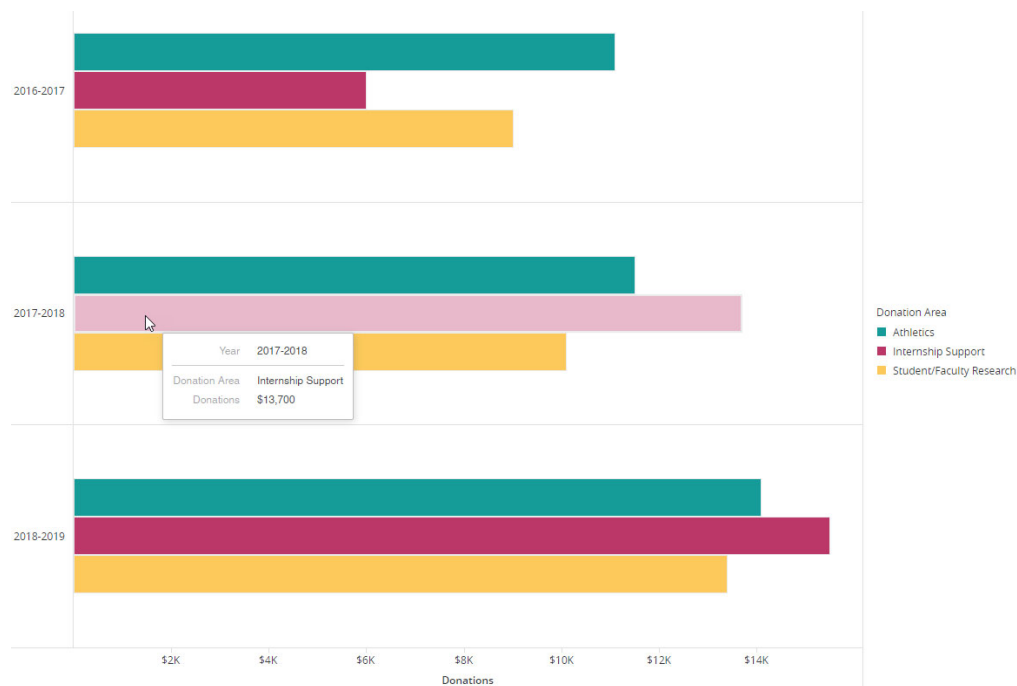

Activity: Identify visualization improvements to meet analysis goals

A college alumni office is analyzing yearly donation trends for the past three academic years, focusing on donation areas in which they receive the lowest amount of donations: Student/Faculty Research, Athletics, and Internship Support. In the 2017-2018 and 2018-2019 academic years, they implemented outreach initiatives, such as email campaigns to specific alumni, to increase donations in these areas. The alumni office wants donations in these areas to be at least \$11,000 for each academic year but is targeting \$14,000 or more. They want a visualization that helps them quickly answer the following business questions:

- Did we meet our donation goals each academic year?
- Have donations in these areas increased since we implemented our outreach initiatives?

The visualization currently used for the analysis is displayed below:



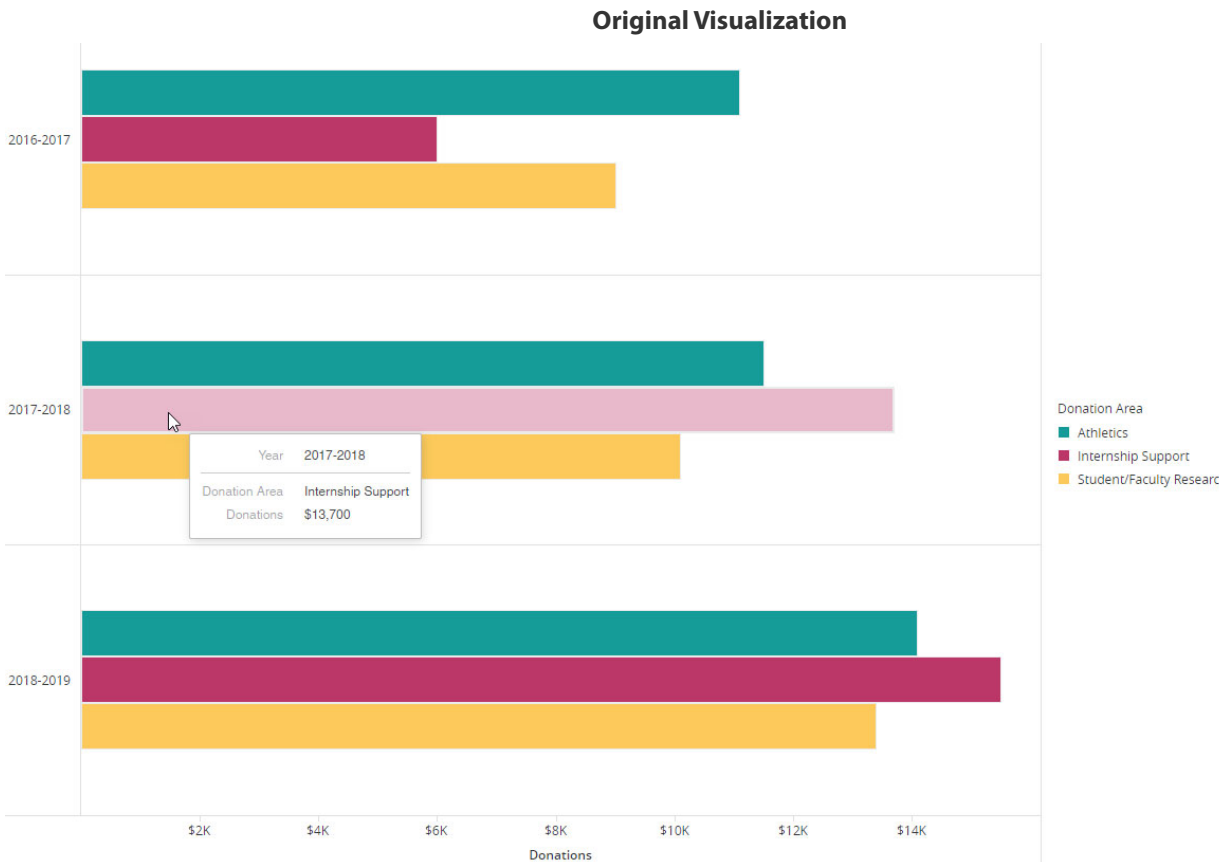
Use the business context and visualization above to answer the following questions:

