

# Predicting Movie Box Office Gross

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# Data

- Box Office Mojo
- The Numbers

**What do we have?**

## Top Grossing Movies

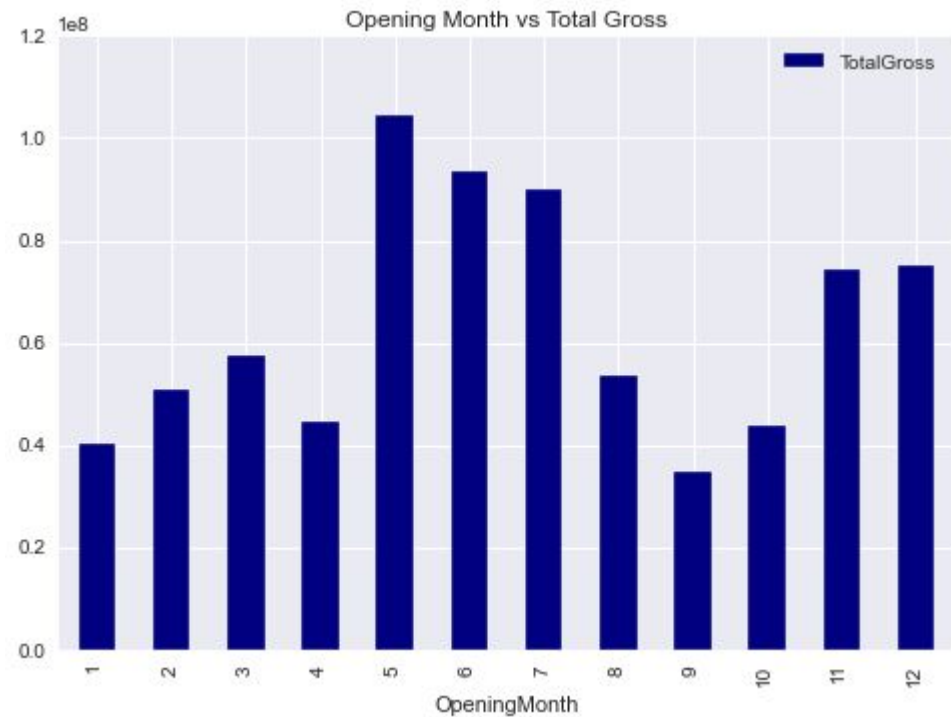
2009-2014

1200 → 775 Movies

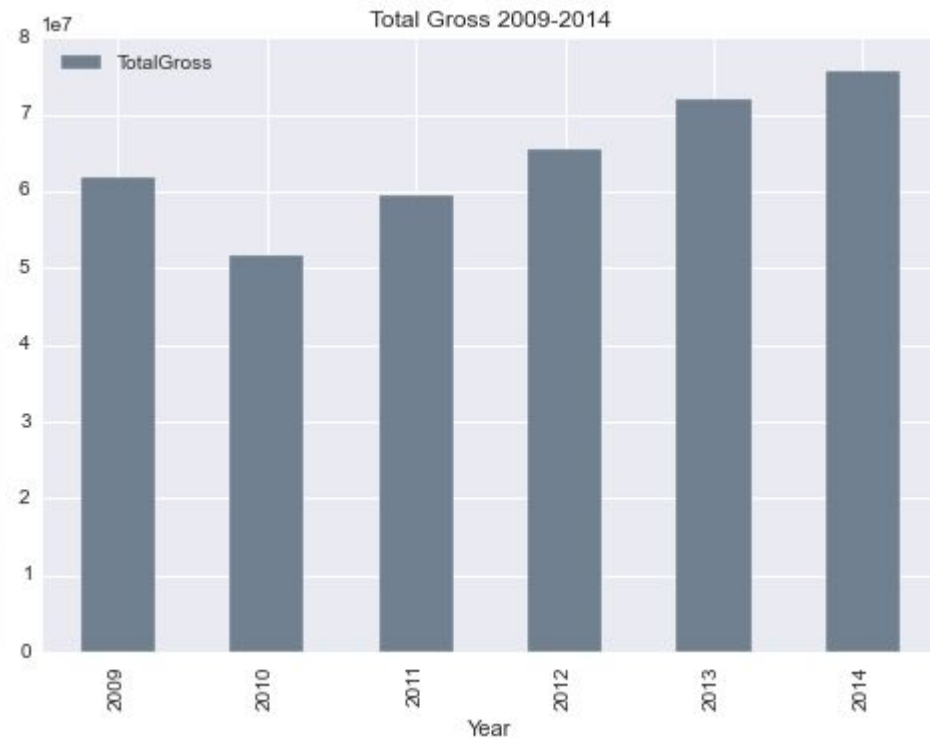
- Total Gross
- Opening Weekend Gross
- Production Budget
- Total # of Theaters
- Opening Theaters
- Release Date
- Weeks In Release

