

# Investigate a Relational Database

**In this project, we have used SQL to explore a database related to movie rentals. SQL code has been written in order to run SQL queries and answer interesting questions about the Sakila DVD Rental database. The data obtained by the queries has been downloaded to csv files. These files were then loaded into Tableau, as well as, a Jupyter Notebook to prepare vizualizations to demonstrate our findings.**

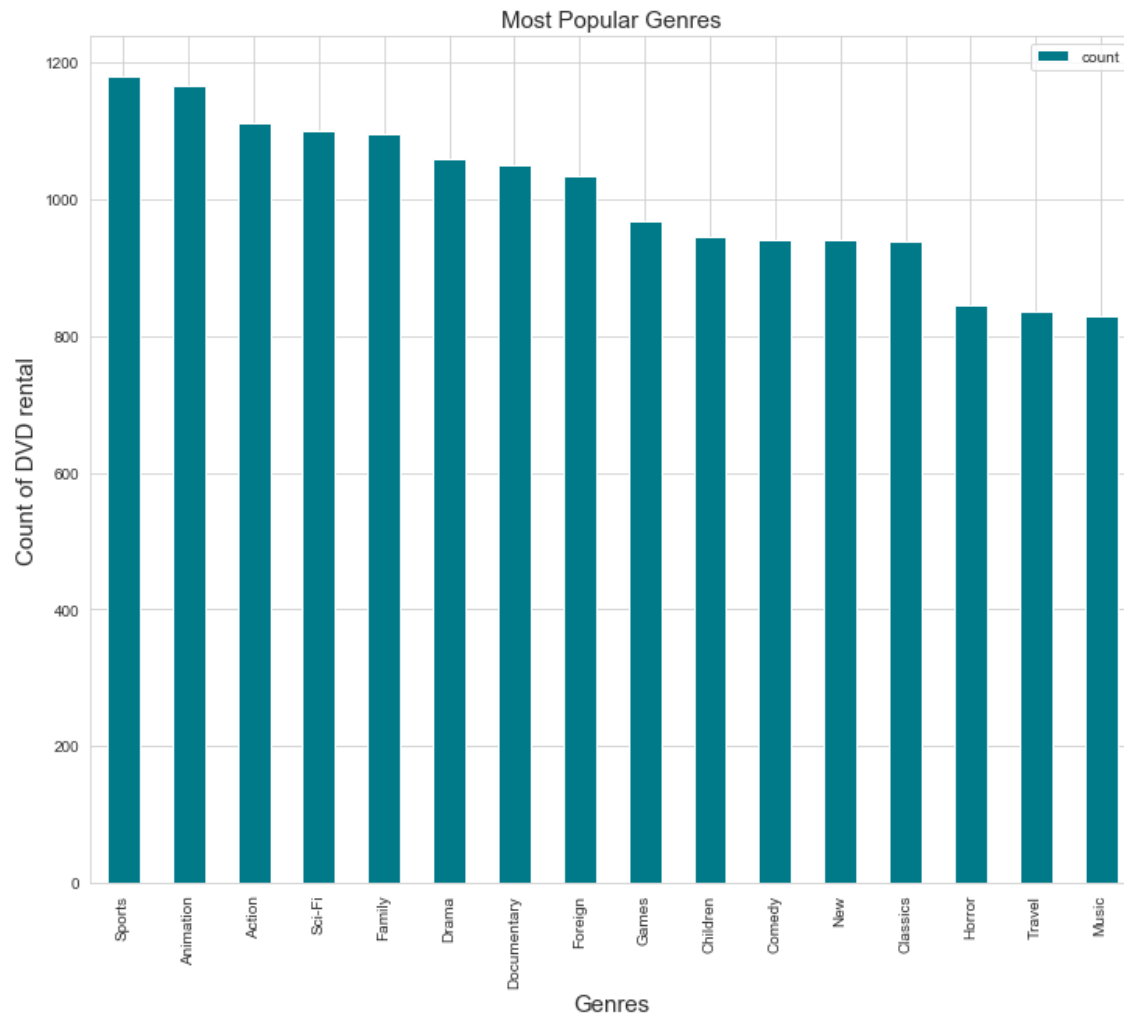


# Questions of Interest:

- - Which genres were the most popular? (which genres were most rented)
- - Was the popularity of each genre constant over time?
- - What was the revenue made by each genre?
- - What percentage of revenue was each genre responsible for?
- - What were the most rented films? Top 10.
- - Which were the 10 least popular films?
- - Which films were among the top 20 films which brought in the most money?
- - Which of the two stores had the highest sales by month
- - Which countries had the most rentals?
- - Which countries had the least rentals?
- - Out of the countries who had the most rentals, which countries attributed to the most revenue received? Top 15.
- - What was the total monthly payment received by the top 10 grossing countries?
- - Most popular genre by top 10 grossing countries

