

Depression: A Common Mental Disorder

Everyone experiences sadness and unhappiness at some point in their lives. Clinical Depression, however, is more intense and of longer duration than typical sadness or grief, which interferes with a person's ability to engage in daily activities. The symptoms of depression can include: loss of interest or pleasure in previously enjoyable activities, major changes in appetite (either significantly reduced or increased), sleep problems (sleeping too much or too little), fatigue, a feeling of worthlessness or hopelessness, problems with concentration and making decisions, and thoughts of suicide. This mental disorder is common and the percentage of people suffering from depression varies according to countries. In this project we are trying to analyze the depression data for different countries and extract some insights from the data using Business Intelligence tools. To Extract the Insights from the data and put the data in the form of visualizations, Dashboards and Story we employed Tableau tool.

Technical Architecture:



Project Flow

To accomplish this, we have to complete all the activities listed below,

- Define Problem / Problem Understandingo Specify the business problem
 - o Business requirements
 - o Literature Survey
 - o Social or Business Impact.
- Data Collection & Extraction from Database
 - o Collect the dataset,
 - o Storing Data in DB
 - o Perform SQL Operations
 - o Connect DB with Tableau
- Data Preparation
 - o Prepare the Data for Visualization
- Data Visualizations
 - o No of Unique Visualizations
- Dashboard
 - o Responsive and Design of Dashboard
- Story
 - o No of Scenes of Story
- Performance Testing
 - o Amount of Data Rendered to DB ‘
 - o No of Calculation Fields
 - o No of Visualizations/ Graphs
- Web Integration
 - o Dashboard and Story embed with UI With Flask

Milestone 1: Define Problem / Problem Understanding

Activity 1: Specify the business problem

Everyone experiences sadness and unhappiness at some point in their lives. Clinical Depression, however, is more intense and of longer duration than typical sadness or grief, which interferes with a person's ability to engage in daily activities. The symptoms of depression can include: loss of interest or pleasure in previously enjoyable activities, major changes in appetite (either significantly reduced or increased), sleep problems (sleeping too much or too little), fatigue, a feeling of worthlessness or hopelessness, problems with concentration and making decisions, and thoughts of suicide. This mental disorder is common and the percentage of people suffering from depression varies according to countries.

depression is a widespread mental health issue that affects millions of people worldwide. While it can have a profound impact on individuals and society, it is treatable and manageable with appropriate interventions. Increasing awareness, reducing stigma, improving access to care, and advancing research are critical steps in addressing depression as a common mental disorder. In this project we are trying to analyze the depression data for different countries and extract some insights from the data using Business Intelligence tools. To Extract the Insights from the data and put the data in the form of visualizations, Dashboards and Story we employed Tableau tool.

Activity 2: Business requirements

This project is useful from the perspective of countries who have high number of people suffering with depression. There are many complementing reasons which support depression. The countries which have high percentage of people having depression can see the underlying reason for the depression in their country. The ultimate goal is to gain insights and improve performance through data visualization techniques.

Activity 3: Literature Survey

1. Existing Problem

- Depression is a global mental health issue, characterized by prolonged sadness.
- Extensive literature exists on depression's prevalence, risk factors, diagnosis, and treatment.
- Preventive strategies and public health initiatives are also studied.

2. Data Analysis and Business Intelligence in Mental Health

- Data analysis and Business Intelligence tools, like Tableau, are increasingly

used in mental health research.

- They enable data-driven insights, interactive dashboards, and geospatial analysis in the field.
- These tools enhance understanding and decision-making in mental health.

3. Challenges and Future Directions

- Challenges include data privacy, quality, and effective interventions.
- The project's future scope involves expansion, research collaboration, and innovative applications of data analysis and Business Intelligence in mental health.

Activity 4: Social or Business Impact.

Social Impact: This project throws light on the reasons causing depression, how they are affecting countries all around the world. There are a number of reasons which support depression, they can be lifestyle habits or different mental disorders. If these reasons are controlled, the percentage of depression affected people will reduce.

Business Model/Impact: The business impact of this project is to the countries that are affected by depression huge amounts. The reasons are stated in the projects as different factors affect depression.

