

Title: Data Analytics and Data Visualization (iCEP) with Microsoft Power BI

PART 1 : GROUP DETAILS

Group Leader : Muhammad Zhafran Abyaz (A21EC4016)

Task : -Lists out the task and divide it among the members.
 -Data analytics interpretation for the chosen data (variable transformations and description)
 -A narrative of the analytics we will conduct.

Group Members :

1. Nurkhairunnadiya binti Ahmadi (A21EC0217)
 Task : -Describe Trends of Data Analytics in Different Sectors and reflection of these trends.

2. Norliyana Aisyah binti Zubir (A21EC0215)

Task : -Describe Industrial Talk 7 related to Microsoft BI as discussed in the talk; what, when and where to use it; and the reflection from the talk.

3. Mohsin Ali (A20EC4058)

Task : -Data analytics interpretation for the chosen data (discussion and conclusion of the results for data visualization)

However, all members are free to review and edit the data and contents of the report. All data and contents collected and used has been reviewed and discussed among members.

PART 2: INTRODUCTION

Emerging Trends: Data Analytics

Data analytics is a process used to extract and analyze information or data that was being collected from various sources in order to create a conclusion of the data. Data analytics is used in many sectors such as government and public sectors, education, retail, media and healthcare by using descriptive analytics, diagnostic analytics, predictive analytics and prescriptive analytics.

Descriptive analytics is used in order to compare the current data and former data and come to the conclusion of these data. For example, in government and public sectors, they use descriptive analytics in order to keep up the company's data, funds and market in order to detect and improve their deficiency. Next, predictive analytics is to guess or estimate the events that will happen such as in the retail industry where the company will consider and expect what will happen to their purchases and goods. Meanwhile, diagnostic analytics is about the reasons, consequences or relations between different events. For example, the global stock market performance and instability keep getting worse due to COVID-19 transmission. Last but not least, prescriptive analytics which examines the data and suggests an action or plan on what to do. For example, Since COVID-19 transmission is getting faster and more dangerous, booster shots have been authorized around the world in order to maintain their level of immunity for a longer time to reduce the risk of infection.

In conclusion, data analytics is important in order to save time by analyzing the data as a whole, to be innovative when encountering problems and to improve efficiency and effectiveness especially in nowadays society where technology is important in our everyday lives. Hence, data analytics is a must in order to optimize the usage of technology in various sectors such as government and public sectors, education, retail, media, healthcare and many more.

Industrial Talk 7 : Data Visualization and Microsoft Power BI

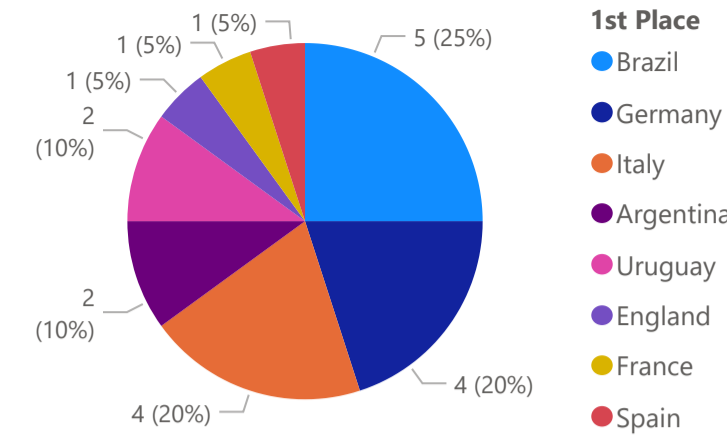
On December 23, 2021, the Technology and Information System Course UTM presented an industry talk on the topic of Introduction to Data Visualization. Data visualization is one of the methods we use to exhibit and communicate the information we've gathered. This data visualization will assist us in presenting the facts or thoughts that we want to convey to others in a visual manner that they can understand.

One of the most crucial aspects of data visualization is that each piece of data that we transform into a graphic must include a relationship and a description that others can comprehend. The sort of data we have, the link between each of the data, and a good chart to display our data are all things to consider when creating the finest data visualization. The software provided as an example of how we can build data visualizations is Microsoft Power BI.

