | The Namesake | Jhumpa | Lahiri | 2003 | 32 | 291 |
| 2 | Norse Mythology | Neil | Gaiman | 2016 | 43 | 304 |
| 3 | American Gods | Neil | Gaiman | 2001 | 12 | 465 |
| 4 | Interpreter of Maladies | Jhumpa | Lahiri | 1996 | 97 | 198 |
| 7 | The Amazing Adventures of Kavalier & Clay | Michael | Chabon | 2000 | 68 | 634 |
| 9 | A Heartbreaking Work of Staggering Genius | Dave | Eggers | 2001 | 104 | 437 |
| 10 | Coraline | Neil | Gaiman | 2003 | 100 | 208 |
| 11 | What We Talk About When We Talk About Love: Stories | Raymond | Carver | 1981 | 23 | 176 |
| 12 | Where I'm Calling From: Selected Stories | Raymond | Carver | 1989 | 12 | 526 |
| 13 | White Noise | Don | DeLillo | 1985 | 49 | 320 |
| 14 | Cannery Row | John | Steinbeck | 1945 | 95 | 181 |
| 18 | fake_book | Freida | Harris | 2001 | 287 | 428 |
| 19 | Lincoln In The Bardo | George | Saunders | 2017 | 1000 | 367 |
+-----+-----+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)
```

IN OPERATOR - Replace Multiple OR Logic.

```
mysql> SELECT * FROM Books WHERE author_lname = "Carver" OR author_lname = "Lahiri" OR author_lname = "Smith";
+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+
| 1 | The Namesake | Jhumpa | Lahiri | 2003 | 32 | 291 |
| 4 | Interpreter of Maladies | Jhumpa | Lahiri | 1996 | 97 | 198 |
| 8 | Just Kids | Patti | Smith | 2010 | 55 | 304 |
| 11 | What We Talk About When We Talk About Love: Stories | Raymond | Carver | 1981 | 23 | 176 |
| 12 | Where I'm Calling From: Selected Stories | Raymond | Carver | 1989 | 12 | 526 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> SELECT * FROM Books WHERE author_lname IN ("Carver", "Lahiri", "Smith");
+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+
| 1 | The Namesake | Jhumpa | Lahiri | 2003 | 32 | 291 |
| 4 | Interpreter of Maladies | Jhumpa | Lahiri | 1996 | 97 | 198 |
| 8 | Just Kids | Patti | Smith | 2010 | 55 | 304 |
| 11 | What We Talk About When We Talk About Love: Stories | Raymond | Carver | 1981 | 23 | 176 |
| 12 | Where I'm Calling From: Selected Stories | Raymond | Carver | 1989 | 12 | 526 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

Single Column where we apply filter.

"Filter is being done on homogeneous data type."

NOT IN - Useful for replacing multiple !"AND" Logic.

2. Select all books not published in

2000,
2002,
2004,
2006,
2008,
2010,
2012,
2014,
2016.

```
mysql> SELECT title, released_year FROM books
    -> WHERE released_year != 2000 AND
    ->     released_year != 2002 AND
    ->     released_year != 2004 AND
    ->     released_year != 2006 AND
    ->     released_year != 2008 AND
    ->     released_year != 2010 AND
    ->     released_year != 2012 AND
    ->     released_year != 2014 AND
    ->     released_year != 2016;
+-----+-----+
| title | released_year |
+-----+-----+
| The Namesake | 2003 |
| American Gods | 2001 |
| Interpreter of Maladies | 1996 |
| The Circle | 2013 |
| A Heartbreaking Work of Staggering Genius | 2001 |
| Coraline | 2003 |
| What We Talk About When We Talk About Love: Stories | 1981 |
| Where I'm Calling From: Selected Stories | 1989 |
| White Noise | 1985 |
| Cannery Row | 1945 |
| Consider the Lobster | 2005 |
| fake_book | 2001 |
| Lincoln In The Bardo | 2017 |
+-----+-----+
13 rows in set (0.00 sec)
```

```
mysql> SELECT title, released_year FROM books
-> WHERE released_year NOT IN(2000,2002,2004,2006,2008,2010,2012,2014,2016);
+-----+-----+
| title | released_year |
+-----+-----+
| The Namesake | 2003 |
| American Gods | 2001 |
| Interpreter of Maladies | 1996 |
| The Circle | 2013 |
| A Heartbreaking Work of Staggering Genius | 2001 |
| Coraline | 2003 |
| What We Talk About When We Talk About Love: Stories | 1981 |
| Where I'm Calling From: Selected Stories | 1989 |
| White Noise | 1985 |
| Cannery Row | 1945 |
| Consider the Lobster | 2005 |
| fake_book | 2001 |
| Lincoln In The Bardo | 2017 |
+-----+
13 rows in set (0.00 sec)
```