Milestone 2: Data Collection & Extraction from Database

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

Activity 1: Downloading the dataset

Please use the link to download the dataset: [Link](#)

Activity 1.1: Understand the data

Data contains all the meta information regarding the columns described in the CSV files

Column Description of the Dataset:

1. Index: Index of the entry
2. Entity: Country Name
3. Code: Code for Country name
4. Year: Year of entry
5. Schizophrenia (%): Percentage of people affected by Schizophrenia
6. Bipolar disorder (%): Percentage of People affected by Bipolar Disorder
7. Eating disorder (%): Percentage of People affected by Eating Disorders
8. Anxiety Disorder (%): Percentage of People affected by Anxiety Disorder
9. Drug Use Disorder (%): Percentage of People affected by Drug Use Disorder
10. Depression (%): Percentage of People affected by Depression
11. Alcohol use Disorder (%): Percentage of people affected by Alcohol use

Milestone 3: Data Preparation

Activity 1: Prepare the Data for Visualization by using Python (Jupyter notebook)

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

Milestone 4: Data Visualization

Data visualization is the process of creating graphical representations of data to help people understand and explore the information. The goal of data visualization is to make complex datasets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

Activity 1: No of Unique Visualizations

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of banks include bar charts, line charts, heat maps, scatter plots, pie charts, Maps etc. These visualizations can be used to check the complementing disorders and the lifestyle habits complementing depression among countries. It also shows the depression among countries.

Activity 1.1 : Average Alcohol Use Disorder %

Activity 1.2: Average Drug Use Disorder %

Activity 1.3: Average Eating Disorder %

Activity 1.4: Average Anxiety Disorder %

Activity 1.5: Average Bipolar Disorder %

Activity 1.6: Average Schizophrenia Disorder %

Activity 1.7: Average Depression over 2 decades

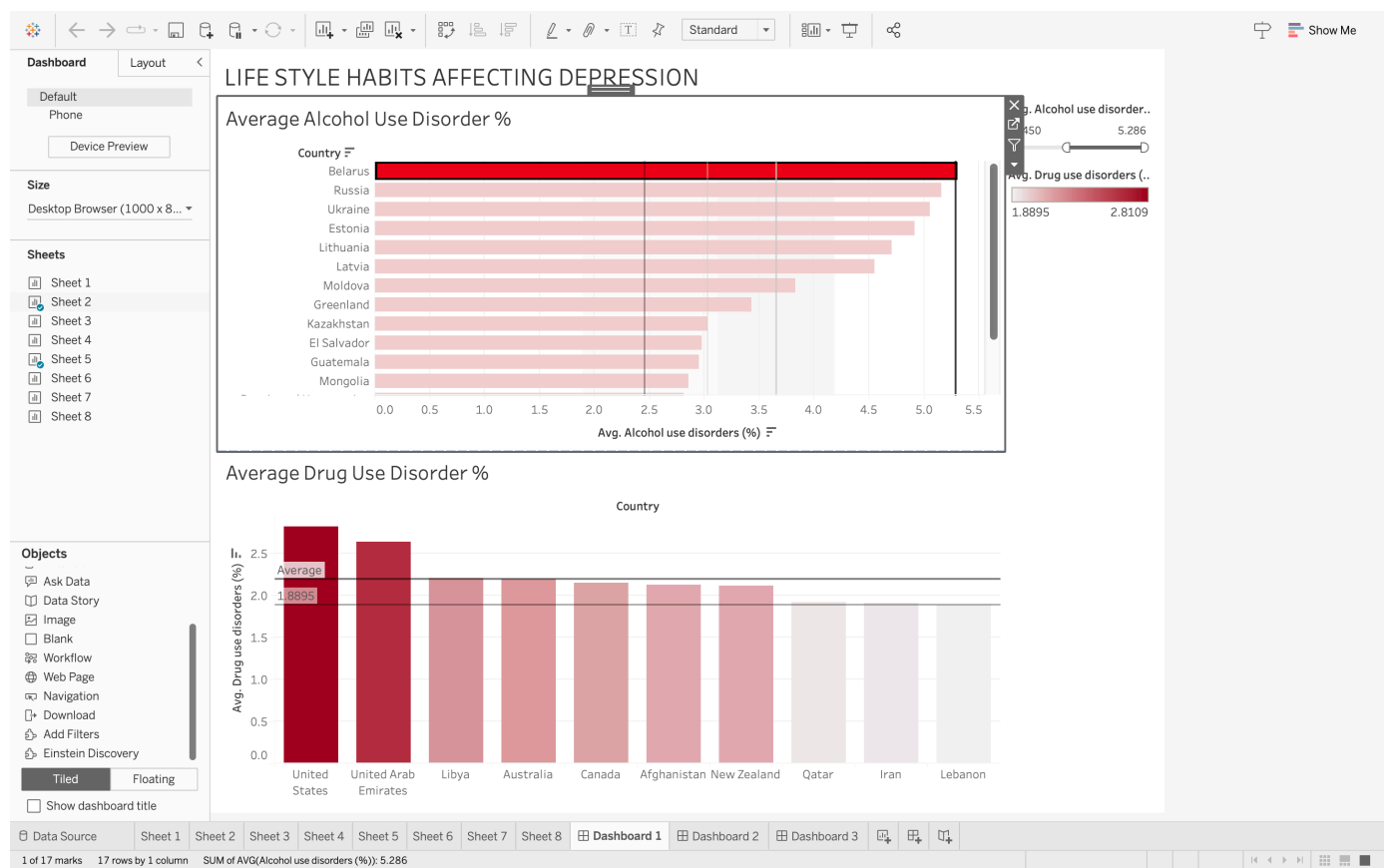
**Activity 1.8: Geographical Map representation of
average Depression**