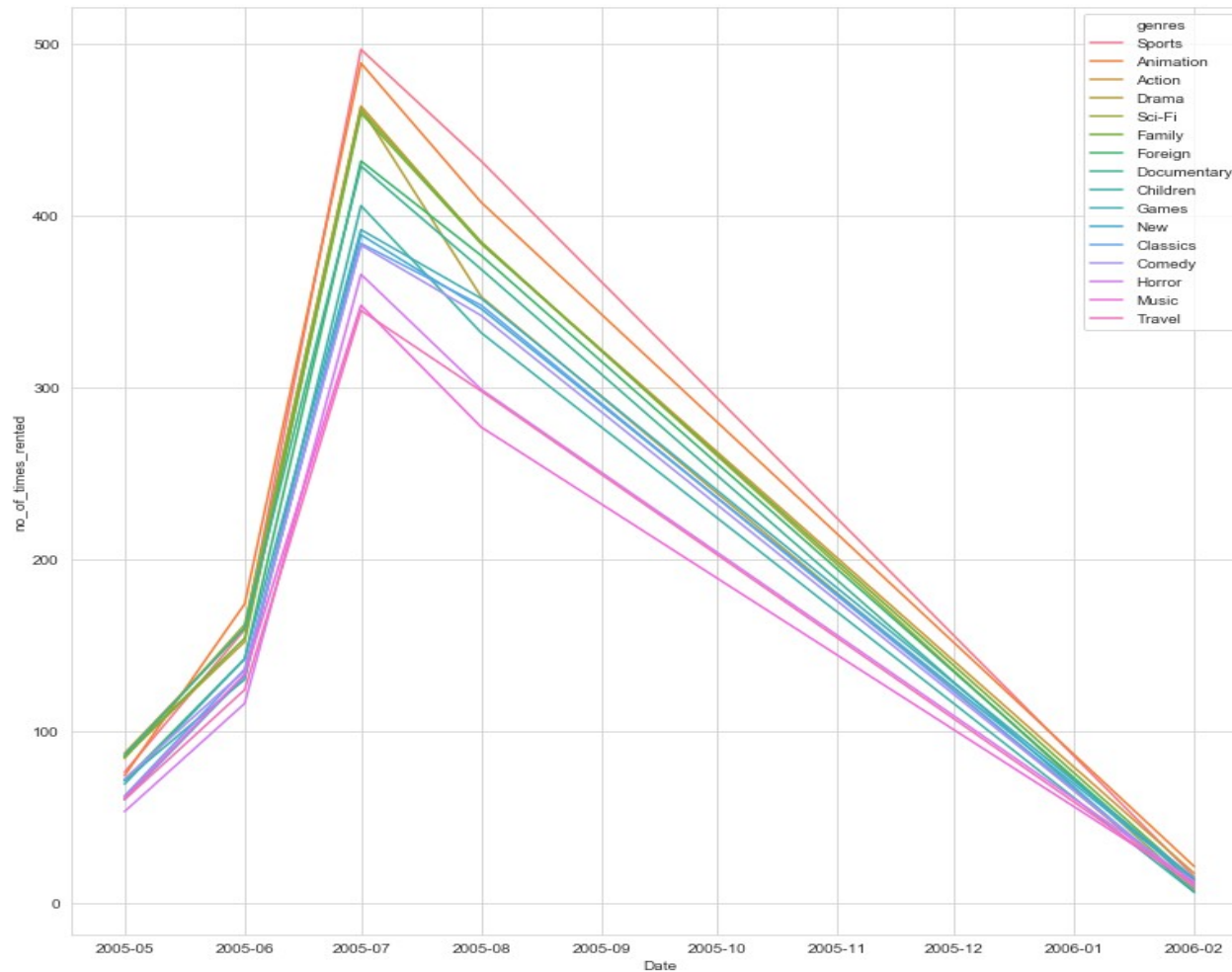


# Which genres were the most popular? (which genres were most rented)



- **The most popular genre overall was Sports, with this genre being rented out 1179 times. This was followed by Animation – 1166, Action – 1112, Sci-Fi – 1101, and Family – 1096. These genres were the 5 most popular. The least popular genre was Music, which was only rented out 830 times.**

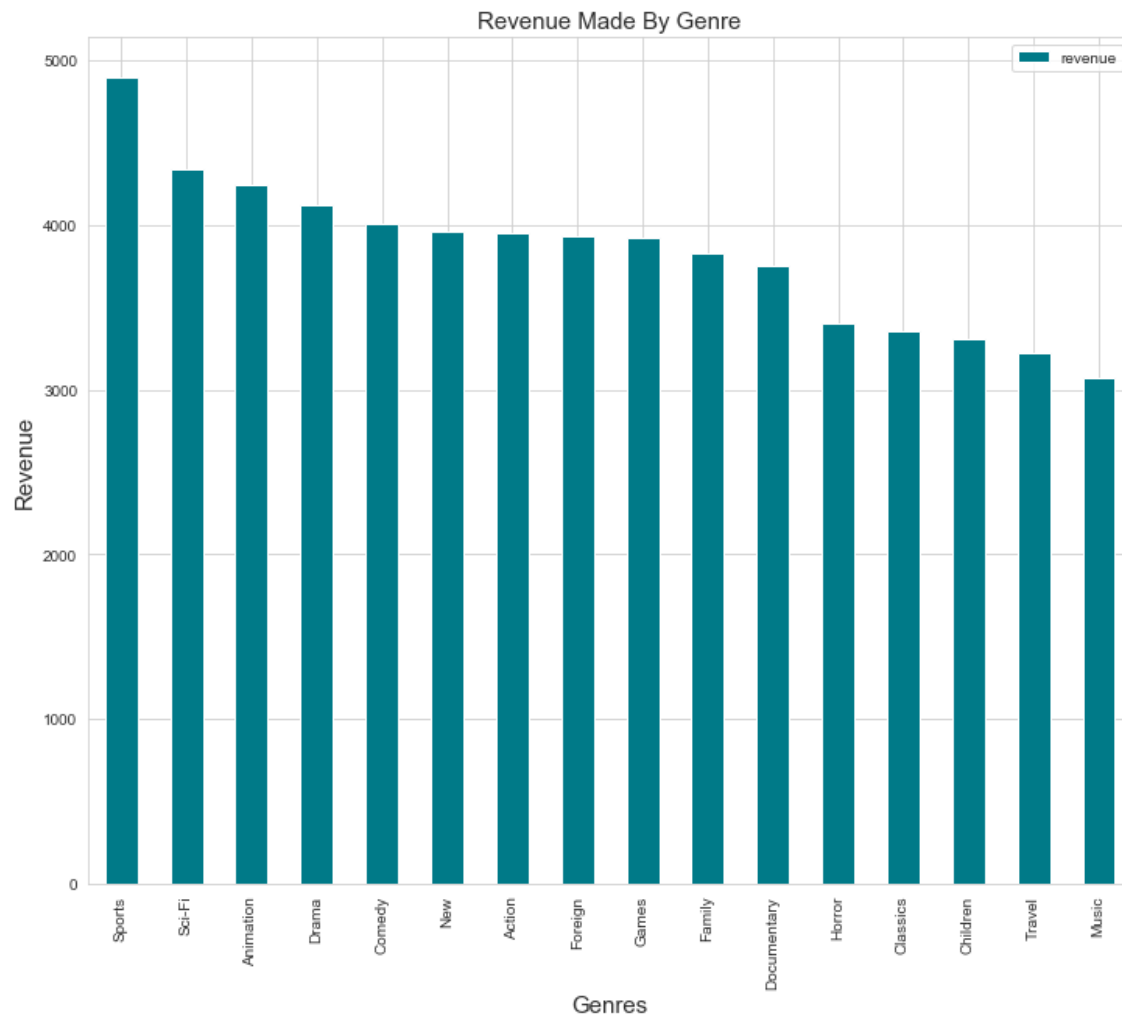
# Was the popularity of each genre constant over time?



We can see here that the Sports genre stayed the most popular over time. It is interesting to note that the popularity of every genre peaked in July 2005. Thereafter, there is a gradual decrease in popularity for all genres from August 2005 onwards.



