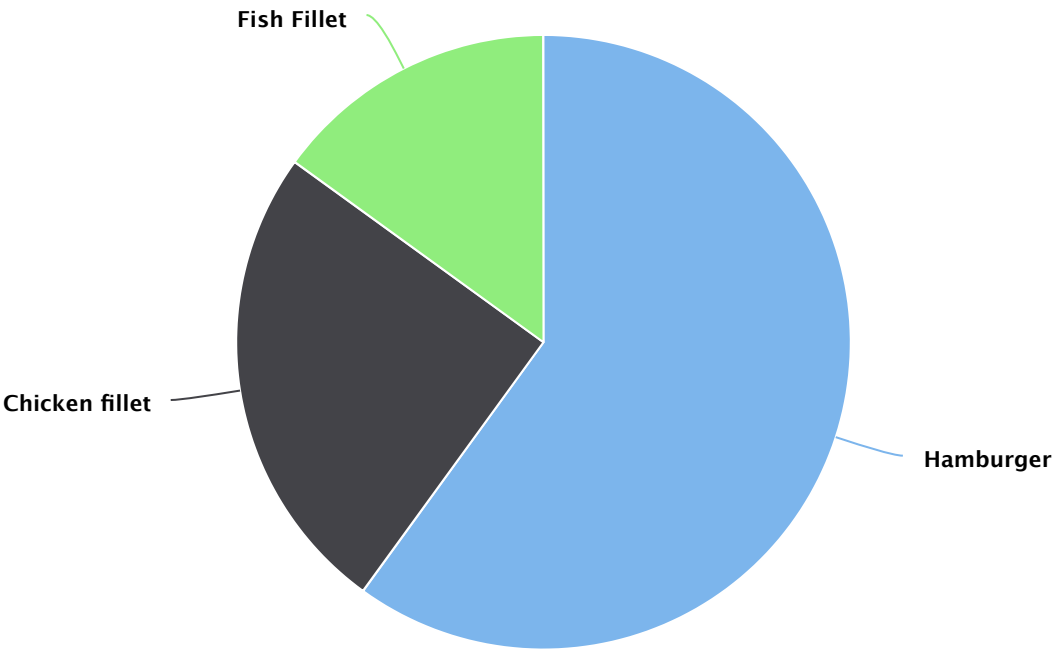


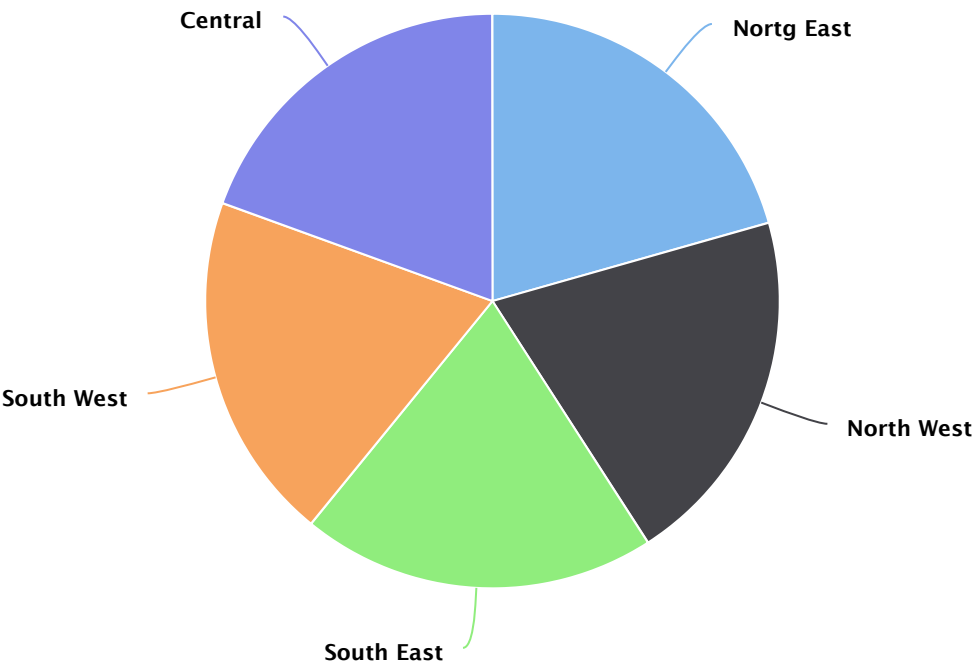
Overall sales during 4 years!