% operator - Even or odd Value.

Even

```
mysql> SELECT title, released_year FROM books WHERE released_year%2 = 0;
+-----+-----+
| title | released_year |
+-----+-----+
| Norse Mythology | 2016 |
| Interpreter of Maladies | 1996 |
| A Hologram for the King: A Novel | 2012 |
| The Amazing Adventures of Kavalier & Clay | 2000 |
| Just Kids | 2010 |
| Oblivion: Stories | 2004 |
| 10% Happier | 2014 |
+-----+
7 rows in set (0.00 sec)
```

Odd

```
mysql> SELECT title, released_year FROM books WHERE released_year%2 != 0;
+-----+-----+
| title | released_year |
+-----+-----+
| The Namesake | 2003 |
| American Gods | 2001 |
| The Circle | 2013 |
| A Heartbreaking Work of Staggering Genius | 2001 |
| Coraline | 2003 |
| What We Talk About When We Talk About Love: Stories | 1981 |
| Where I'm Calling From: Selected Stories | 1989 |
| White Noise | 1985 |
| Cannery Row | 1945 |
| Consider the Lobster | 2005 |
| fake_book | 2001 |
| Lincoln In The Bardo | 2017 |
+-----+
12 rows in set (0.00 sec)
```

```

mysql> SELECT title, released_year FROM books WHERE released_year%2 <> 0;
+-----+-----+
| title | released_year |
+-----+-----+
| The Namesake | 2003 |
| American Gods | 2001 |
| The Circle | 2013 |
| A Heartbreaking Work of Staggering Genius | 2001 |
| Coraline | 2003 |
| What We Talk About When We Talk About Love: Stories | 1981 |
| Where I'm Calling From: Selected Stories | 1989 |
| White Noise | 1985 |
| Cannery Row | 1945 |
| Consider the Lobster | 2005 |
| fake_book | 2001 |
| Lincoln In The Bardo | 2017 |
+-----+-----+
12 rows in set (0.00 sec)

```

Odd

Read all books released in odd years after 2000.

```

mysql> SELECT title, released_year FROM books WHERE released_year >= 2000 AND
-> released_year NOT IN(2000,2002,2004,2006,2008,2010,2012,2014,2016);
+-----+-----+
| title | released_year |
+-----+-----+
| The Namesake | 2003 |
| American Gods | 2001 |
| The Circle | 2013 |
| A Heartbreaking Work of Staggering Genius | 2001 |
| Coraline | 2003 |
| Consider the Lobster | 2005 |
| fake_book | 2001 |
| Lincoln In The Bardo | 2017 |
+-----+-----+
8 rows in set (0.00 sec)

```

```

mysql> SELECT title, released_year FROM books
-> WHERE released_year >= 2000 AND
-> released_year % 2 != 0;
+-----+-----+
| title | released_year |
+-----+-----+
| The Namesake | 2003 |
| American Gods | 2001 |
| The Circle | 2013 |
| A Heartbreaking Work of Staggering Genius | 2001 |
| Coraline | 2003 |
| Consider the Lobster | 2005 |
| fake_book | 2001 |
| Lincoln In The Bardo | 2017 |
+-----+-----+
8 rows in set (0.00 sec)