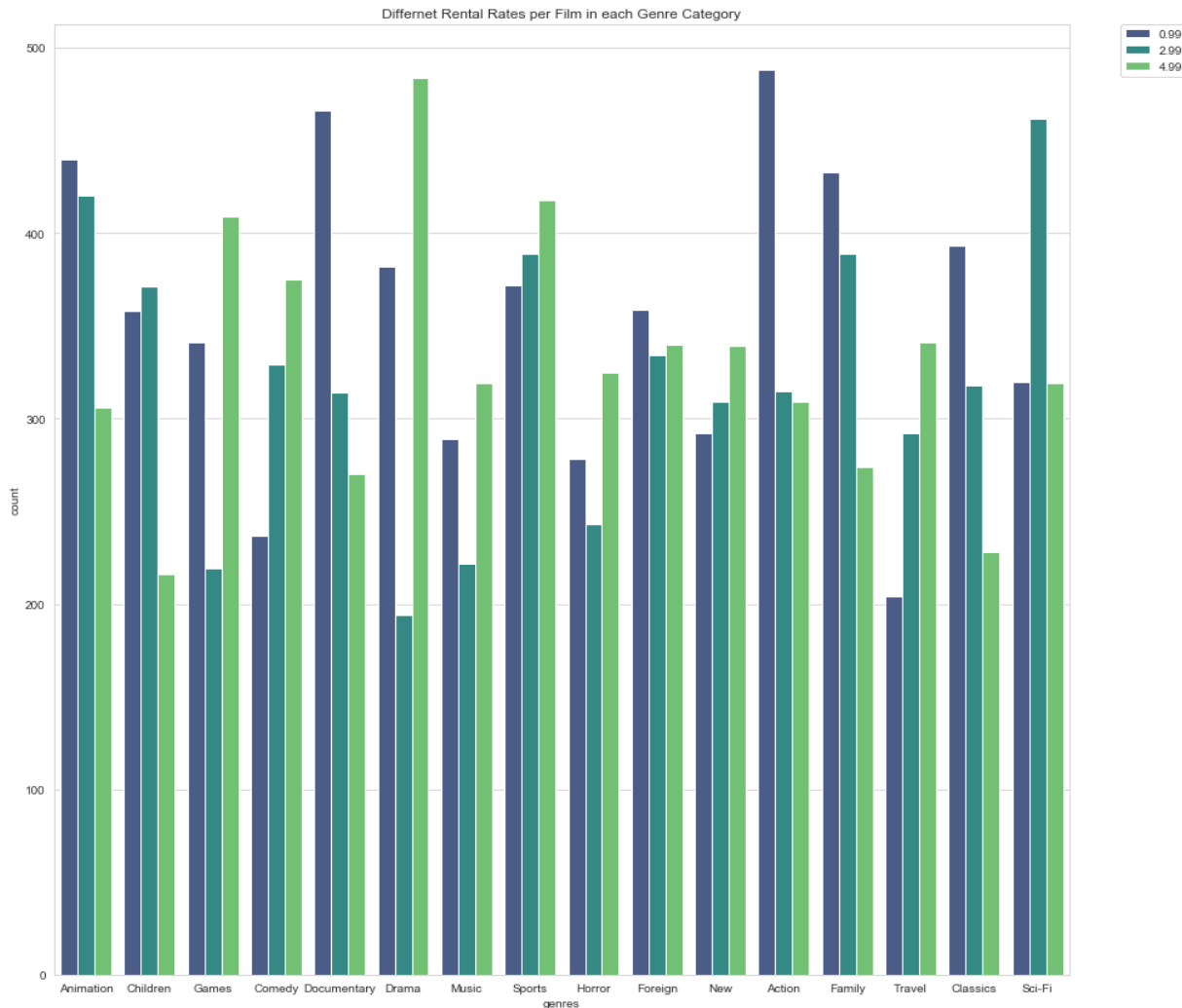
# What was the revenue made by each genre?



The top 5 genres that brought in the most revenue were, Sports, Sci-Fi, Animation, Drama and Comedy. Bringing in a total revenue of 4892.19, 4336.01, 4245.31, 4118.46, and 4002.48, respectively.

- Even though Animation, Action, Sci-Fi, and Family came in the top 5 of most popular genres after Sports. This was not the case for the Top earning genres. Animation was 3<sup>rd</sup> in this list, Action was 7<sup>th</sup>. Sci-fi, interestingly, was second to Sports, even though it was only the 4<sup>th</sup> most popular movie. Lastly, Family was 10<sup>th</sup> in the list of highest grossing movies.

# It's interesting to note that in the genres category there are 3 different rates for each genre.



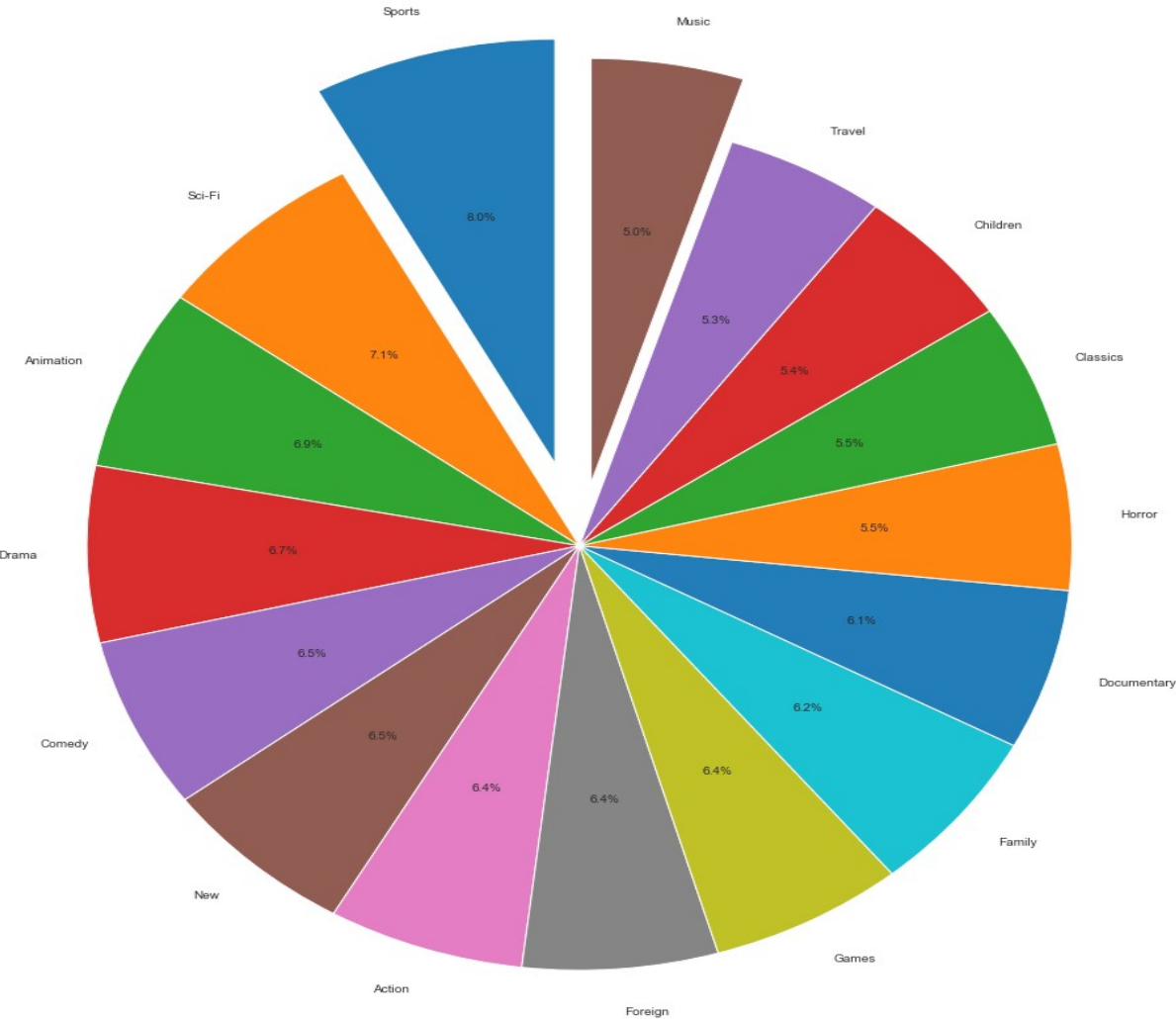
There are 3 groups of different prices, 4.99 per movie, 2.99 per movie and 0.99 per movie