sales proportions of three items from 2016 to 2019



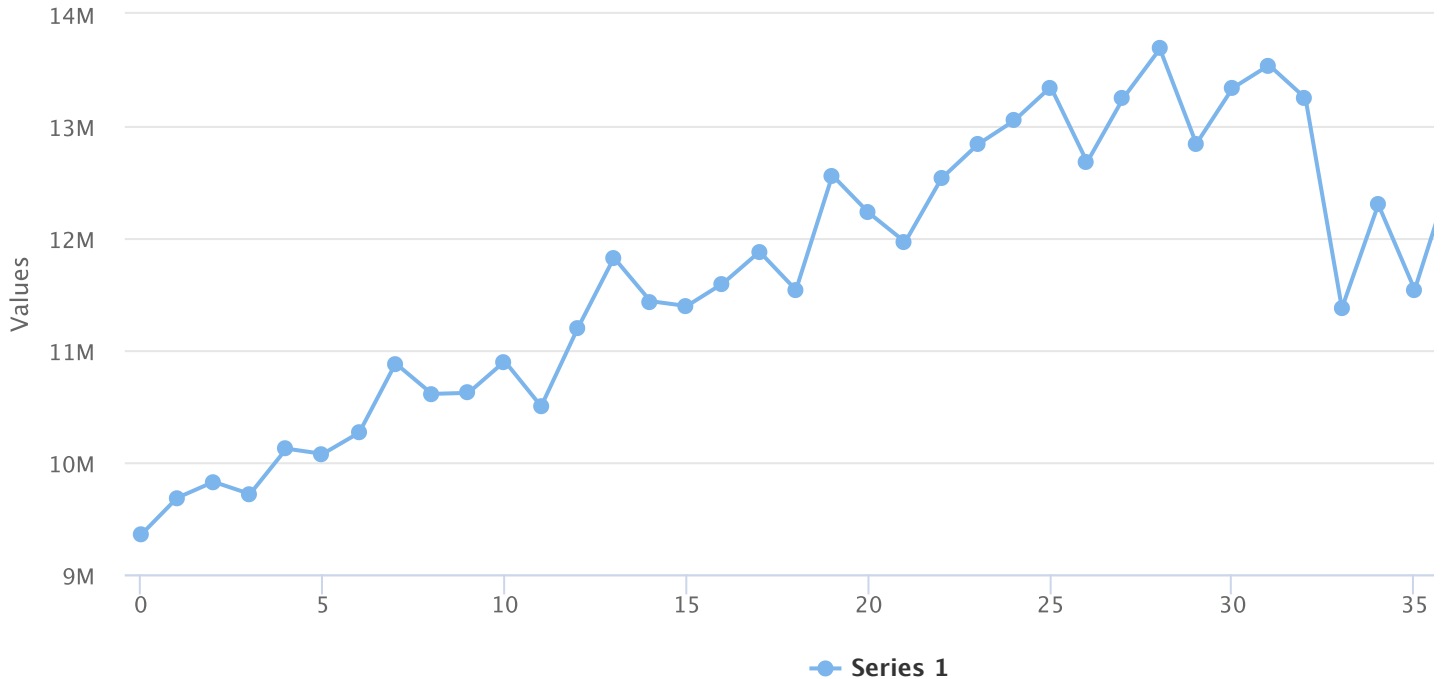
This pie chart represents the sales proportions of three items from 2016 to 2019. We can easily tell from the graph that the sales of these three items differ. During these four years, the Hamburgers in McDonald's are the most popular, whose sales dominate half of the total revenue. The second popular item is chicken fillet and the third one is fish fillet.

sales proportions of 5 locations from 2016 to 2019



This pie chart represents the sales proportions from 2016 to 2019 regarding to 5 locations. We can tell from the graph that the proportions are almost the same, which means that the overall sales of Mcdonald's vary a little in different locations. We may propably assume that the locations don't affect the sales very much.

