1.

<https://public.tableau.com/app/profile/abhinav.mahesh3840/viz/WorldwideFoodProductionDashboard/Dashboard>

Worldwide Food Production Dashboard

Visualizes the relationship between average amount of food production (from 1961 - 2013, measured in units of 1000 tonnes) for different food items, and which countries produce them.

Dataset: <https://www.kaggle.com/datasets/dorbicycle/world-foodfeed-production?resource=download&select=FAO.csv>

2.

**1)** Which three countries produce the most wheat in the world for human consumption?

**2)** The three countries that produce the most wheat in the world from most to least are:

1. China, mainland
2. India
3. United States of America

**3)** The stacked bar chart contains data about the average amount of each food item produced (only countries that have a production greater than 5000 of 1000 tonnes are included). The bars are stacked in descending order where countries that produce the most are at the bottom and countries that produce the least are at the top. The map contains all the countries that produce food. When wheat is selected as a food item, the countries that produce that food item are highlighted on the map. The bar is also sorted such that we can find which countries produce the most wheat to the least. By selecting the three biggest bars from the bottom, we can match their color to the country on the map and we can tell which three countries produce the most wheat. The three bars that are biggest at the bottom are the same color as China, India, and the United States, in that order, on the map. The rest of the countries that produce wheat are also contained in the stacked bar, but they have smaller production amounts than these countries. Hence, both charts help us to find the answer to this question.

3.

[Dashboard%20Screenshot.png](https://coursera-assessments.s3.amazonaws.com/assessments/1686374573275/fbd21586-77bb-4b29-9d17-fb116b4b60df/Dashboard%20Screenshot.png)

Dashboard Screenshot

Screenshot of the dashboard for the answer to the previous question.

4.

This dashboard shows a stacked bar chart on the left with each bar containing multiple colors corresponding to the production amounts of different countries for a particular food item. On the right is a map of the countries that produce food highlighted. The color scheme is consistent between the plots so that the different colors on the bars in the left chart match the colors used for countries on the right so that trends can be seen on the left. For example, when a country is selected on the right, its production amounts for different food items can be seen on the left, while retaining context with respect to the whole bar chat. Similarly, when a food item is selected on the left, the color scheme matches different countries on the right, clearly visualizing the data trend. The layout is evenly distributed left-right across the screen since there are no similarities in the axes of the two plots. However, additional space is allocated on the far right for colors matching countries, which helps us visually understand the trends as the color scheme applies to both charts. The names of food items are ordered alphabetically, and the stacked bar is in descending order with denser-producing countries on the bottom. This makes the process of selecting and viewing trends based on color consistency easier.

5.

The stacked bar chart on the left is the "first" chart. This chart allows us to visualize data represented by the Average Amount of Item Produced as a quantitative continuous dependent variable on the vertical scale in relation to Food Items which is a nominal independent variable on the horizontal scale. These are the axes of the chart. The marks on the chart are the bars that represent food production amounts for different food items. The bars are also sectioned into smaller colored sections, ordered from biggest to smallest, each representing the food production of a nominal variable representing the country. The food production amounts of different countries are easily comparable and signify relationships between different countries for a food item. The choice of this chart enables us to visualize data easily with respect to these three variables as we can visualize trends occurring between countries and cross-filter them on the right. The common variable highlighted across the charts is the country.

6.

The symbol map on the right is the "second" chart. This chart allows us to graphically locate a place given its geographical coordinates as axes. Latitude and Longitude are the variables that indicate the position of a data point on the map. The marks are the colored circles that represent an Area as a country in relation to its latitude and longitude. The countries highlighted on the right depict the food trends occurring on the left. When comparing different countries on the right based on their production amounts for food items, it is easier to visualize this given their geographical locations on a map. This is why the symbol map promotes visual understanding of data in relation to the data on the left.

7.

The details on demand provided on the mouseover of a colored bar on a stacked bar are the Area or Country, Item, Latitude, Longitude, and Average Amount of Item Produced for that country or highlighted colored bar. On the map, a mouseover on a colored dot provides details such as the Area or Country, Latitude, and Longitude. This helps to correlate information from left to right and right to left.

8.

By selecting a food item on the left chart, countries on the right with the same color scheme are highlighted. Similarly, when countries are selected on the right, their food production trends for different food items are displayed on the left with a matching color scheme. Selecting a field such as a food item on the left acts as a filter and selects only related countries on the right. Selecting a country on the right filters only that country on the left for all food items present. This occurs for multiple food items and countries as well. This is how the dashboard supports bi-directional cross-filtering between these two charts.