- Here in the graph we can see which movie genres had been most rented out at the different rental rates.
- We can see here that despite the fact that Drama had the most movies rented with the highest rental rate of 4.99, it still was not the highest grossing genre.
- Action had the highest count of movies rented at the lowest rate of 0.99, this may be why it was the 3<sup>rd</sup> most rented movie. Also, this genre still manages to make the top 10 grossing genres

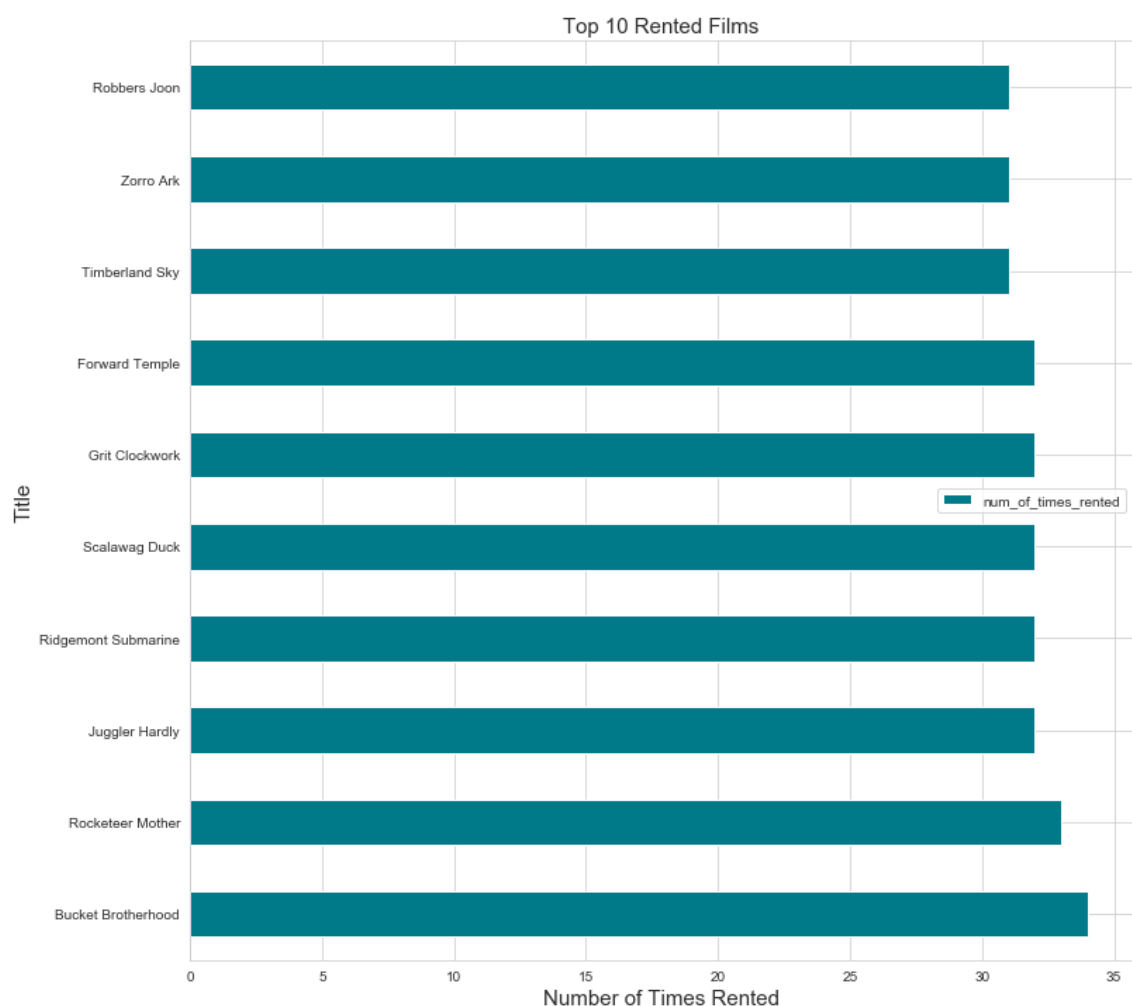


# What percentage of revenue was each genre responsible for?

- We can see that the Sports genre was responsible for the highest percentage of revenue at 8% and music was responsible for the smallest portion of revenue at 5%. Additionally, Travel, Children, Classics and Horror also had the lowest percentages of revenue.



