**Semester Project Documentation**

**1. What is the question that you are trying to answer through the visualization?**

There are 3 main questions for which we want answer from the visualizations. First, does our graph provide a proper solution to what we need? Second, is the information we derive is accurate? And lastly, is our graph easy to interpret for these questions.

Our project’s graphs illustrate the production and export of grains in Canada from year 2014 to 2021 and we could do thorough analysis for the information required. Moreover, we got accurate information for analysis in the project. The graphs that we have used are easy to interpret and the users can easily grab the information.

**2. Background Info**

Canada exports a lot of goods to different countries all over the world, one of the biggest exported products is Natural gas and Oil, second is Grains and wheats. Canada comes in 2nd place after Russia in grain exports.

What makes Canadian grain sought after this much is the quality of the grains which is impeccable, grains such as durum wheat can be used in in making pasta, and wheat flour can be used for bread.

In this project we will be looking at the different provinces in Canada and see how each one contributes to the production of grain and what each province is known for and who are the biggest importer of grains from Canada.

**3. The student’s difficulties encountered and how they were resolved**

While implementing the project, the major difficulties we faced were during the data cleaning stage. It took us quite some time to figure out how to make changes to date so that it can be useful for creating some visualization.

We performed several cleaning steps for prepping our data. Majority of them being grouping values, removing unwanted columns, and creating calculated fields. We had to do some research to find out the correct formula for creating the calculated field. We did some exploration for selecting which graphs could be used for easy interpretation and customizing visualizations.

**4. Analysis**

Initially, we had a lot of raw data which we cleaned using Tableau Data Prep for proper visualization. For proper visualization we have used various graphs and maps. We have the graphs which represent the type of crops produced in various province of Canada and the maps which represent the export of several types of crops in various region.

We got many observations throughout the process of visualization. Some of them are:

* China is the biggest importer of grains from Canada. Canola is imported in large amounts and lentils is least imported by China.
* Wheat is the largest produced crop in Canada and is also the crop which exported in huge amounts around the world followed by Canola.
* The United States imports a variety of crops from Canada, wheat being the highest followed by oats and the least imported crop by the US is chick peas.
* Saskatchewan is the largest producer of grains followed by Alberta whereas British Columbia produces the least number of grains.
* Ontario is the largest producer of corn followed by Quebec.
* A peak in exports of crops was witnessed in the year 2020.

**5. Conclusion**

From the data, we could clarify that the demand of crops from Canada has been significant over the years provided there have been fluctuations in production of crops. In the light of these facts, we have presented the visualization which interprets the data of crops produced in Canada in different provinces and exported in various countries all around the world.