PDF to CEO: https://github.com/boh016/dsc106/tree/master/Homework%202/PDF_to_CEO
Source code: https://github.com/boh016/dsc106/tree/master/Homework%202/source_code
link to CEO: https://sites.google.com/view/dsc106-hw2/%E9%A6%96%E9%A1%B5

DSC106 HW2
Insights:

1. Impossible burger released on October 2018, but impact started in the beginning of September 2018. All three kinds of burgers' have a significant drop in Sales. Hamburger was impacted the most, which suffered about 230,000 in average sale. Chicken fillet decreased about 90,000 in average sale, and fish fillet dropped about 60,000 in average sale from September to October.
2. After the release of impossible burger, sales across all three products become stable and constant till now. Before the release, sales kept growing in a steady rate. We might conclude that some of the sales are absorbed by the impossible burger. Some consumer would like to try the veggie burger due to their marketing or other factors. Fortunately, there is still loyalty of old consumers for our products, which hold the sales constant and not decreasing.
3. The impossible burger affected all areas, we see similar pattern of drop across all regions. Each region's average sale shows exactly the same pattern as all three products' sale have demonstrated.
4. By analyzing the daily data in January 2016, we see hamburger and chicken fillets' sales are stable and constant, while Fish fillet's is more turbulent. We would see the biggest sale of fish fillet happens on every Friday in the January 2016 and then with a drop on every Saturday. We need more data to find out why fish fillet has this kind of pattern.
5. Regionally speaking, all areas have more sales on weekends. However, We see Center and South area follow the same pattern as the fourth insight points out. North area tends to have an different trend. Especially, for North East, Friday becomes one of the lowest sale of every week, while Sunday is more popular. Selected patterns are shown.

Methodology: I used Tableau as my tool to create those visualizations. Before outputting presentational level visualizations, I first used Python to do some explorative data analysis in order to gain some understandings of the data. For these sets of data, I think it's not helpful for CEO to see all the detail (too messy with all the lines). I decided to work on two dimensions for both monthly data and daily data, product level and regional level. Also, in order to let my viz consumers to see the data clearly, I decided to aggregate the data by calculate the means along the dimensions. For example, if I'm working on the product level, then I would aggregate the data across the regions for each product, hamburgers, chicken fillet, and fish fillet, vice versa. When generating the output, I focus mainly on two levels, macro level and micro level. In macro level, I mainly focus on how the impossible burger impacts on our product or regional sales. On micro level, I try to concentrate on our own daily sales and try to find patterns inside the daily data.
Weakness: I think I'm still not good at creating a website. I used google site as the medium

to host the webpage, which there is not much space to customize the website. Also, I used JPEG format for images, but professor said JPEG is not the good format for charts at the closest lecture from due date. As my toolkits advance, I think it's better to build the website from scratch and try to use svg or other image format in order to run into trouble.

Successes: I think I analyzed the data in a clear way. From product side, we could have insight of the impossible burger on our three kinds of products. From regional side, we could gain understanding of the impossible burger on each different area. Also, I did not plot all the data together, and instead, aggregate them by the mean. I think in that way, it would make the audience much easier to read.