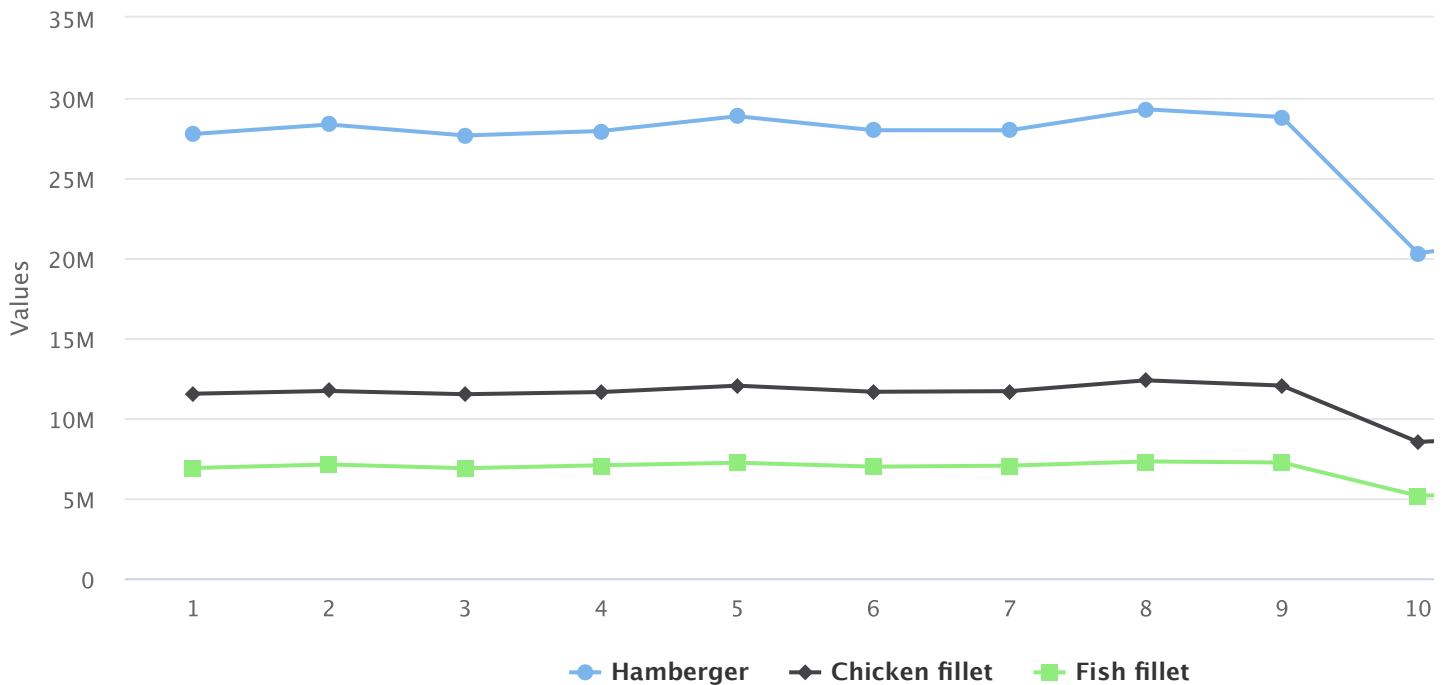
monthly sales from 2016 to 2019



This line chart represents the trends of Mcdonalds' according to the data from January 2016 to September 2019. We can tell the from January 2016 t0 September 2018, the monthly sales are increasing with subtle and reasonable variation. However, there is a significant decrease on October 2018, the month when Burger King introduced its new product Impossible Burger, a veggie food, to the market. We can probably assume that the decrease in sales on October 2018 was caused by Impossible Burger.

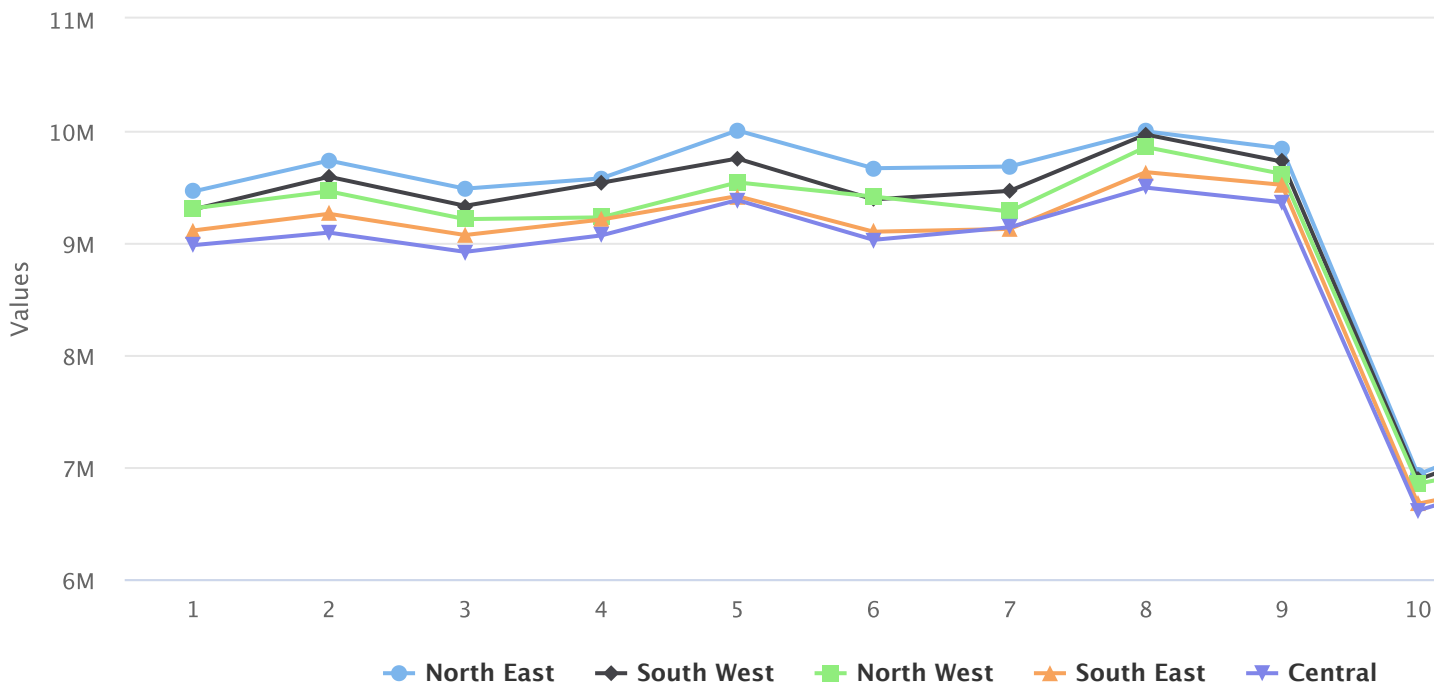
Monthly sales during 4 years!

