Diamond Cost Predictor

Analysis of diamond data available in RStudio

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How much cost a Diamond?

For this assignment, I did prepared a Shiny application in which the user will input the Carats of a Diamond stone and it will get its price based on the statistical data.

Loading of the packages

The first part is the declaration of the package which will be used.

```
library(shiny)
library(UsingR)
```

Reading of the Data

We began by reading in the data.

The data is in SIN$ but the final results will be in US$ (at a change rate based on the date at Dec. 20 2014 of: USD/SGD = 0.77134)

```
data(diamond)
```

Fitting the Model

I created a novel prediction algorithm to predict the cost in US$dollars for each diamond stone.

```
fit= lm(price ~ carat, data = diamond)
```

A quick look at the data :

```
summary(diamond)
```

```
##      carat            price      
##  Min.   :0.1200   Min.   : 223.0  
##  1st Qu.:0.1600   1st Qu.: 337.5  
##  Median :0.1800   Median : 428.5  
##  Mean   :0.2042   Mean   : 500.1  
##  3rd Qu.:0.2500   3rd Qu.: 657.0  
##  Max.   :0.3500   Max.   :1086.0
```

Here it is the application Diamond Price Calculation

Please click the following Link:
Diamonds Cost Predictor.
or Here:

https://srinathmukhopadhyay.shinyapps.io/DiamondCostPredictor/

The following is the source used to create the application:

The Interactive Application using the Shiny package

A shiny project is a directory containing at least two parts One named ui.R (for user interface) controls how it looks. One named server.R that controls what it does.
Here are the files: ### ui.R

```
library(shiny)
shinyUI(
        pageWithSidebar(
                # Price of Diamonds per Carat prediction
                headerPanel("Price of Diamonds per Carat prediction"),
                sidebarPanel(
                        numericInput('carat', 'Enter the weight in carats', 0.1 ,
                                     min = .01, max = 2.0, step = 0.01),
                        submitButton('Submit')
                ),mainPanel(
                        h3('Results of the prediction'),
                        h4('You entered the following carats'),
                        verbatimTextOutput("inputValue"),
                        h4('Which will cost you (in $US)'),
                        verbatimTextOutput("prediction")
                )        ))
```

server.r

```
library(shiny)
library(UsingR)
data(diamond)
fit= lm(price ~ carat, data = diamond)
slope<-coef(fit)[2]
names(slope)<- "US$ Dollars"
CaratPrice <- function(carat) {0.77134*(carat*slope + coef(fit)[1])}
shinyServer(
        function(input, output) {
                output$inputValue <- renderPrint({input$carat})
                output$prediction <- renderPrint({CaratPrice(input$carat)})
        }
)
```