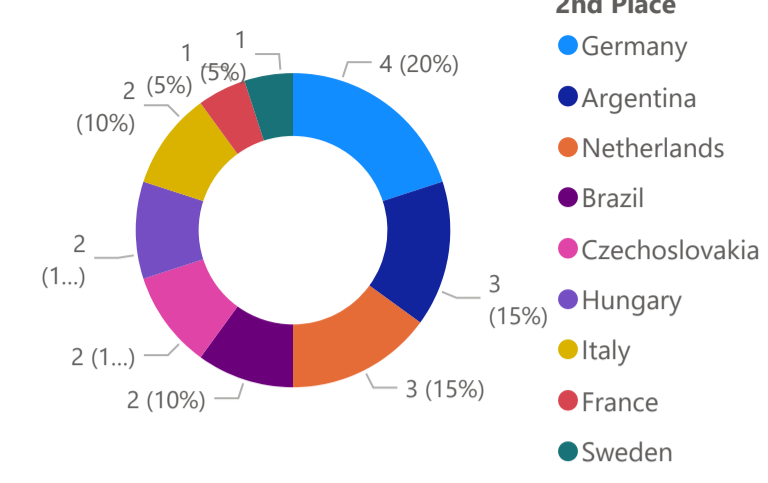
Microsoft Power BI is frequently used by businesses and organizations that need to examine data from their businesses, such as product sales, for each month of the year to make improvements or predictions. It is not only used to generate data visualizations like time pie charts and line charts, but it can also be used to report data in the same way that Microsoft Excel does. This data visualization can be used to communicate data to customers, top managers, and clients.

We learned how to utilize data visualization and the stimulation of Microsoft Power BI in this session, which will help us manage our data more effectively. There will be a lot of data that we have to deal with in our everyday activities in this modern era of technology, and this data visualization will reduce the time it takes to evaluate these data one by one. It's because by applying visualization, we can quickly and efficiently examine data by looking at the chart we've generated.