total monthly sales for 3 items from 2016 to 2019



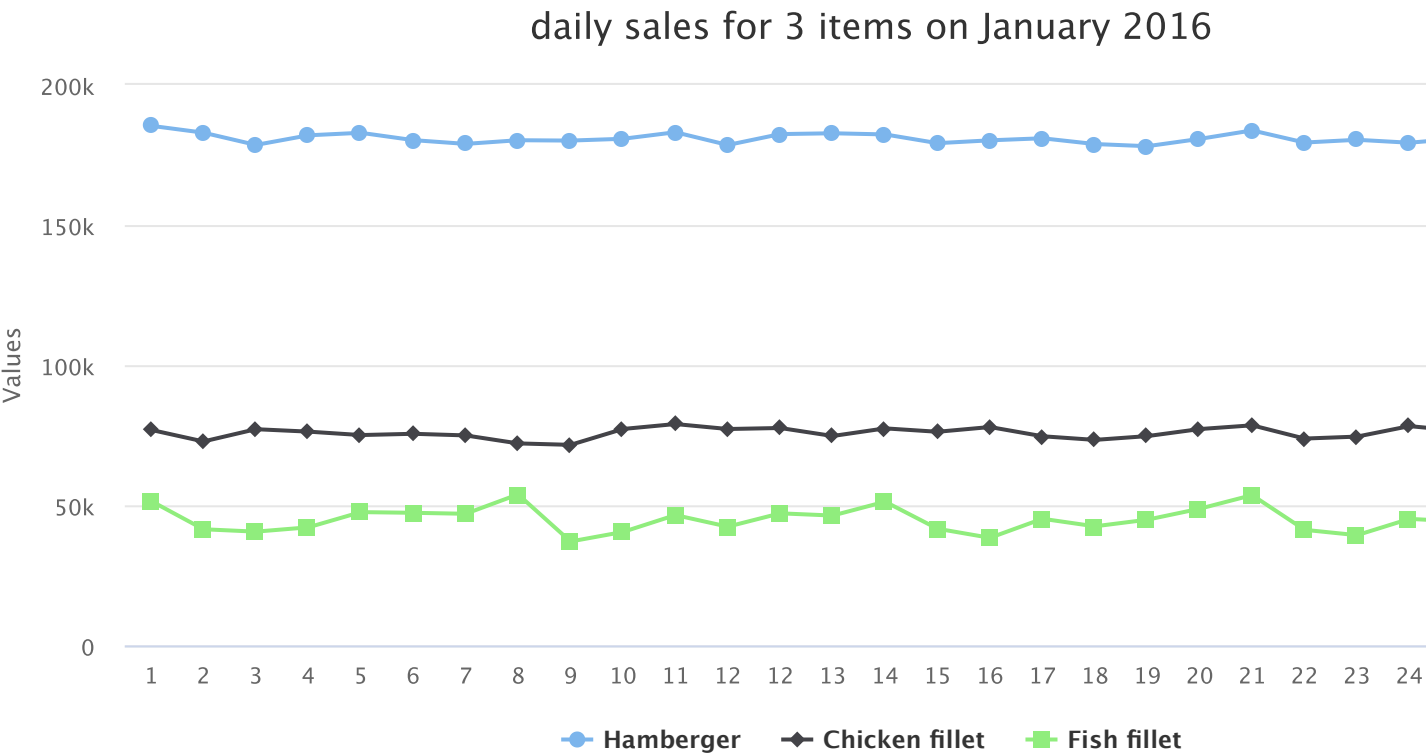
This line chart represents sales of each sum of 12 months from 2016 to 2019 for three items. We can tell from the graph that the sales during these four years are almost stable except for October, which means that total sales of October from 2016 to 2019 decreases. After November, the sales don't seem to revert to the normal status. It remains downturns. We assume that the Impossible Burger might affect the sales of Mcdonalds. The decrease starting from October validated the assumption I made from last line chart.

