

Practice Assignment: Visualizing Quantitative Data

How much does it cost to make an action movie? To answer this question, let's look at the distribution of movie budgets for 892 action movies released from 1986–2016. Go to spreadsheet DCMP_STAT_3C_US_Action_Movies.¹

The movie budgets are listed in dollars.

- 1) What was the budget of the movie *Transformers*?
 - a) \$1,500,000
 - b) \$15,000,000
 - c) \$150,000,000
 - d) \$1,500,000
- 2) Which of the following graphical displays is the most appropriate and useful to visualize the distribution of movie budgets in these data?
 - a) Histogram
 - b) Bar chart
 - c) Dotplot
 - d) Pie chart
- 3) Briefly explain why a dotplot is not useful to visualize the distribution of movie budgets in these data.

Go to the *Describing and Exploring Quantitative Variables* tool at https://lumen-learning.shinyapps.io/eda_quantitative/ and create a histogram using the following inputs:

- Under “Enter Data,” select “Enter Own.”
 - Name the variable appropriately.
 - Copy and Paste the appropriate data from spreadsheet DCMP_STAT_3C_US_Action_Movies.
- 4) Use the histogram you created to write down two or three observations about the distribution of movie budgets.

¹ Grijalva, D. (2018). *Movie industry: Three decades of movies*. Kaggle. <https://www.kaggle.com/danielgrijalvas/movies/>

- 5) Use the histogram from Question 4 to answer the following questions. Adjust bin size as needed.

Note: You can see how many observations are in each bin by hovering over the bar associated with the bin.

Part A: About how many movies have budgets between \$25 and \$100 million? Select the closest response.

- a) 450
- b) 500
- c) 550
- d) 600

Part B: About what percentage of movies have budgets of \$200 million or greater? Select the closest response.

- a) 3%
- b) 10%
- c) 15%
- d) 20%

Part C: What is the approximate range of the distribution? The range is the **maximum value – minimum value**. Select the closest response.

- a) \$200 million
- b) \$250 million
- c) \$300 million
- d) \$350 million

Part D: About 50% of the movies have a budget less than _____.

- a) \$20 million
- b) \$40 million
- c) \$80 million
- d) \$100 million