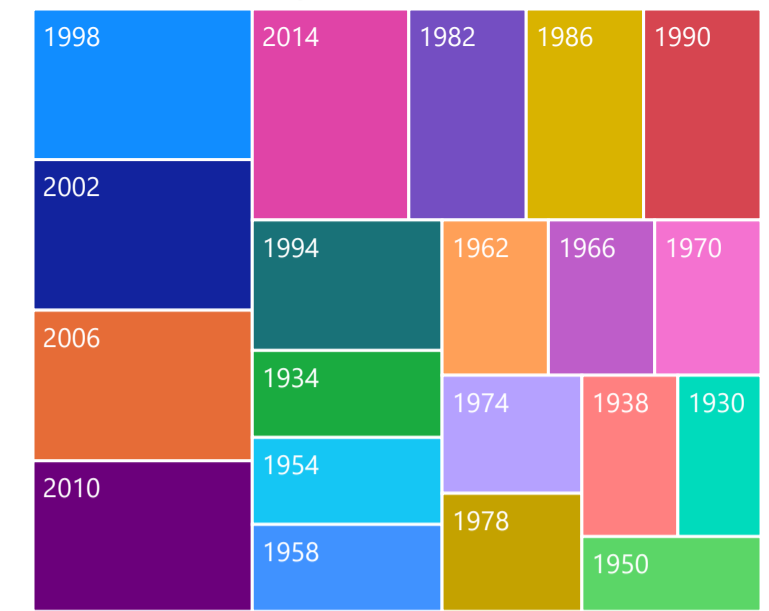
Count of Year by 1st Place



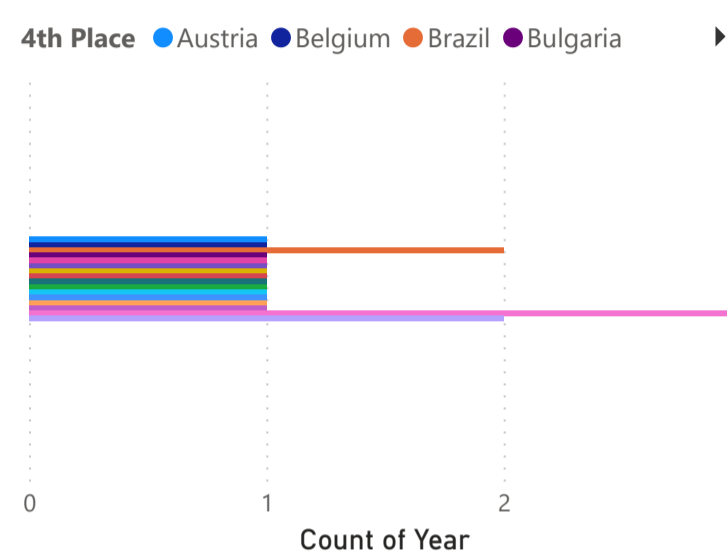
Count of Year by 2nd Place



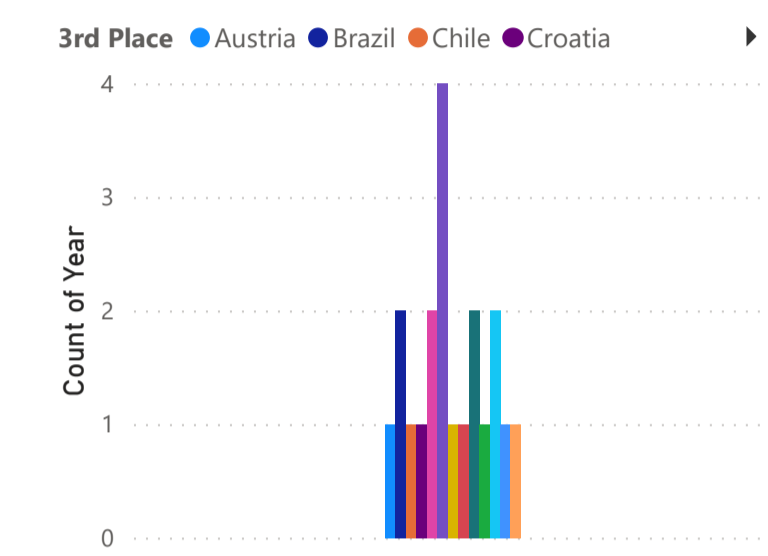
Qualified Teams by Year



Count of Year by 4th Place



Count of Year by 3rd Place



PART 3 : DATA ANALYTICS INTERPRETATION FOR THE CHOSEN DATA

Analytics Narrative

With Microsoft Power BI, we can visualize the data that we want to show in many types of charts. We can also transform the variable to adjust it to how we'll present the data. In our case, we searched the data that we'll visualize from Kaggle, we'll use the record of the FIFA World Cup from the first cup until now as the data for our visualization. From this data, We want to find out which teams have reached the podium, from 1st place to 4th place. We also want to find out which years that have the most teams qualified for the World Cup.

Conclusion

In the beginning, the year 1930, was the first FIFA World Cup only 13 teams qualified in the world cup. In the year 1990, 24 teams qualified in the FIFA World Cup. In the year 1998 and onwards, 32 teams participated in the FIFA World Cup. It is most no. of teams qualifying the FIFA World Cup.

Brazil is the most successful world cup team with 5 Titles. Germany and Italy are in 2nd position with 4 Titles in count of Years by first place. Argentina and Uruguay are in Third place with 2 Titles. Spain, France, and England have won 1 title.

Germany has won 2nd place four times in FIFA World Cup. Netherlands and Argentina have won 2nd place three times. Brazil, Czechoslovakia, Hungary, France, and Italy have won 2nd place two times. Frances and Sweden have won 2nd place one time.

Germany has won 3rd place four times. Brazil, France, Poland, and Sweden have won 3rd place two times. Austria, Chile, Croatia, Italy, Netherlands, Portugal, Turkey, and USA has won 3rd place one time.

Uruguay has won 4th Place three times. Yugoslavia and Brazil have won 4th place two times. Sweden, Spain, Soviet Union, Portugal, Netherlands, Korea Republic, Italy, Germany, France, England and Bulgaria has won 4th place one time.