MySQL - Aggregation Challenge + Data Types - Lecture 16

Challenge Time

1. Print the number of books in the database

```
mysql> SELECT COUNT(*) FROM Books;
+----------+
| COUNT(*) |
+----------+
|       19 |
+----------+
1 row in set (0.01 sec)

mysql> SELECT COUNT(*) AS NumberOfBooks FROM Books;
+---------------+
| NumberOfBooks |
+---------------+
|            19 |
+---------------+
1 row in set (0.01 sec)
```

2. Print out how many books were released in each year

```
mysql> SELECT Released_year , COUNT(*) AS Books_Count FROM Books GROUP BY released_year ORDER BY 2 DESC;
+---------------+-------------+
| Released_year | Books_Count |
+---------------+-------------+
|          2001 |           3 |
|          2003 |           2 |
|          2016 |           1 |
|          1996 |           1 |
|          2012 |           1 |
|          2013 |           1 |
|          2000 |           1 |
|          2010 |           1 |
|          1981 |           1 |
|          1989 |           1 |
|          1985 |           1 |
|          1945 |           1 |
|          2004 |           1 |
|          2005 |           1 |
|          2014 |           1 |
|          2017 |           1 |
+---------------+-------------+
16 rows in set (0.00 sec)
```

3. Print out the total number of books in stock

```
mysql> SELECT SUM(stock_quantity) FROM Books;
+--------------------+
| SUM(stock_quantity) |
+--------------------+
|               2450 |
+--------------------+
1 row in set (0.00 sec)

mysql> SELECT SUM(stock_quantity) AS BooksInStock FROM Books;
+--------------+
| BooksInStock |
+--------------+
|         2450 |
+--------------+
1 row in set (0.00 sec)
```

4. Find the average released_year for each author

```
mysql> SELECT CONCAT(author_fname, " ", author_lname) AS FullName,
    -> ROUND(AVG(released_year),0) AS Avg_Year From Books
    -> GROUP BY 1 ORDER BY 2;
+----------------------+----------+
| FullName             | Avg_Year |
+----------------------+----------+
| John Steinbeck       |     1945 |
| Raymond Carver       |     1985 |
| Don DeLillo          |     1985 |
| Jhumpa Lahiri        |     2000 |
| Michael Chabon       |     2000 |
| Freida Harris        |     2001 |
| David Foster Wallace |     2005 |
| Neil Gaiman          |     2007 |
| Dave Eggers          |     2009 |
| Patti Smith          |     2010 |
| Dan Harris           |     2014 |
| George Saunders      |     2017 |
+----------------------+----------+
12 rows in set (0.00 sec)
```

5. Find the full name of the author who wrote the longest book

```
mysql> SELECT CONCAT(author_fname, " ", author_lname) AS FullName,
    -> MAX(pages) AS LongestBook FROM Books GROUP BY 1 ORDER BY 2 DESC LIMIT 1;
+----------------+-------------+
| FullName       | LongestBook |
+----------------+-------------+
| Michael Chabon |         634 |
+----------------+-------------+
1 row in set (0.00 sec)
```

6. Make This Happen

year	# books	avg pages
1945	1	181.0000
1981	1	176.0000
1985	1	320.0000
1989	1	526.0000
1996	1	198.0000
2000	1	634.0000
2001	3	443.3333
2003	2	249.5000
2004	1	329.0000
2005	1	343.0000
2010	1	304.0000
2012	1	352.0000
2013	1	504.0000
2014	1	256.0000
2016	1	304.0000
2017	1	367.0000

```
mysql> SELECT released_year as Year, Count(*) AS '# books',
    -> AVG(Pages) AS 'avg pages' FROM Books
    -> GROUP BY 1 ORDER BY 1;
+------+---------+-----------+
| Year | # books | avg pages |
+------+---------+-----------+
| 1945 |       1 |  181.0000 |
| 1981 |       1 |  176.0000 |
| 1985 |       1 |  320.0000 |
| 1989 |       1 |  526.0000 |
| 1996 |       1 |  198.0000 |
| 2000 |       1 |  634.0000 |
| 2001 |       3 |  443.3333 |
| 2003 |       2 |  249.5000 |
| 2004 |       1 |  329.0000 |
| 2005 |       1 |  343.0000 |
| 2010 |       1 |  304.0000 |
| 2012 |       1 |  352.0000 |
| 2013 |       1 |  504.0000 |
| 2014 |       1 |  256.0000 |
| 2016 |       1 |  304.0000 |
| 2017 |       1 |  367.0000 |
+------+---------+-----------+
16 rows in set (0.00 sec)
```

Understanding the Data Types....

dd/mm/YYYY HH:MM:SS - Timestamp [Date Time]

Date Functions

Char(1) - True / False

Value	Char(4)	Storage	Varchar(4)	Storage
''	' '	4 bytes	''	1 byte
'ab'	'ab '	4 bytes	'ab'	3 bytes
'abcd'	'abcd'	4 bytes	'abcd'	5 bytes

Data Type	Memory Needed	Precision Issues
FLOAT	4 Bytes	~7 digits
DOUBLE	8 Bytes	~15 digits