

Name: Vikram Sahai Saxena

Net ID: vs799

RUID: 219004709

Module 2 Exercise: (Basic) Bar Plots

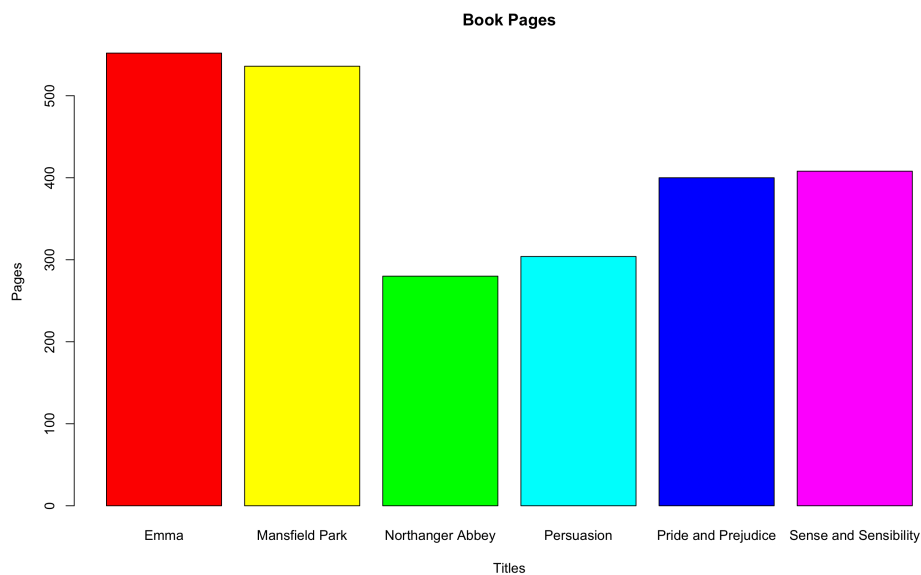
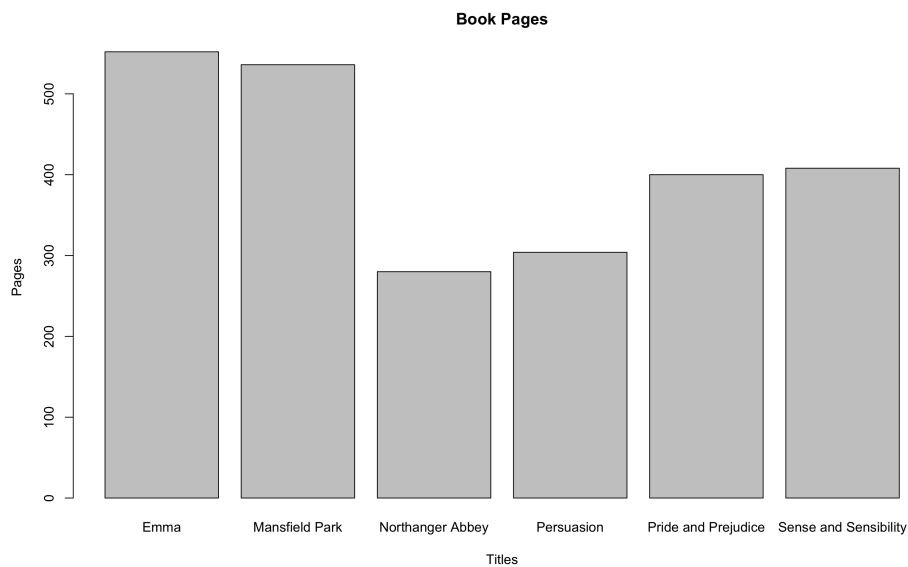
1. R code used when creating each of the two bar plots

```
a<-read.csv("bookpages.csv")
```

```
barplot(a$Pages, names.arg=a$Title, xlab="Titles", ylab="Pages", main="Book Pages")
```

```
barplot(a$Pages, names.arg=a$Title, xlab="Titles", ylab="Pages", main="Book Pages",  
col=rainbow(6))
```

2. Screenshots of each of the two bar plots created (gray-scale and colored)



3. The weaknesses to be seen with these basic bar plots

- i. Lack of Detail for Complex Data: Basic bar plots can oversimplify complex data, failing to convey nuances such as distribution within categories or multiple variables.
- ii. Clutter with Large Datasets: When dealing with a large number of categories, bar plots can become cluttered and hard to read, making it difficult to distinguish between different bars or categories.
- iii. Limited Dimensionality: Basic bar plots typically represent data in two dimensions, which can be limiting when trying to explore relationships involving more than two variables.
- iv. Ineffective for Continuous Data: Bar plots are not ideal for representing continuous data since they are designed to display discrete categories.
- v. Limited customization: There is a limited range of customization options for appearance and layout of the bar plots.

4. Actions you could take to rectify the identified weaknesses

- i. Incorporate Additional Detail: Use variations like stacked or grouped bar plots to represent additional variables or aspects of the data. Adding error bars or confidence intervals can also provide insight into the variability or uncertainty of the data.
- ii. Improve Readability: For large datasets, we can simplify the plot by aggregating categories, using horizontal bars for better readability, or employing interactive plotting tools that allow users to zoom in or filter the data.
- iii. Use Alternative Visualizations: For more complex relationships or continuous data, we can consider alternative visualizations like line charts, histograms and scatter plots that might better suit the data structure.
- iv. Use additional packages: Use functions/packages like ggplot2 and plotly to better customize the appearance and layout of the bar plots.