```

CASE STATEMENTS -

It is being used to create a new column with some condition.

```
mysql> SELECT Title , Released_year,
-> CASE
-> WHEN released_year >= 2000 THEN "Modern Lit"
-> ELSE "20th Century Lit"
-> END AS Genre
-> FROM Books;
+-----+-----+-----+
| Title | Released_year | Genre |
+-----+-----+-----+
| The Namesake | 2003 | Modern Lit |
| Norse Mythology | 2016 | Modern Lit |
| American Gods | 2001 | Modern Lit |
| Interpreter of Maladies | 1996 | 20th Century Lit |
| A Hologram for the King: A Novel | 2012 | Modern Lit |
| The Circle | 2013 | Modern Lit |
| The Amazing Adventures of Kavalier & Clay | 2000 | Modern Lit |
| Just Kids | 2010 | Modern Lit |
| A Heartbreaking Work of Staggering Genius | 2001 | Modern Lit |
| Coraline | 2003 | Modern Lit |
| What We Talk About When We Talk About Love: Stories | 1981 | 20th Century Lit |
| Where I'm Calling From: Selected Stories | 1989 | 20th Century Lit |
| White Noise | 1985 | 20th Century Lit |
| Cannery Row | 1945 | 20th Century Lit |
| Oblivion: Stories | 2004 | Modern Lit |
| Consider the Lobster | 2005 | Modern Lit |
| 10% Happier | 2014 | Modern Lit |
| fake_book | 2001 | Modern Lit |
| Lincoln In The Bardo | 2017 | Modern Lit |
+-----+-----+-----+
19 rows in set (0.00 sec)
```

```
SELECT title, released_year,
CASE
    WHEN released_year >= 2000 THEN 'Modern Lit'
    ELSE '20th Century Lit'
END AS GENRE
FROM books;
```

```
+-----+-----+-----+
| title | stock_quantity | STOCK |
+-----+-----+-----+
| The Namesake | 32 | * |
| Norse Mythology | 43 | * |
| American Gods | 12 | * |
| Interpreter of Maladies | 97 | ** |
| A Hologram for the King: A Novel | 154 | *** |
| The Circle | 26 | * |
| The Amazing Adventures of Kavalier & Clay | 68 | ** |
| Just Kids | 55 | ** |
| A Heartbreaking Work of Staggering Genius | 104 | *** |
| Coraline | 100 | ** |
| What We Talk About When We Talk About Love: Stories | 23 | * |
| Where I'm Calling From: Selected Stories | 12 | * |
| White Noise | 49 | * |
| Cannery Row | 95 | ** |
| Oblivion: Stories | 172 | *** |
| Consider the Lobster | 92 | ** |
| 10% Happier | 29 | * |
| fake_book | 287 | *** |
| Lincoln In The Bardo | 1000 | *** |
+-----+-----+-----+
```

CASE Statement,
BETWEEN 0-50: *
BETWEEN 51-100: **
ELSE: ***

```

mysql> SELECT Title, Stock_Quantity,
-> CASE
-> WHEN stock_quantity < 50 THEN "*"
-> WHEN stock_quantity BETWEEN 50 AND 100 THEN "**"
-> ELSE "***"
-> END AS Stock
-> FROM Books;
+-----+-----+
| Title          | Stock_Quantity | Stock |
+-----+-----+
| The Namesake      |            32 |   *
| Norse Mythology    |            43 |   *
| American Gods     |            12 |   *
| Interpreter of Maladies |        97 |  **
| A Hologram for the King: A Novel |      154 | ***
| The Circle         |            26 |   *
| The Amazing Adventures of Kavalier & Clay |      68 |  **
| Just Kids          |            55 |  **
| A Heartbreaking Work of Staggering Genius |      104 | ***
| Coraline           |            100 |  **
| What We Talk About When We Talk About Love: Stories |      23 |   *
| Where I'm Calling From: Selected Stories |      12 |   *
| White Noise         |            49 |   *
| Cannery Row        |            95 |  **
| Oblivion: Stories    |          172 | ***
| Consider the Lobster |            92 |  **
| 10% Happier         |            29 |   *
| fake_book           |          287 | ***
| Lincoln In The Bardo |        1000 | ***
+-----+-----+
19 rows in set (0.00 sec)

```