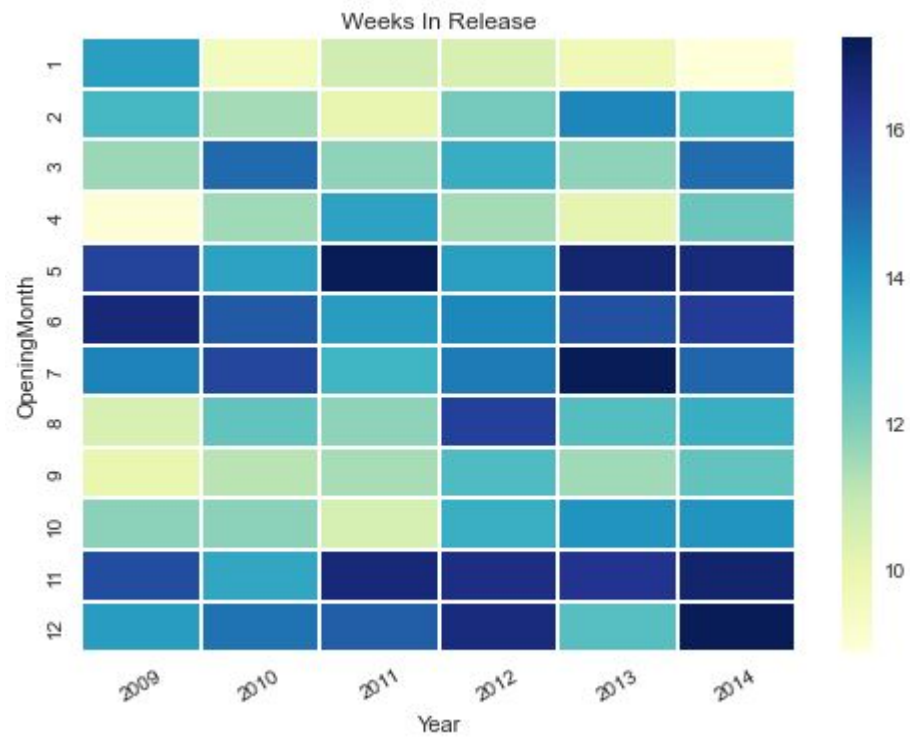
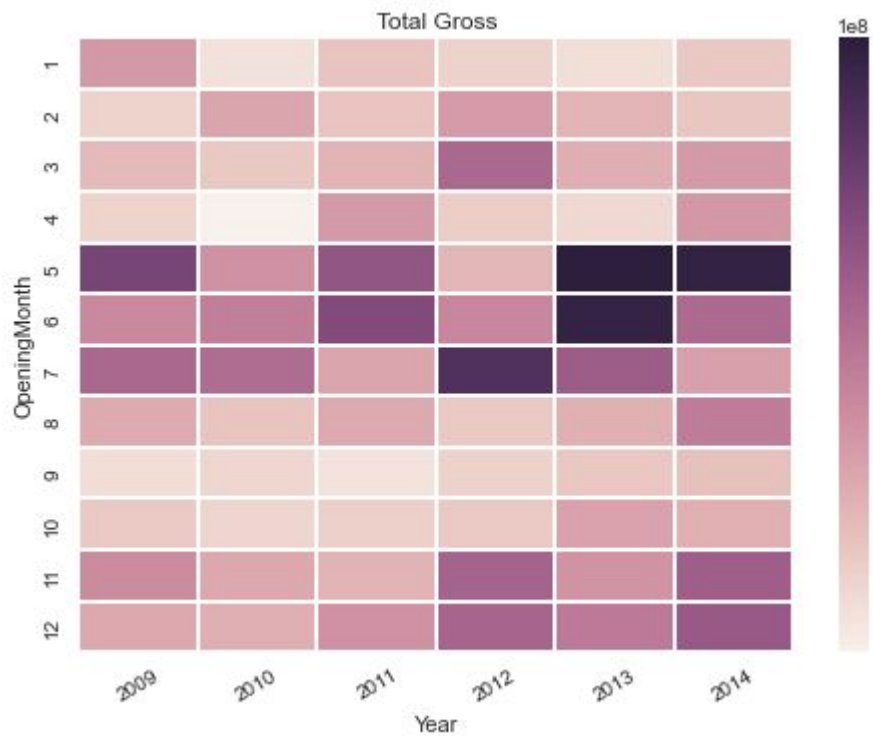