total monthly sales on 5 locations from 2016 to 2019

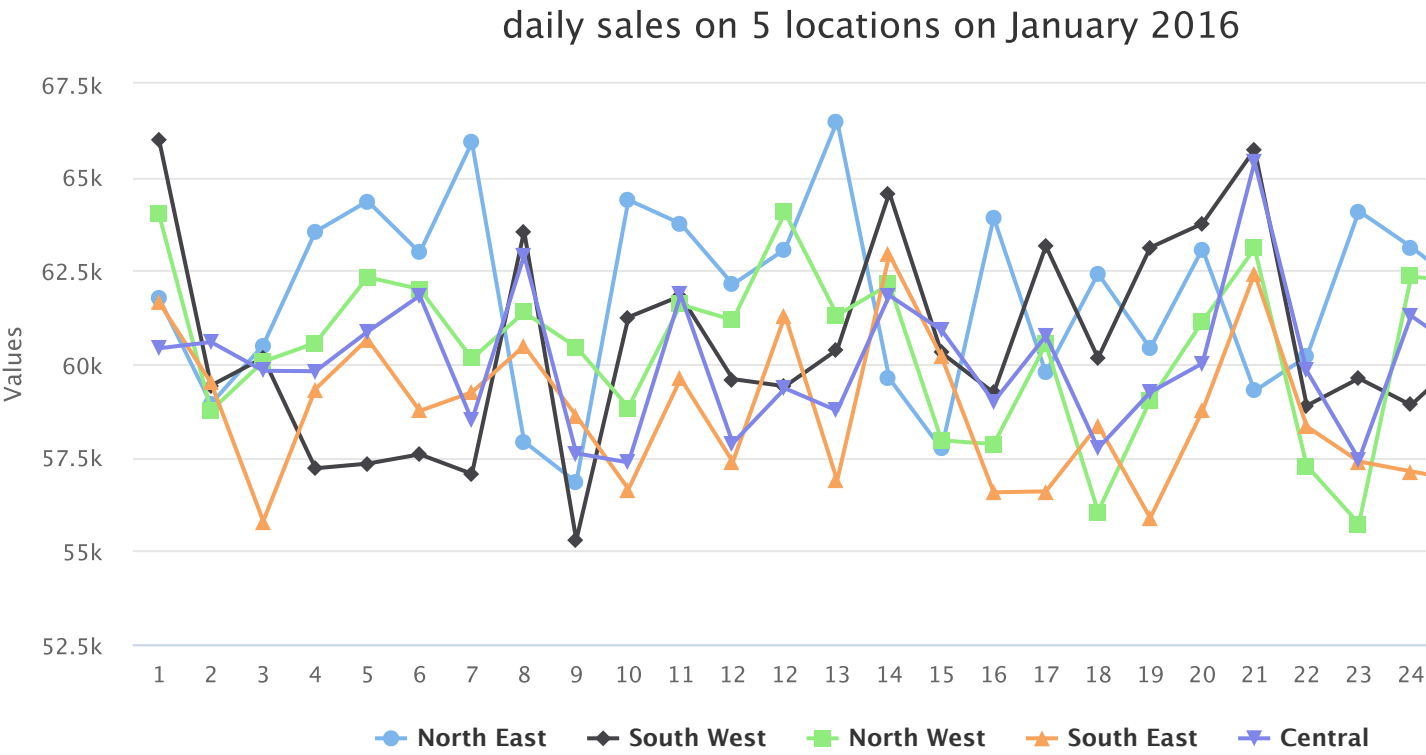


This line chart represents sales of each sum of 12 months from 2016 to 2019 on 5 different locations. We can tell the sales of 5 locations hardly have significant differences and the patterns of sales every month are almost the same, which means the monthly sales for 5 locations decrease or increase at the same time. I may probably conclude that the locations don't affect the market very much. During these four years, these 5 locations didn't happen anything unusual to affect the sales on specific locations. Also, there are significant decreases on October

Daily sales on January 2016!

