

# Rmarkdown-exercise-worksheet

*Reid Otsuji*

*1/5/2020*

## Instructions:

Complete the worksheet using RStudio and Rmarkdown. Some R Packages will be necessary to complete the worksheet.

Answer all questions in this document and have fun with Rmarkdown!

**Before you begin:** You will need to load the GGLOT package to use the `diamonds` data set. Run the code each of the following chunks once to install and load the GGLOT2 package.

## 1. Install and Load the `ggplot2` package

(if you already have GGLOT2 installed skip this code chunk.)

```
# This is an example of a code chunk to install an R package
# Run this code chunk manually if you need to install the GGLOT2 package
# click the green arrow to the left to install the package.
install.packages("ggplot2")
```

- Run this code chunk to Load the GGLOT2 library.

```
# load the GGLOT2 library
library(ggplot2)
```

**2. In the Diamonds Data Set Description text provided below, add the proper Rmarkdown formatting to each line of text. The highlighted recommendations at the end of each line.**

- **optinoal:** add a link to the Diamond Data Set Description text below using the link formt [link text](http://add link here) to the dataset information.
  - The 4 C's of Diamond Quality <https://4cs.gia.edu/en-us/4cs-diamond-quality/>

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Prices of 50,000 round cut diamonds H1 heading

Description H2 heading

A dataset containing the prices and other attributes of almost 54,000 diamonds. The variables are as follows:  
bold this line

Usage h3 heading

diamonds bullet

Format h3 heading

A data frame with 53940 rows and 10 variables: bold

price h4 heading, bullet

price in US dollars (\$326–\$18,823) nested bullet

carat h4 heading, bullet

weight of the diamond (0.2–5.01) nested bullet

cut h4 heading, bullet

quality of the cut (Fair, Good, Very Good, Premium, Ideal) nested bullet

color h4 heading, bullet

diamond colour, from D (best) to J (worst) nested bullet

```

clarity h4 heading, bullet
a measurement of how clear the diamond is (I1 (worst), SI2, SI1, VS2, VS1, VVS2, VVS1, IF (best)) nested
bullet

x h4 heading, bullet
length in mm (0–10.74) nested bullet

y h4 heading, bullet
width in mm (0–58.9) nested bullet

z h4 heading, bullet
depth in mm (0–31.8) nested bullet

depth h4 heading, bullet
total depth percentage =  $z / \text{mean}(x, y) = 2 * z / (x + y)$  (43–79) nested bullet, inline code block

table h4 heading, bullet
width of top of diamond relative to widest point (43–95) nested bullet

```

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For the next section you will need to load the following packages:

- knitr
- ggplot2
- kable
- pander

```

# this is an example of a code chunk
#run manually by clicking the green arrow to the left if you need to load the library
library(knitr)

```

Next, you will practice working with code chunks!

### 3. Adding code chunks

- On the tool bar, use the **Insert** button and selecting **R** or manually create one by typing a “code fence” 3 opening and closing backticks with `{r}` e.g. ````{r}` at the beginning and closing with ````` to create a code chunk (see example above).
- In between the “code fence” add and run the R code `summary(diamonds)` to get the summary of the data set: (run the code chunk to make sure it works)
  - **optional-** hide the code chunk in your knitted document by adding `echo=FALSE` in the code chunk options

Add code chunk below:

4. Create a new code chunk to add a basic scatter plot to your document that shows the price as a function of carat weight:

- Use this code `plot(price ~ carat, data=diamonds)` Add code chunk below:

5. Create a basic R table that shows the count for the diamonds cut and clarity following these steps:

1. Create a code chunk
2. Hide the code chunk in the knitted document output using `echo=FALSE`
3. Use this code `table(diamonds$cut, diamonds$clarity)` to generate the table

Add code chunk below:

Next, improve to formatting of this table by using the knitr package function `kable`:

1. Use `kable` to improve the look of the default table
2. Create a new code chunk with the option `echo=FALSE`
3. Use this code `kable(table(diamonds$cut, diamonds$clarity))` to generate the table
  - if you receive an error message, make sure the knitr library is enabled. run `library(knitr)` before you run the kable code.

Add code chunk below:

## 6. Create a publication style table using the pander package

1. Install pander package using: `install.packages("pander")` run this code chunk if you need to install the pander package.
2. Load the pander package using: `library(pander)`

```
library(pander)
```

3. Run an simple anova (analysis of variance model) to model price as a function of carat.
  - Run this code to add the ANOVA to the variable model1:

```
model1 <- aov(price ~ cut, data=diamonds)
summary(model1)
```

4. Generate the table using the `pander` package.
  - Create a new code chunk with the option `echo=FALSE`
  - Generate the markdown output using pander
  - Use the code `pander(model1)`

Add code chunk below:

## 7. Add a linked image to your document.

1. Use the image format `![image title](image link)` to embed a web linked image in the document.
  - Use the sample image link to add an image to this document: <https://bit.ly/2ZQA1cg>

**Note: knitting a document with web linked images will only work when knitting to HTML. Web linked images will produce a LaTeX error when knitting to PDF.**

Add Rmarkdown code below:

## 8. Knit your exercise worksheet to HTML or PDF output formats.

- Use the `knit` button in the tool bar to knit to the default setting
- Use the small chevron next to `knit` to select optional output formats.

**Congratulations! You're on your way to making great documents using RStudio and Rmarkdown!**