# What were the most rented films? Top 10

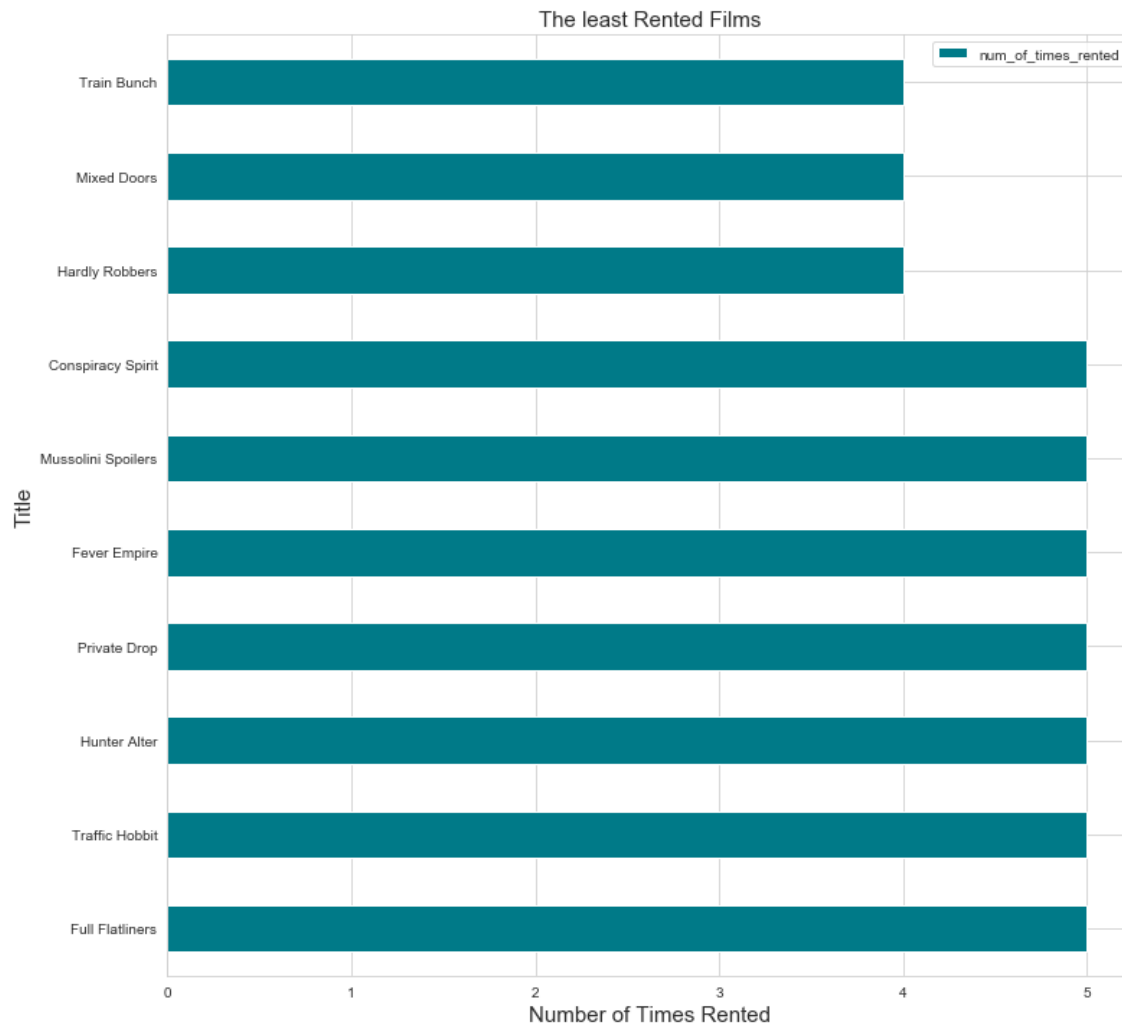


- The most rented film, and therefore, the most popular film is **Bucket Brotherhood**, which was rented out a total of **34** times.





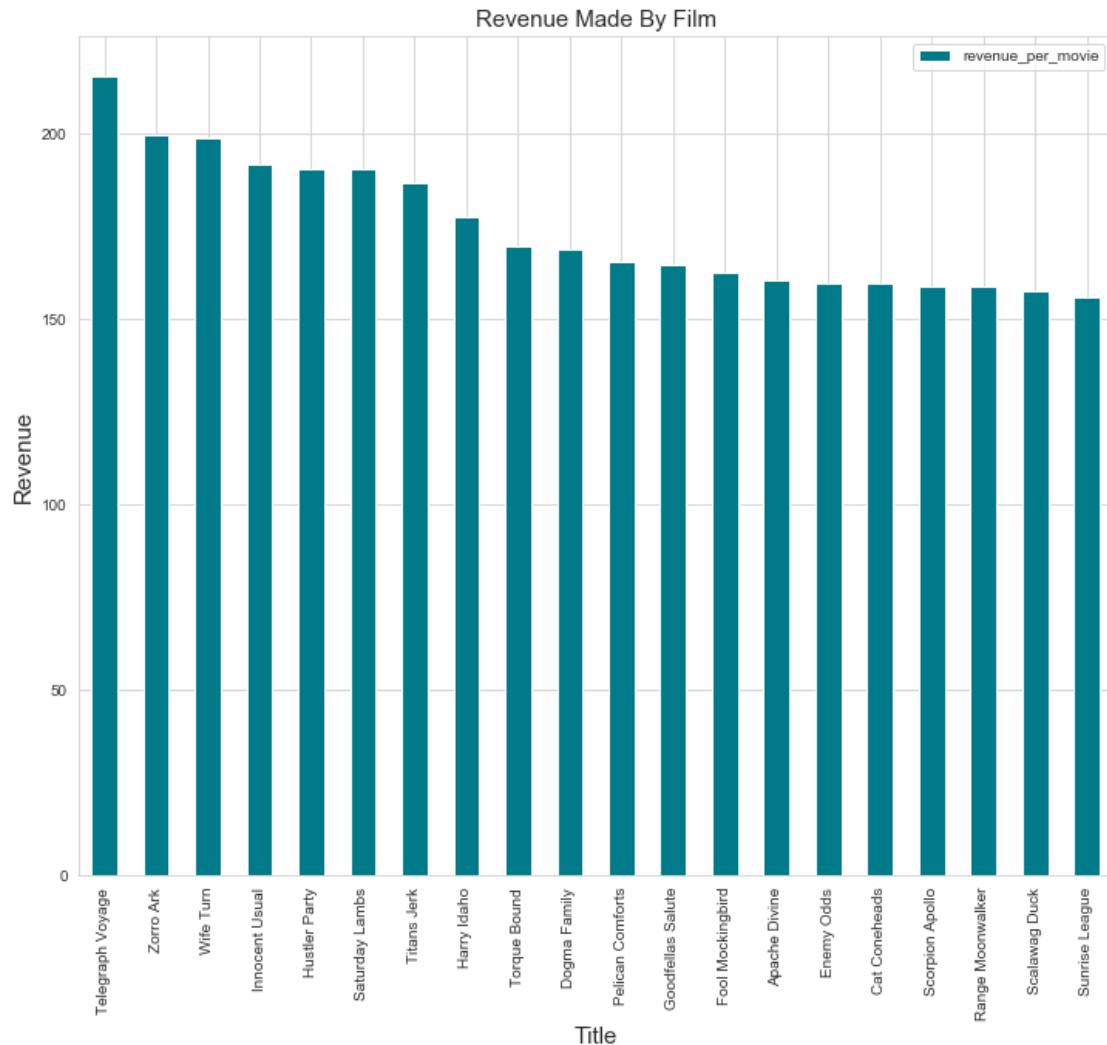
# Which were the 10 least popular films?



- By contrast, the least rented film was **Train Bunch**, which was only rented out once. We can see here that two more movies take the spot at the bottom too.

