**Final Project**

For this project, your team will act as business analysts who have been asked to provide an update on the status of Pizza sales for your assigned brand of pizza. You can choose the angle from which you wish to approach the project:

* You can approach the project from the point of view of Lowes Foods who will be concerned not only with sales of your pizza brand but also with sales of other products and brands.
* Or, you can approach the project from the point of view of the pizza manufacturer who is interested in determining which product lines are successful and warrant further investment and which product lines are struggling (and potentially should be retired).

Note that the goal of the project is to provide you with the opportunity to work with real data. As such, the project will provide you with hands-on experience in all phases of an analytics project including project planning, gathering and preparing the data, exploring the data with descriptive models and data visualizations, utilizing predictive modeling and data mining techniques to gain important insights, and effectively communicating these insights to various stakeholder groups. With that in mind, you do not need to limit yourself to methods and techniques covered in this course.

Some specific issues of interest to the retailer and/or manufacturer are:

* Product performance
  + How were sales over the 6-month period? Are sales trending up or down?
  + Are there differences in performance across the different pizza products for your brand?
* If new products were introduced during the time period under consideration, how did those products perform?
  + Was the new product a brand or line extension, or a new concept? (requires external research)
  + How quickly did the product gain significant market share, if at all?
  + After introduction, did the new product maintain its initial sales rate?
* How do your product sales compare to or impact the sales of other products? If a new product was introduced, did the new product appear to impact sales of existing products in the category (yours or the competitors).
* Are there products which should be discontinued. If so, why?
* What cross-sell or up-sell opportunities can you identify?
  + As a retailer, you could consider any products being sold in your store.
  + As a manufacturer, you could consider other products that fall under your parent brand (e.g., Nestle or Schwans) or suggest strategic partnerships with products that are sold outside of your parent brand.
* Can you use these data to help predict whether a customer will a newly introduced frozen pizza product? Are there additional variables you think would help improve your ability to predict whether a customer purchases a newly introduced pizza?
* Can you develop a regression model that could be used to predict pizza sales? Note that you can augment your data with external economic or retail sales data (for example, you can download a wide range of economic data from FreeLunch.com <https://www.economy.com/freelunch/default.asp>
* In addition to product performance (sales), you should also provide some insight into the high-level performance of your brand of pizza in the market. You may also want to compare the performance of your pizza brand to the performance of other brands in the market.  And, you may want to do some external research to determine where your pizza brand fits into the hierarchy of frozen pizza brands in the market (e.g., is it a budget brand, a gourmet brand, a kid-friendly brand, etc).
* Note that an additional data set containing product ratings and reviews for the brands of pizza being used for this project may provide additional insight into how your brand is perceived in the market. These data can also provide valuable feedback for marketing and product development and could also be used to augment other analytical models.

**The bottom line:** The ultimate goal of both the retailer and the manufacturer is to increase sales, gain market share, insure customer satisfaction, and streamline their product portfolios. You can think of this project as first developing a “state of the product” for your pizza brand and then providing insights and recommendations on how the retailer or manufacturer should move forward in order to insure that they are meeting their sales and marketing goals.

**Your Deliverable:**

You can think of your deliverable in three parts:

1. You will deliver a high-level presentation of your results to the class on Wednesday, December 6. This presentation should be geared towards the sales and marketing managers for the supermarket and/or the product line managers for the brand.
2. You will provide a (short) written Executive Summary of your findings (again geared towards a management level audience). Note that you can include tables / figures as part of this document to support your findings and recommendations. This will essentially be a written summary that could accompany / supplement your verbal presentation.
3. You will provide an appendix to your report that will include any additional technical details that would allow an analytics professional to understand and (potentially) reproduce your results.

**Grading Rubric:**

Professional Presentation: 25 points

Clearly written executive summary: 20 points

Thorough, complete, and accurate statistical analysis: 40 points

Peer Feedback: 10 points

Creativity: 5 points