# **K-Means clustering for age groups**

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Occasionally, walking around my neighborhood I noticed some stores had been struggling to stay in business. I been wondering how come in such a populated neighborhood some stores barely surviving. Speaking with my friends and other people I learned that neighborhood’s population is what plays a decisive factor to open a store. If there are many people live in a neighborhood its a good enough reason to open one. But how do we know what those people need and wants to buy? Checking the product shelves of some stores I noticed many different products are available and yet the store still struggling to stay in business. Perhaps may be the struggle comes from not selling enough products that are in demand? And how do we know what is in demand? Just observing and guessing would not probably help much. Perhaps it might be misleading and very costly.

Using K-Mean clustering we can learn patterns and identify line of products, goods, and services to include in a store. This would increase store traffic. First, choose three clusters. Then, collect all the demographic data of people in the neighborhood and separate them into three different group clusters based on the attributes they share such as ethnicity, religion, customs, products they use and food preferences. Calculate k-means of each age group. After identifying k-means we can learn patterns and make sense of the data. Based on the result a store owner can adjust its marketing and advertising campaign to target specific age group. Identifying line of products and services to include in its store. Replenish its shelves with the most needed products and items. This kind of store most likely would have high customer instore traffic, high customer satisfaction and higher total sales then its competitors.

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## Conclusion

Finally, it is important to remember the demographics of neighborhoods are changing over time. Thus, the food and item preferences are also changing. One should remember to keep updating its model with newly available data to navigate its business strategy in a right direction.