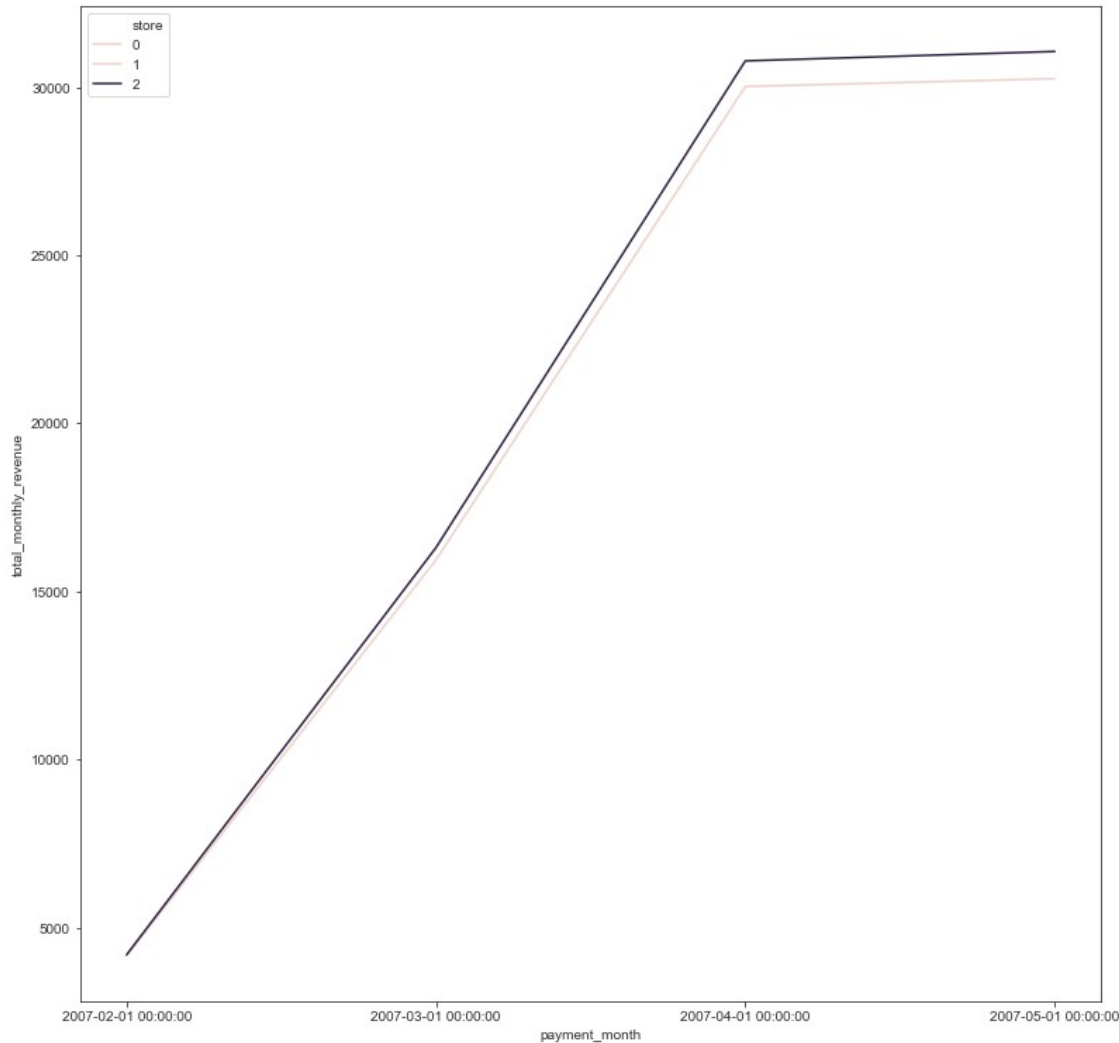


# Which films were among the top 20 films which brought in the most money?



- Here we can see the films that generated the most revenue, and none of which were in the top 10 most rented films. The film Telegraph Voyage brought in the most revenue at 215.75 and was only rented 25 times as opposed to Bucket Brotherhood that was rented 34 times.

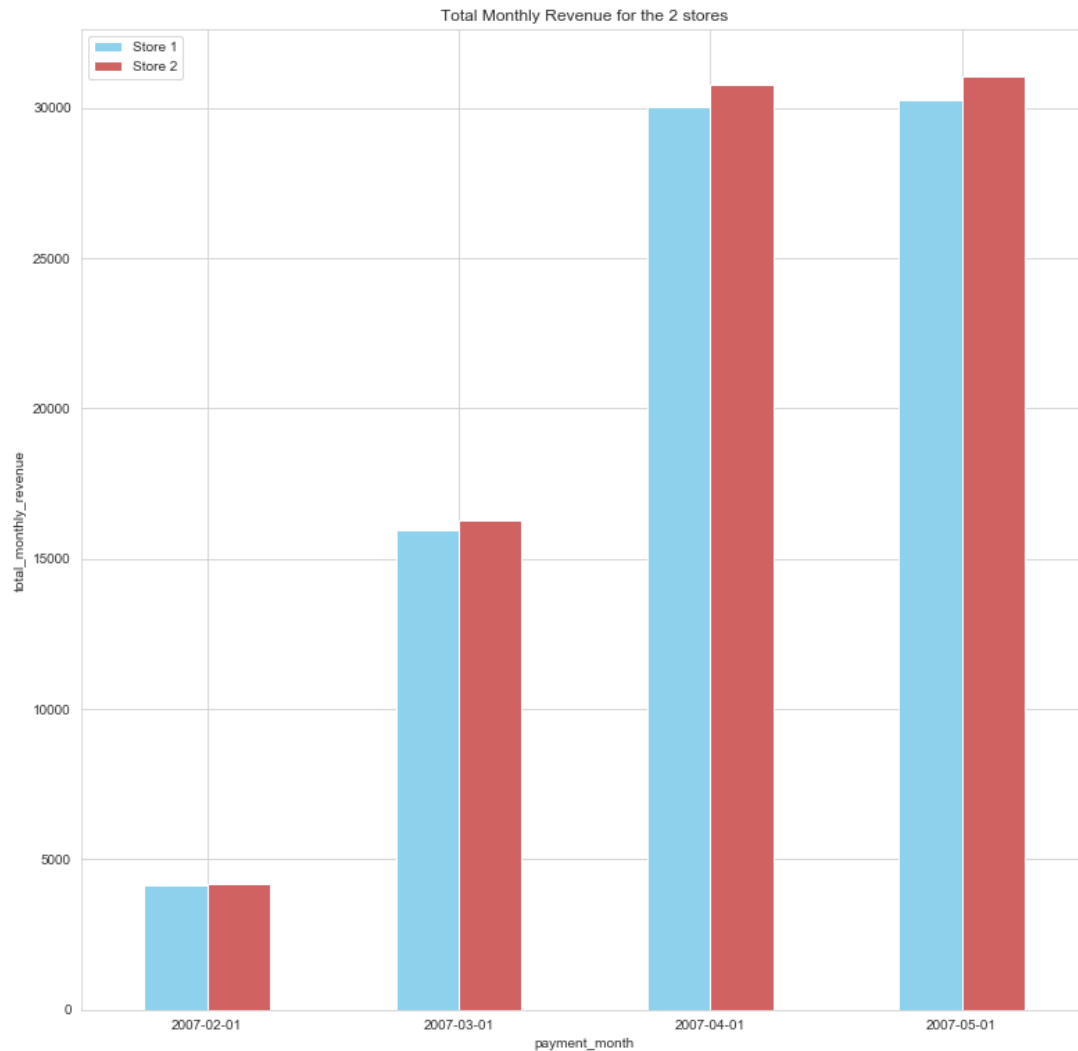
# Which of the two stores had the highest sales by month?



- Here we can see that store 2, over the four month period, consistently, had higher sales a month than store 1. However, there is not much disparity between the monthly sales of the two stores. In the next slide we will take a closer look at the differences in sales by month.



