

# Warmup 01: Markdown Syntax

Stat 133, Spring 2019

## Introduction

The purpose of this assignment is to work with an R Markdown (`Rmd`) file and practice writing content using markdown syntax. Because you will be using R markdown files, aka `Rmd` files, throughout the rest of the course, the sooner you get familiar with this syntax, the better.

## General Instructions

- Write your narrative and code in an `Rmd` (R markdown) file.
- Name this file as `warmup01-first-last.Rmd`, where `first` and `last` are your first and last names (e.g. `warmup01-gaston-sanchez.Rmd`).
- Submit your `Rmd` and `html` files to bCourses.

Here are some useful resources that you can look at to complete this assignment:

- Markdown tutorial by CommonMark: <http://commonmark.org/help/tutorial/>
  - Another Markdown tutorial: <http://www.markdowntutorial.com/>
  - RStudio has a very comprehensive R Markdown tutorial: <http://rmarkdown.rstudio.com/>
  - Mastering Markdown: <https://guides.github.com/features/mastering-markdown/>
  - Markdown reference: <http://commonmark.org/help/>
  - Adam Pritchard's Markdown Cheatsheet: <https://github.com/adam-p/markdown-here/wiki/Markdown-Cheatsheet>
  - RStudio cheat sheet: <https://www.rstudio.com/wp-content/uploads/2016/01/rstudio-IDE-cheatsheet.pdf>
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## Requirements

Here's a summary of the topics you have to write about. You don't have to write any R code (yet).

1. `Star Wars`
2. `Cooking Recipe`
3. `Euclidean Distance`
4. `Comments and Reflections`

Make sure to include the following elements (using markdown syntax)

- Various types of headings

- Text in italics
  - Text in bold
  - Hyperlinks
  - Links of images
  - A table
  - Unordered list
  - Ordered list
  - Blockquote
  - Breaklines
  - Some math equations (using latex syntax)
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## Star Wars

Visit *Star Wars Wiki* (i.e. wookieepedia) (<http://starwars.wikia.com/>) and choose one of the characters (e.g. [Hype Fazon](#)).

Use markdown syntax to write the following about the character you chose:

- Include one of the character's quote using a markdown blockquote.
- Include an image of the character.
- Use a markdown table with two columns to include things like species, gender, eye color, etc.



A famous quote by Fazon Hype:

“Believe the hype.”

Description	Value
Species	Rodian
Gender	Male
Eye Color	Blue
Skin Color	Green

Description	Value
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## Cooking Recipe

Visit *Smitten Kitchen* (<https://smittenkitchen.com>) and choose one recipe (e.g. [root vegetable gratin](#)).

The screenshot shows the Smitten Kitchen website. At the top is the 'sk' logo in a stylized blue font. Below it is a navigation bar with links: 'SURPRISE ME!', 'RECIPES', 'PARTY SNACKS', 'BOOKS', 'VIDEO', and 'MORE'. The main content area features a large image of a root vegetable gratin in a white oval dish. To the left of the image is a 'RECIPES' tab. To the right is a search bar and social media icons for Facebook, Twitter, Pinterest, Instagram, and RSS. Below these is a section for 'THE WEEKLY NEWSLETTER' with an 'Email Address' input field and a 'SUBSCRIBE' button. At the bottom right is a 'POPULAR RIGHT NOW' section with four small images of various dishes.

Write about the recipe using Markdown syntax:

- Use an **unordered** list (of bullets) to list the ingredients.
- Use another unordered list to list any “special” kitchen tools that are needed.
- Describe the steps of the recipe.
- Include an image to show the appearance of the meal.
- Is there a special season of the year for it?
- Are there variations of the recipe? Using other ingredients?

## Euclidean Distance

Visit the wikipedia page for the Euclidean Distance:

[https://en.wikipedia.org/wiki/Euclidean\\_distance](https://en.wikipedia.org/wiki/Euclidean_distance)

Replicate the text of the **Definition** (see screenshot below):

No need to include hyperlinks

## Definition [\[ edit \]](#)

The **Euclidean distance** between points  $\mathbf{p}$  and  $\mathbf{q}$  is the length of the **line segment** connecting them ( $\overline{\mathbf{pq}}$ ).

In **Cartesian coordinates**, if  $\mathbf{p} = (p_1, p_2, \dots, p_n)$  and  $\mathbf{q} = (q_1, q_2, \dots, q_n)$  are two points in **Euclidean  $n$ -space**, then the distance ( $d$ ) from  $\mathbf{p}$  to  $\mathbf{q}$ , or from  $\mathbf{q}$  to  $\mathbf{p}$  is given by the **Pythagorean formula**:<sup>[1]</sup>

$$\begin{aligned} d(\mathbf{p}, \mathbf{q}) &= d(\mathbf{q}, \mathbf{p}) = \sqrt{(q_1 - p_1)^2 + (q_2 - p_2)^2 + \dots + (q_n - p_n)^2} \\ &= \sqrt{\sum_{i=1}^n (q_i - p_i)^2}. \end{aligned} \tag{1}$$

The position of a point in a Euclidean  $n$ -space is a **Euclidean vector**. So,  $\mathbf{p}$  and  $\mathbf{q}$  may be represented as Euclidean vectors, starting from the origin of the space (initial point) with their tips (terminal points) ending at the two points. The **Euclidean norm**, or **Euclidean length**, or **magnitude** of a vector measures the length of the vector:<sup>[1]</sup>

$$\|\mathbf{p}\| = \sqrt{p_1^2 + p_2^2 + \dots + p_n^2} = \sqrt{\mathbf{p} \cdot \mathbf{p}},$$

where the last expression involves the **dot product**.

No need to include footnotes

To write all the above equations you will have to use latex syntax. Here are a couple of resources about writing math symbols with Latex notation:

- [https://www.sharelatex.com/learn/Mathematical\\_expressions](https://www.sharelatex.com/learn/Mathematical_expressions)
- <https://en.wikibooks.org/wiki/LaTeX/Mathematics>

If you feel the euclidean distance is not enough, feel free to find other math equations and formulas to play with.