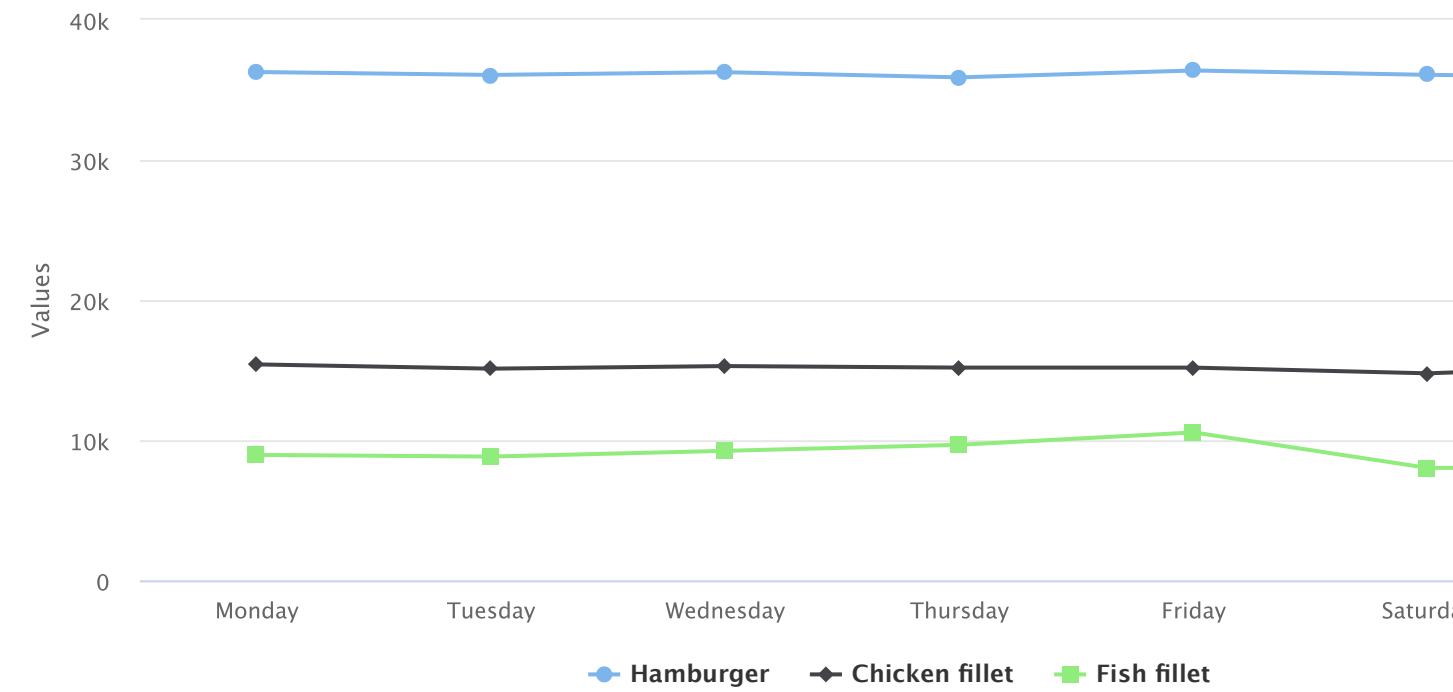


This line chart represents the daily sales of three items on January 2016. The daily sales are very stable for all these three items. It means the the date probably don't affect the sales of Mcdonald's. Also, we can tell that the sales for hamburgers exceed much compared with the sales of chicken fillet and fish fillet.



