

My First RMarkdown Report

Your Name

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Introduction

This is a simple RMarkdown report that demonstrates how to combine text, code, and results in a single document.

We will use the built-in `mtcars` dataset to perform a basic data exploration and visualization.

Load and Explore the Data

```
# Load dataset
data(mtcars)
```

```
# Display basic summary
summary(mtcars)
```

```
##      mpg          cyl          disp          hp
##  Min.   :10.40   Min.   :4.000   Min.    : 71.1   Min.    : 52.0
##  1st Qu.:15.43   1st Qu.:4.000   1st Qu.:120.8   1st Qu.: 96.5
##  Median :19.20   Median :6.000   Median :196.3   Median :123.0
##  Mean   :20.09   Mean    :6.188   Mean    :230.7   Mean    :146.7
##  3rd Qu.:22.80   3rd Qu.:8.000   3rd Qu.:326.0   3rd Qu.:180.0
##  Max.   :33.90   Max.    :8.000   Max.    :472.0   Max.    :335.0
##      drat          wt          qsec          vs
##  Min.   :2.760   Min.   :1.513   Min.    :14.50   Min.    :0.0000
##  1st Qu.:3.080   1st Qu.:2.581   1st Qu.:16.89   1st Qu.:0.0000
##  Median :3.695   Median :3.325   Median :17.71   Median :0.0000
##  Mean   :3.597   Mean    :3.217   Mean    :17.85   Mean    :0.4375
##  3rd Qu.:3.920   3rd Qu.:3.610   3rd Qu.:18.90   3rd Qu.:1.0000
##  Max.   :4.930   Max.    :5.424   Max.    :22.90   Max.    :1.0000
##      am          gear          carb
##  Min.   :0.0000   Min.    :3.000   Min.    :1.000
##  1st Qu.:0.0000   1st Qu.:3.000   1st Qu.:2.000
##  Median :0.0000   Median :4.000   Median :2.000
##  Mean   :0.4062   Mean    :3.688   Mean    :2.812
##  3rd Qu.:1.0000   3rd Qu.:4.000   3rd Qu.:4.000
##  Max.   :1.0000   Max.    :5.000   Max.    :8.000
```

Descriptive Statistics

The average miles-per-gallon (mpg) of the cars in this dataset is **20.09**.

Let's also compute the median for comparison.

```
# Compute mean and median
mean(mpg <- mtcars$mpg)
```

```
## [1] 20.09062
```

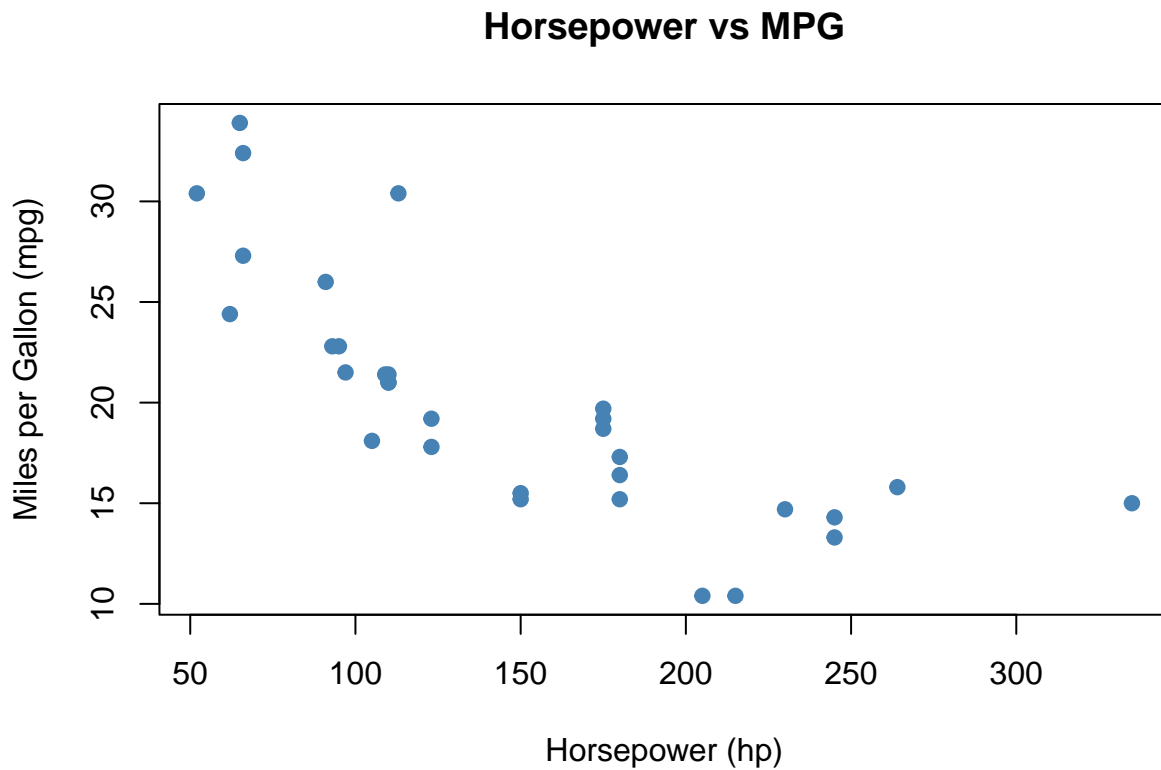
```
median(mpg)
```

```
## [1] 19.2
```

Visualizing the Data

Let's plot horsepower (hp) against miles-per-gallon (mpg).

```
plot(mtcars$hp, mtcars$mpg,  
     main = "Horsepower vs MPG",  
     xlab = "Horsepower (hp)",  
     ylab = "Miles per Gallon (mpg)",  
     pch = 19,  
     col = "steelblue")
```



Conclusion

- We used RMarkdown to create a simple report.
- We loaded a dataset, ran summary statistics, and visualized the relationship between horsepower and mpg.
- Inline R code shows that the average mpg is **20.09**.

This demonstrates how RMarkdown helps create clear, reproducible, and professional reports.