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title: "ML ASSIGNMENT 1"
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output:
  pdf_document: default
  html_document: default
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```

```{r}
library(ISLR)
```

This exercise involves the Auto data set studied in the lab. Make sure that the missing values have been removed from the data.
```{r}
auto=data.frame(Auto)
auto

```

(a) Which of the predictors are quantitative, and which are qualitative?
```{r}
str(auto)
```
(b) What is the range of each quantitative predictor? You can answer this using the range() function.
```{r}
for(i in c(1,3,4,5,6,7)){
 print( range(auto[,i]))
}
```
(c) What is the mean and standard deviation of each quantitative predictor?
```{r}
for(i in c(1,3,4,5,6,7)){
 print( mean(auto[,i]))
}
```

```{r}
for(i in c(1,3,4,5,6,7)){
 print( sd(auto[,i]))
}
```
(d)   Now remove the 10th through 85th observations. What is the range, mean, and standard deviation of each predictor in the subset of the data that remains?
```{r}
auto=Auto[-(10:85),]
auto
```
```{r}
for(i in c(1,3,4,5,6,7)){
 print( range(auto[,i]))
}
```
```{r}
for(i in c(1,3,4,5,6,7)){
 print( mean(auto[,i]))
}
```
```{r}
for(i in c(1,3,4,5,6,7)){
 print( sd(auto[,i]))
}
```
(e)   Using the full data set, investigate the predictors graphically, using scatterplots or other tools of your choice. Create some plots highlighting the relationships among the predictors. Comment on your findings.

```{r}
```

```
pairs(auto)
```

```{r}
plot(auto$acceleration,auto$weight)
```


There is a negative correlation that shows when weight increases accelaration
decreases.

```{r}
plot(auto$horsepower, auto$mpg)
```


 There is a negative correlation that is when horsepower increases, mpg decreases.

```{r}
plot(auto$year, auto$mpg)
```


 There is a positive correlation that shows that as year increases, mpg also increases.

(f) Suppose that we wish to predict gas mileage (mpg) on the basis of the other
variables. Do your plots suggest that any of the other variables might be useful in
predicting mpg? Justify your answer

  Answer: Yes, in these graphs we can see the positive variables and negative variables
and the relationships to mpg outcome. mpg and horsepower have a negative relationship
to one another that is when horsepower increases mpg gets decreases when the year and
mpg have a positive relationship with each other (as year increases mpg also
increases).