**Data Science Practicum Project Proposal**

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2. Title:
   * Inflation Rate Forecasting for High Consumption Food Commodities
3. Problem Statement:
   * Due to the high level of volatility in the market, especially for food, it is imperative that organizations have more agility and accuracy in their inflation forecasting. This will allow them to anticipate fluctuations in the supply chain, source more aggressively and create more robust budgets.
4. Data Science Tasks
   * Prediction using time series analysis, which will include web scrapping for world events that occurred prior to spikes in inflation rates.
   * Data visualization which will be used to understand past trends and future forecasting
   * Supervised machine learning will be used to see how close a variety of real world data sets come to meeting the consumer index report
5. Data
   * The data being used for this practicum will be values from the consumer index report for wheat, dairy and chicken as well as 2-3 real world purchasing data for each of those commodities. While only 2-3 datasets will be used for this practicum the datasets will have a large amount of spend over multiple years when possible. To better understand what could be causing the fluctuations in the market, web scrapping will be used. The web scrapping will be for 6 months prior to each spike in inflation rates.
6. Analysis
   * The data will be analyze in multiple ways such as KNN analysis, text analysis and data visualization using Python and Tableau.
7. Challenges:
   * Understanding which world events are contributing to spikes in inflation rates vs what might be coincidental may be challenging. To mitigate this each world event will be analyzed to make sure that it is a contributing factor, however, coincidental events will be broken out into a separate output to insure we are not removing the data all together because some events may appear coincidental but are not.
8. Timeline:

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| Week | Deliverable |
| Week 2 | Project Proposal and Data Collection |
| Week 3 | Data Cleansing and EDA |
| Week 4 | Machine Learning Analysis |
| Week 5 | Text Analysis/Web Scrapping |
| Week 6 | Data Analysis |
| Week 7 | Data Visualization |
| Week 8 | Presentation |

1. GitHub Repository:
   * <https://github.com/lswatek/Data-Science-Practicum-.git>