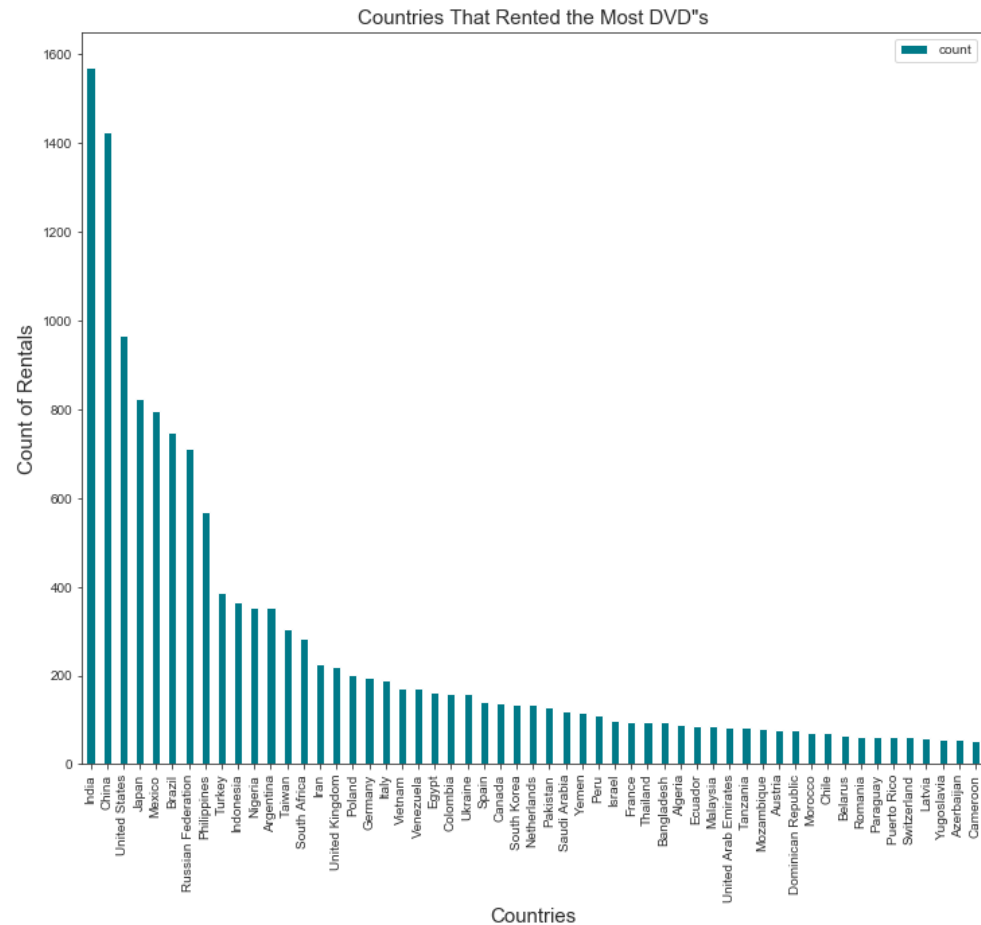
# Differences in sales by month for the two stores.



- We can see in this graph that store two had slightly higher sales than store one across all months.
- Sales for both stores gradually increase from February to May.

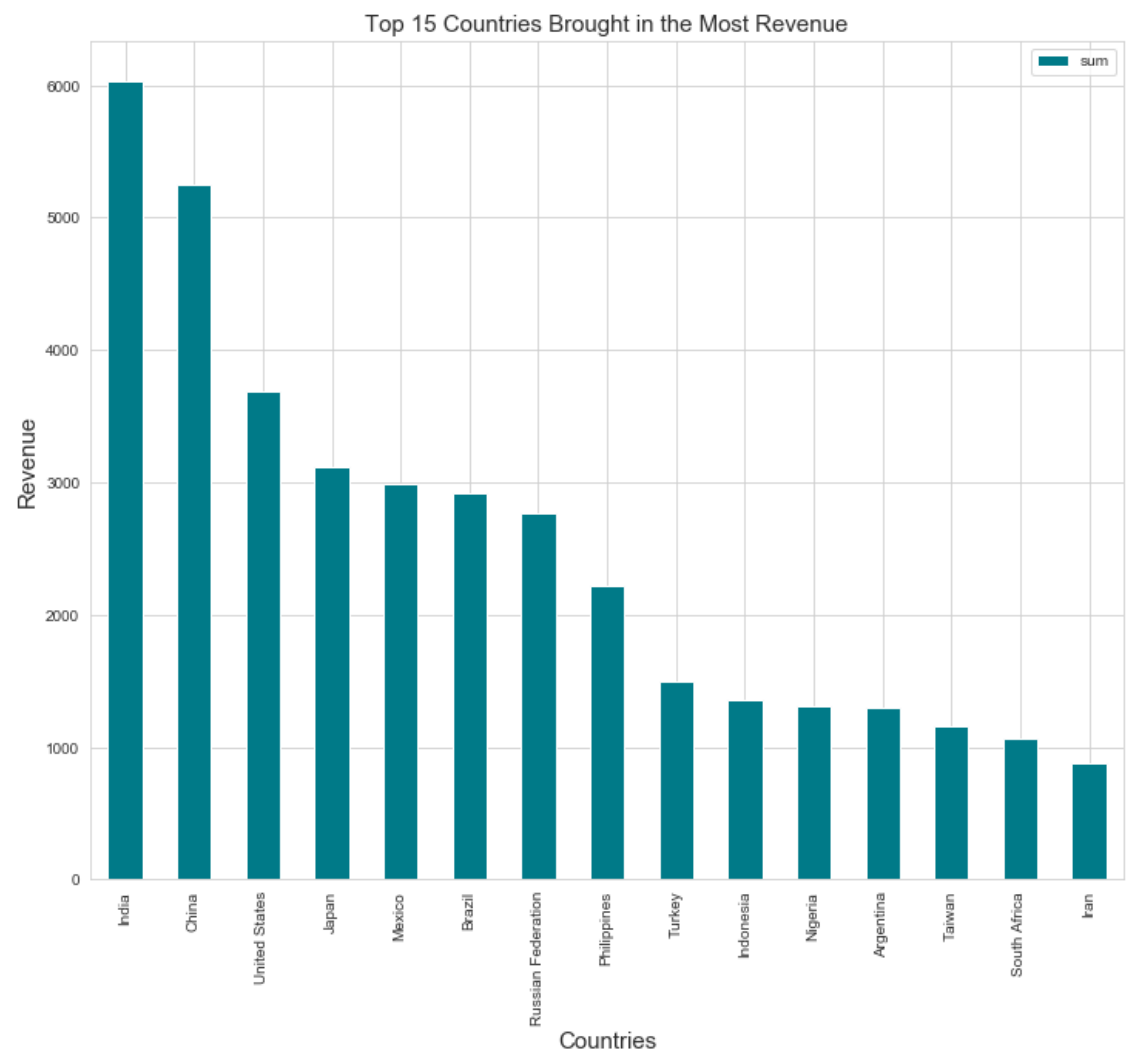


# Which countries had the most rentals?



- Here we have the countries you had the most DVD rentals
- The country with the most rentals was India with a total of 1572 rentals. Followed by China – 1426, United States – 968, Japan – 825 and Mexico – 796.