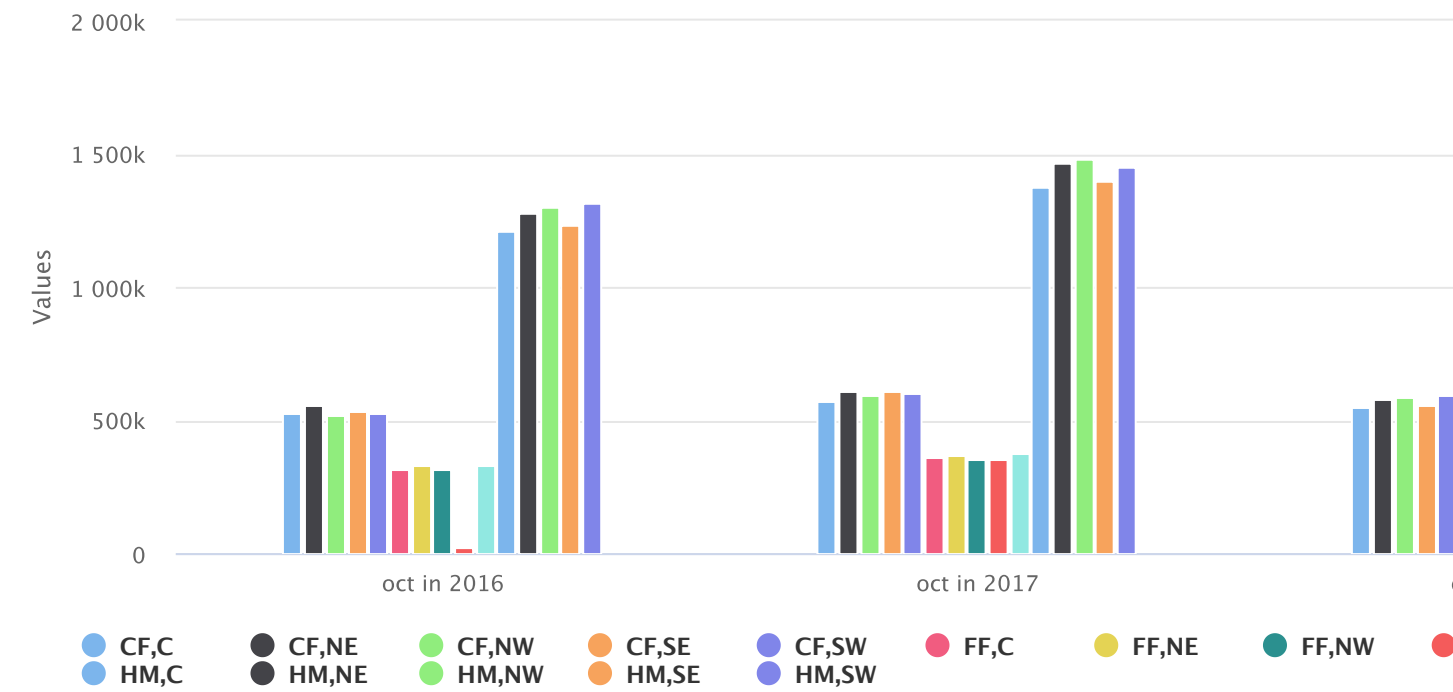
This line chart represents the daily sales in 5 locatons on January 2016. We can tell from the graph that there is no patterns and correlations of daily sales according to locations.