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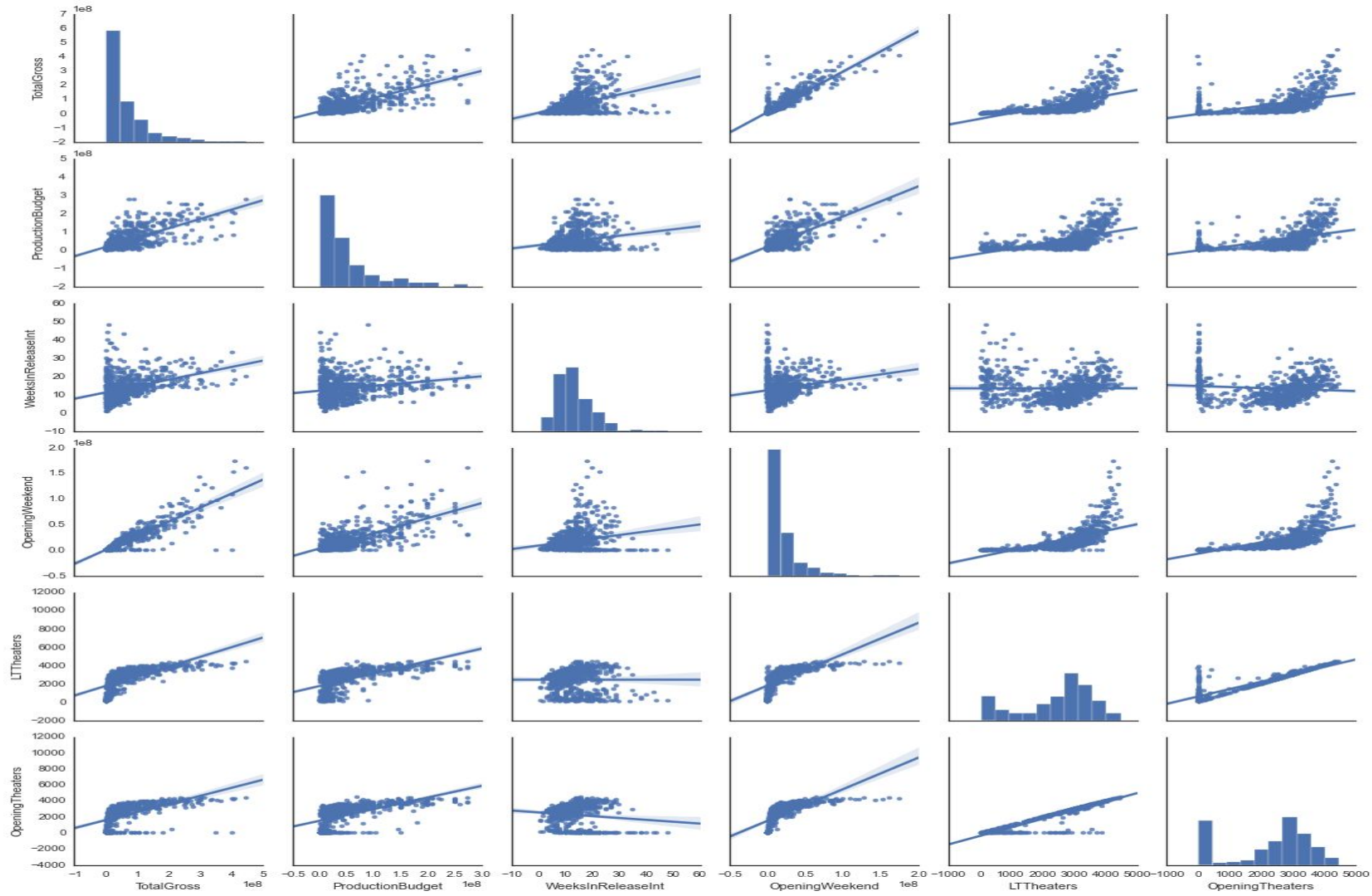
# Opening Month



