Exploring Car Data with mtcars - Adv R Homework1

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Introduction

The `mtcars` dataset is a classic dataset in R that comprises fuel consumption and 10 aspects of automobile design and performance for 32 automobiles (1973–74 models). We will explore the relationship between **miles per gallon (mpg)** and **horsepower (hp)**.

Approach

We will: - Load the built-in `mtcars` dataset. - Plot `mpg` against `hp`. - Add a trend line for interpretation. - Comment on the observed relationship.

Descriptive Statistics
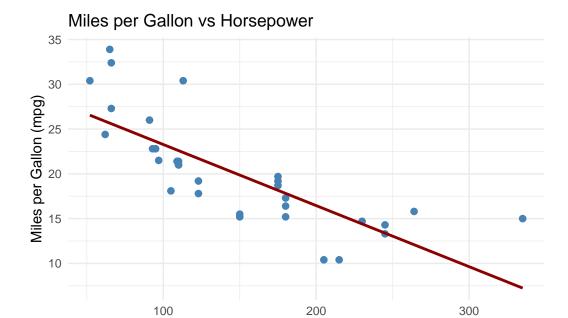
Here are some basic statistics of the key variables:

- **Mean mpg**: *20.090625*
- **Mean hp**: *146.6875*
- **Max hp**: *335*
- **Min mpg**: *10.4*

Plot

Below is a scatter plot of `mpg` vs `hp`. We expect an inverse relationship: as horsepower increases, fuel efficiency (mpg) tends to decrease.

```
`geom_smooth()` using formula = 'y ~ x'
```

Miles per Gallon vs Horsepower