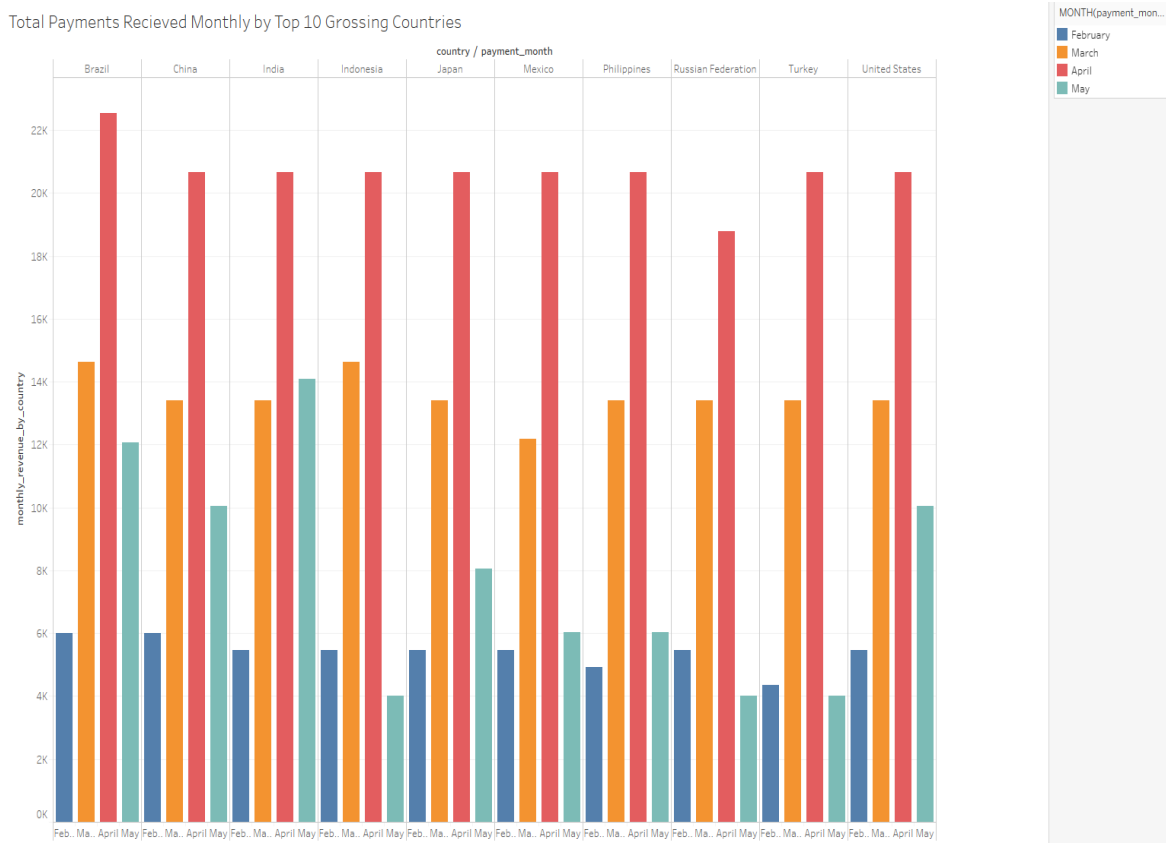
# Out of the countries who had the most rentals, which countries attributed to the most revenue received? Top 15



- The same five countries who had the most rentals, also attributed to the most revenue received. This is to be expected, because if we take the number of rentals for these countries as well as rental rates, this outcome only makes sense.



# What was the total monthly payment received by the top 10 grossing countries?

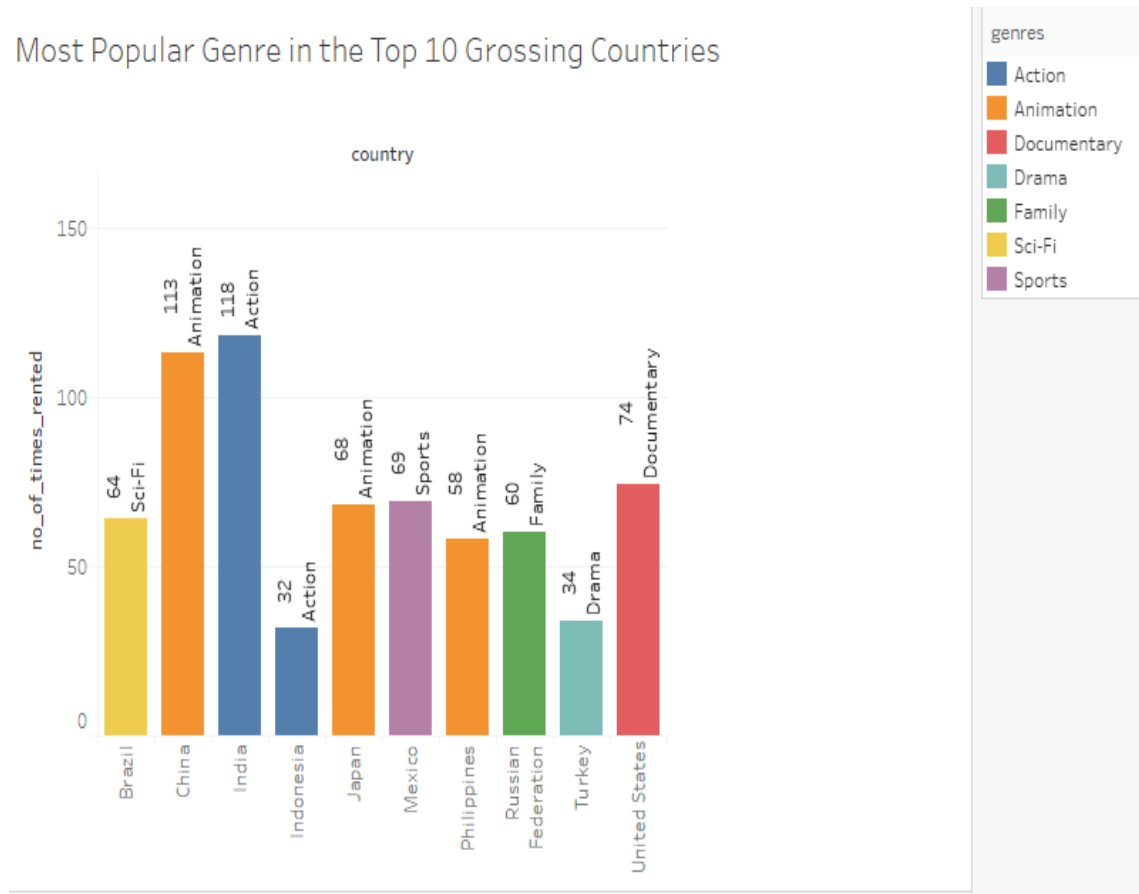


- We can see here that most of the payments received was in April. The highest payment received in this month was from Brazil.



# Most popular genre by top 10 grossing countries.

Most Popular Genre in the Top 10 Grossing Countries



- The most popular genres amongst the top 10 grossing countries was Animation, which was rented 113 times in China, 68 times in Japan and 58 times in the Philippines.
- The second most popular genre was Action, which was rented 118 times in India and 32 times in Indonesia.
- This is interesting because, we showed that the most popular genres overall was Sports, Animation and then Action. However, between the top grossing countries sports was not even documented as being one of the popular genres. However, Animation was the second most popular genre overall, therefore, it's not surprising that it would be the top genre in the top grossing countries