# Year



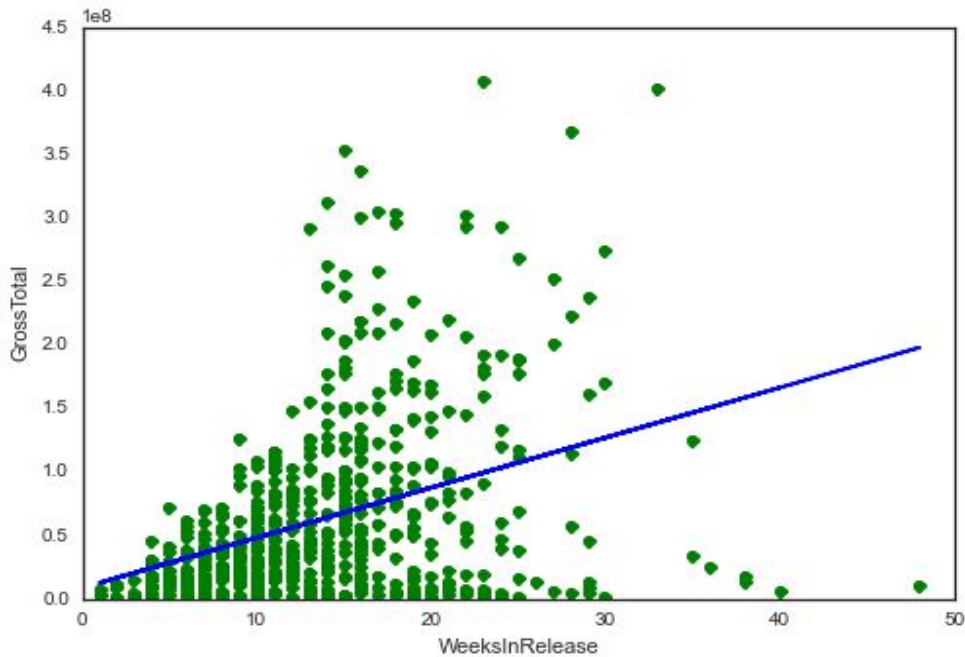




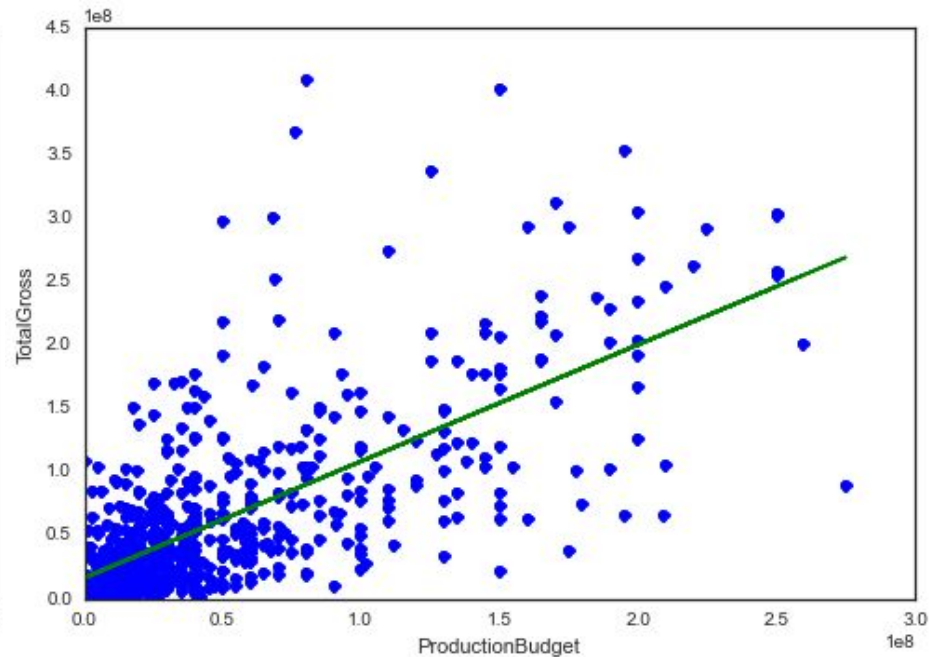
**“As long as you don’t  
choose, everything  
remains possible.”**

**Mr. Nobody**





- $R^2 = 0.137$
- Test MSE =  $5.86979e+15$
- Train MSE =  $4.15038e+15$



- $R^2 = 0.485$
- Test MSE =  $8.74212e+28$
- Train MSE =  $8.18719e+28$

$$\frac{\text{Total Gross}}{\sim \text{Total Number of } \mathbf{Theaters} + \text{Production Budget}}$$

- R2: 0.575
- Test MSE: 3.2850323639e+15
- Train MSE: 2.0426924628e+15

$$\frac{\text{Total Gross}}{\sim \text{Total Number of } \mathbf{Weeks} + \text{Production Budget}}$$

- R2: 0.535
- Test MSE: 3.15527986901e+15
- Train MSE: 2.2358457022e+15

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**An increase of \$1M in budget is  
worth about \$0.6M at the  
domestic box office.**

At first, that looks like a loss.  
But keep in mind that this does not  
include international box office or  
DVD sales.

**An increase of 1,000 theaters is  
worth about \$22M at the box  
office.**

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Wayne Miller:  
Children in a movie  
theater, USA.  
1958.