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Class: M003
Date: 10/13/20
Chapter Number: #16
Title of Chapter: Lining up our model

Module 8 Lecture and First Roundtable

We are going to talk about Linear model this week—creating a linear model certain dataset
Linear model's idea is to minimize the distance between data points.
Independent variable is variable that is isolate in their own relatively
Dependent variable is the variable that would be affect by the independent variable or other variable.
The dependency of variable is relative, due to the dataset and the problem we are looking at.

Week 8 Part 2 - Working Through an Example

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```
lm(formula=repairs~oilChanges, data=oil)
R-squared is the amount of the variable that fit into the linear model
abline(model1)
oil$oilChangeCost <- oil$oilChnages*350
oil$totalCost<-oil$oilChnageCost+oil$repairs
m<-lm(formula=totalCost~oilChnages, data=oil)
plot(oil$oilChanges,oil$totalCost)
abline(m)
predict(linear model, test list, type="reponse")
```

a linear model is always able to be improved further.
Outlier is really important

Module 8 - R Coding

Module 8 - R Coding

```
setosa.io/ev/ordinary-leastsquares-regression/
g<-ggplot(df,aes(x-x,y=y))+geom_point()
g+stat_smooth(method="lm",col="red")
sample(1:100,10,replate=FALSE)
mpg.lm=lm(formula=mpg~hp+wt+cyl(. Refer to all variable),data=mtcars)
summary(mpg.lm)
range(mtcars$wt)
newdata=data.frame(cyl=4,wt=2.8)
predict(mpg.lm,newdata,type="response")
paste("p values:")
summary(mpg.lm)[,4
```

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paste("adjusted r squared:", sum.model$adj.r.sq)#R^2
g<-ggplot(mtcars,aes(x-
hp,y=wt))+geom_point(aes(size=mpg,color=mpg))+geom_smooth(method="lm")

Exercise Review
read_csv(getURL(url))
and use lm() creating linear model
use ggplot, especially geom_smooth(,,"lm") to visualize the model

Question for Class
IMPORTANT: How are you? Please have a wonderful day!