average of sales in a week for 3 items

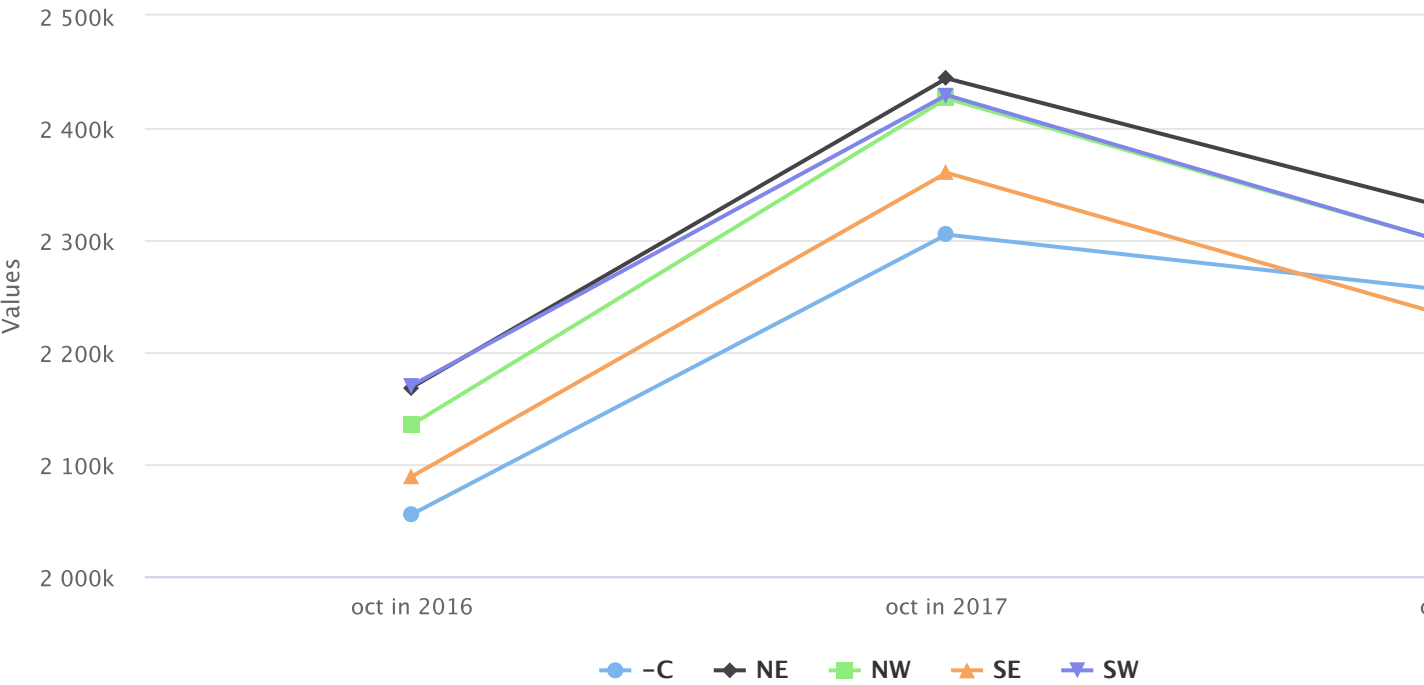


This line charts represents the average sales from Monday to Sunday for 3 items according to the data from January 2016. We can tell that the sales on 7 days are almost the same with subtle variations. We also conclude that the sales on Friday exceed a little bit than sales on other six days.

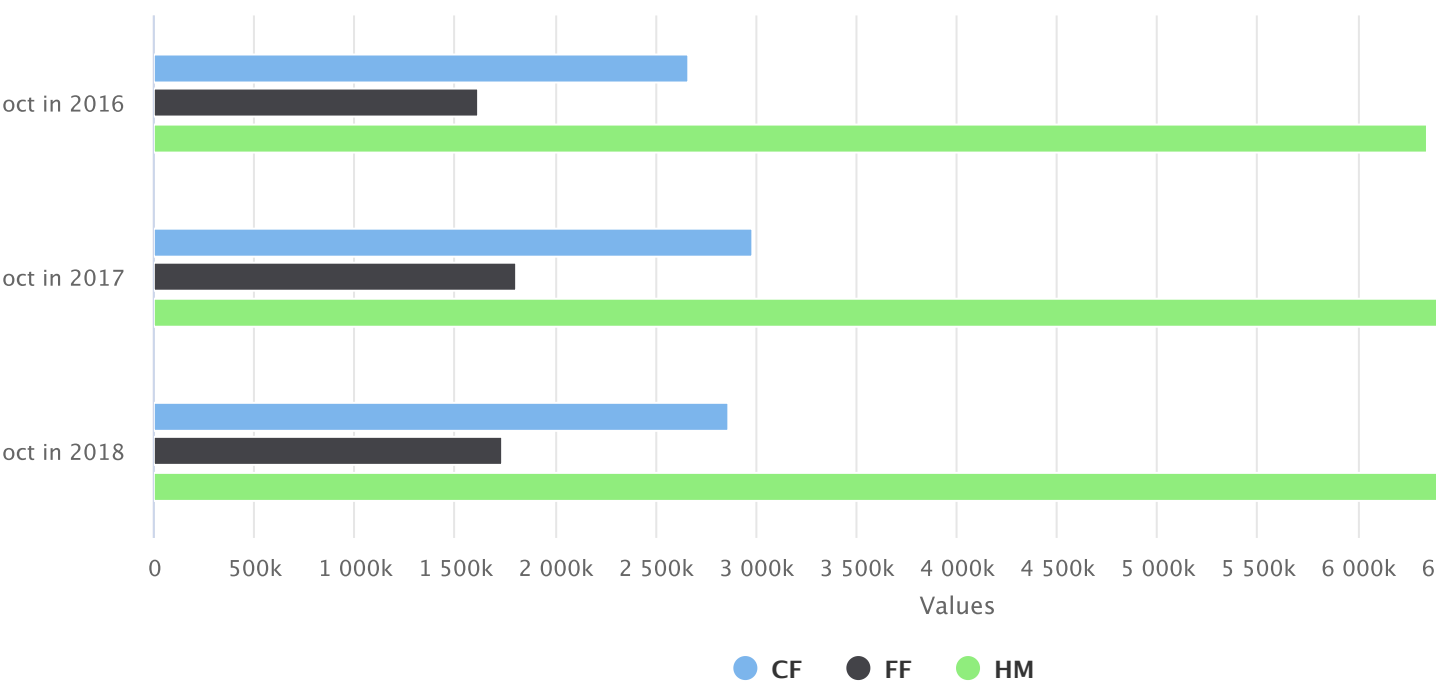
sales on October



overall sales on October according to region



overall sales on October according to region



In a conclusion, based on the visualizations and analysis, I assume that after Impossible Burger of Mcdonald's came out on October 2018, the sales of Mcdonald's were significantly affected until now. Impossible Burger was a kind of veggie food. The popularity of Impossible Burger and the decrease of sales of Mcdonald's were the sign to the public focus on health. People gradually tend to live and eat better and healthie than before. Therefore, the strategy I come up with is to publish health versions of Mcdonald's!