- What insights can you gain from the visualization?
 - Do any aspects of the visualization confuse you?
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- How can the alumni office improve their visualization to ease the interpretation of the data? Consider the following:
 - Is an appropriate amount of information displayed?
 - Is the data sorted in a way that emphasizes a particular message?
 - Is color used effectively?
 - After you think through the improvements on your own, refer to the Activity solution below, for suggestions.
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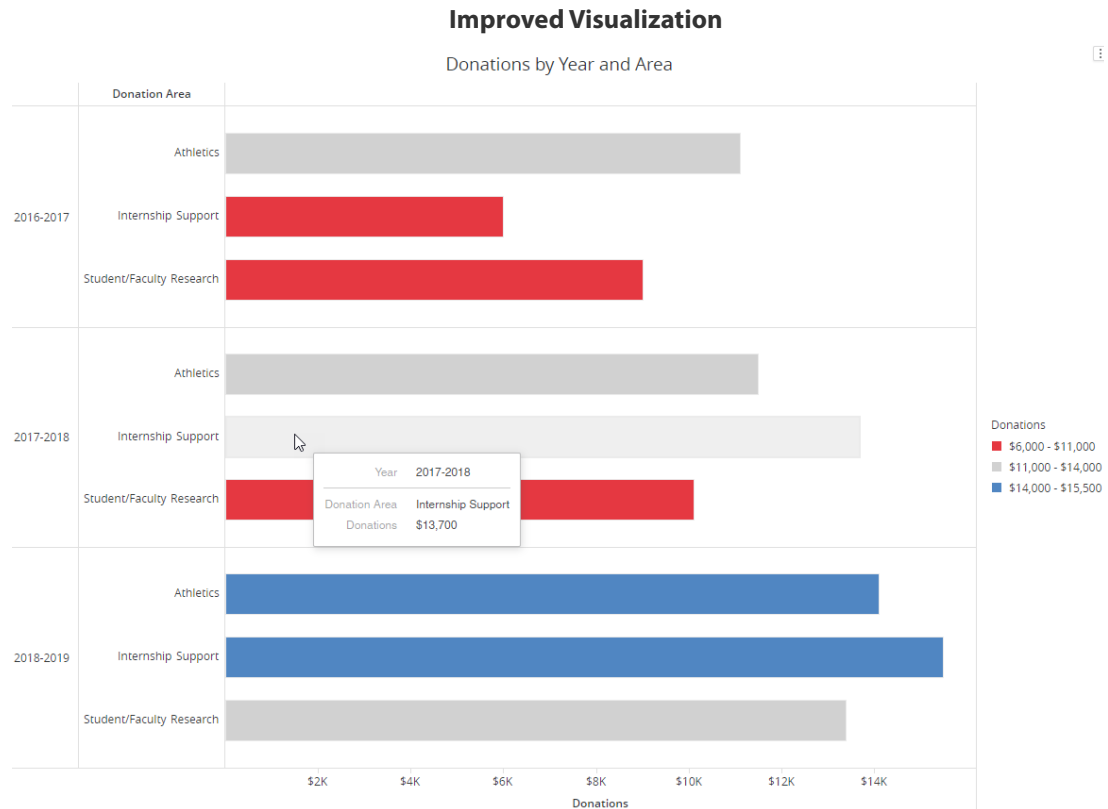
Activity solution

Below are a few potential answers to the activity questions. There are many other possible answers.



- Original visualization:
 - At a glance, it is not easy to understand whether donation goals are met for each area and if they have increased over time. You see three bars for each year, but you need to do more work to understand what each bar represents and how the donation values compare to the goals.
 - There is no title to provide context. A short, descriptive title helps the audience clearly understand the purpose of the analysis.
 - To make the analysis easier, the alumni office can use data labels and color more efficiently. It is good that a legend clarifies that each color represents a donation area, but direct labels might be more helpful since it is a major focus of the analysis. Instead of using color to distinguish the areas, the office can use it more efficiently to provide meaning to the data values: in this case, whether the donation amounts meet the goals.
-

- The tooltip is helpful for displaying the precise donation amounts. The precise donation amounts are inconsequential for understanding the overall trends and so do not need to be automatically displayed, but it is likely that the audience will need details on particular donation areas once they understand the general story.



- Improved visualization:
 - The bars are directly labeled with the donation area, making it easier to comprehend the visualization at a glance. In both visualizations, the bars within each academic year are sorted alphabetically by donation area, making it easy for you to find data by the area you are interested in.
 - Color is used effectively to provide meaning to the data values. Remember that the goal for donations in each of these areas is to be greater than \$14,000 each academic year, but no less than \$11,000. Red is used when donations are \$11,000 or below, and blue is used when donation values are \$14,000 or above. Gray is used for donation values in between \$11,000 and \$14,000, so that the high and low values stand out and you know what data points are the most important to analyze. The legend clarifies the meaning behind the colors.
 - The title quickly orients the audience to the purpose of the visualization.
 - The tooltip is still an appropriate way to display the precise donation amounts.