# 1. Introduction

The goal of this project is to design a classifier to use for sentiment analysis of product set consists of reviews written by Amazon customers for various food products. The re on a 5 point scale, have been adjusted to a +1 or -1 scale, representing a positive or ne respectively.

Below are two example entries from our dataset. Each entry consists of the review and reviews were written by different customers describing their experience with a sugar-f

| **Review** |
| --- |
| *Nasty No flavor. The candy is just red, No flavor. Just plan and chewy. I would never buy them aga* |
| *YUMMY! You would never guess that they're sugar-free and it's so great that you can eat them pr much guilt free! i was so impressed that i've ordered some for myself (w dark chocolate) to take t office. These are just EXCELLENT!* |

In order to automatically analyze reviews, you will need to complete the following tasks

1. Implement and compare three types of linear classifiers: the **perceptron** algorithm, th algorithm, and the **Pegasos** algorithm.

2. Use your classifiers on the food review dataset, using some simple text features.

3. Experiment with additional features and explore their impact on classifier performanc

---

**Setup Details:**

For this project and throughout the course we will be using Python 3.8 with some addit strongly recommend that you take note of how the NumPy numerical library is used in t read through the on-line NumPy tutorial. **NumPy arrays are much more efficient than l when doing numerical computation. In addition, using NumPy will substantially redu will need to write.**

1. *Note on software: For this project, you will need the **NumPy** numerical toolbox, and t toolbox.*

2. Download sentiment_analysis.tar.gz and untar it into a working directory. The `sentim` contains the various data files in **.tsv** format, along with the following python files:

   - **project1.py** contains various useful functions and function templates that you will u learning algorithms.

can also impl
**project1.py** fi
second development flow.

Previous Next