Milestone 5: Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

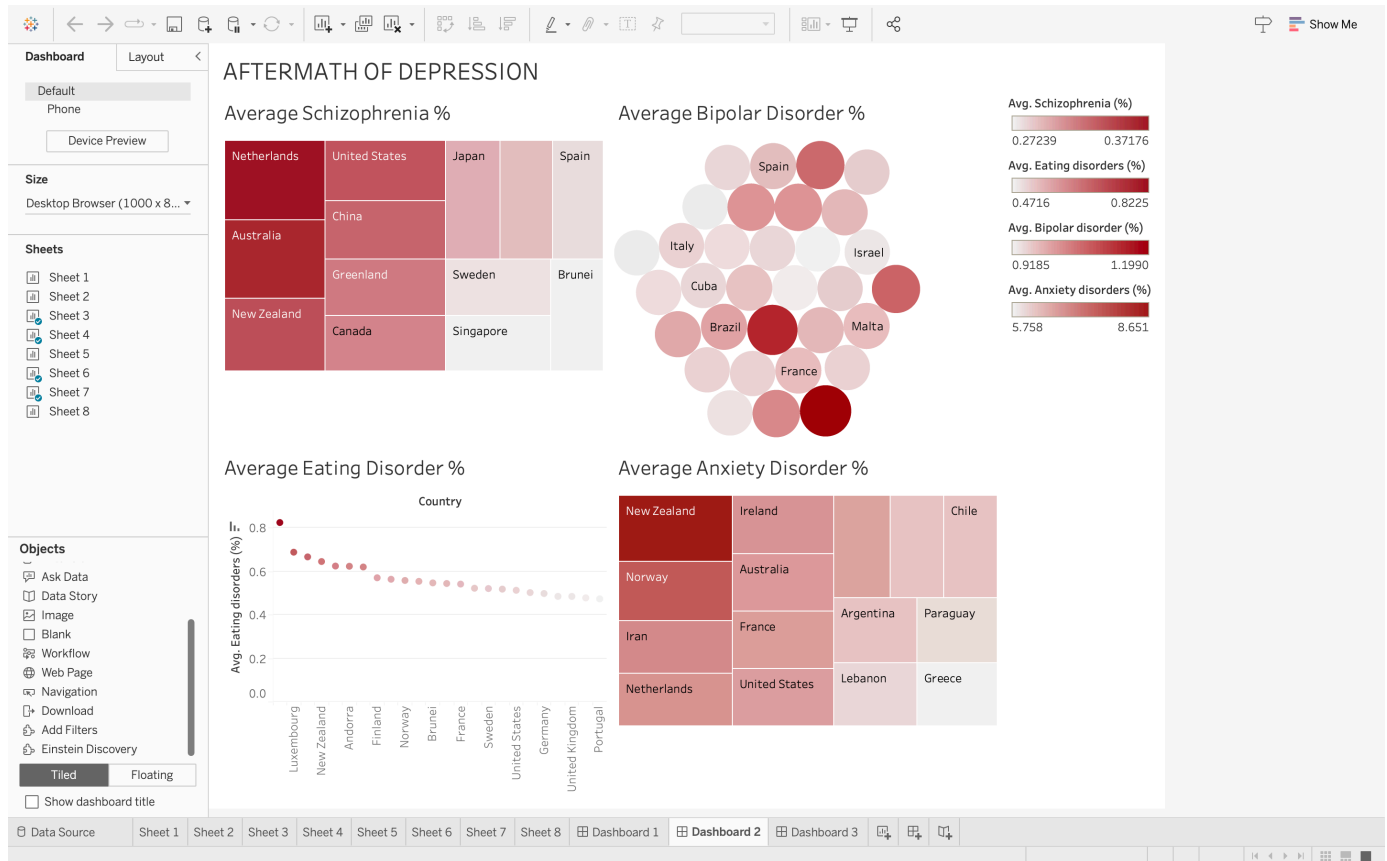
Activity 1- Responsive Design of Dashboard 1

Once you have created views on different sheets in Tableau, you can pull them into a dashboard.



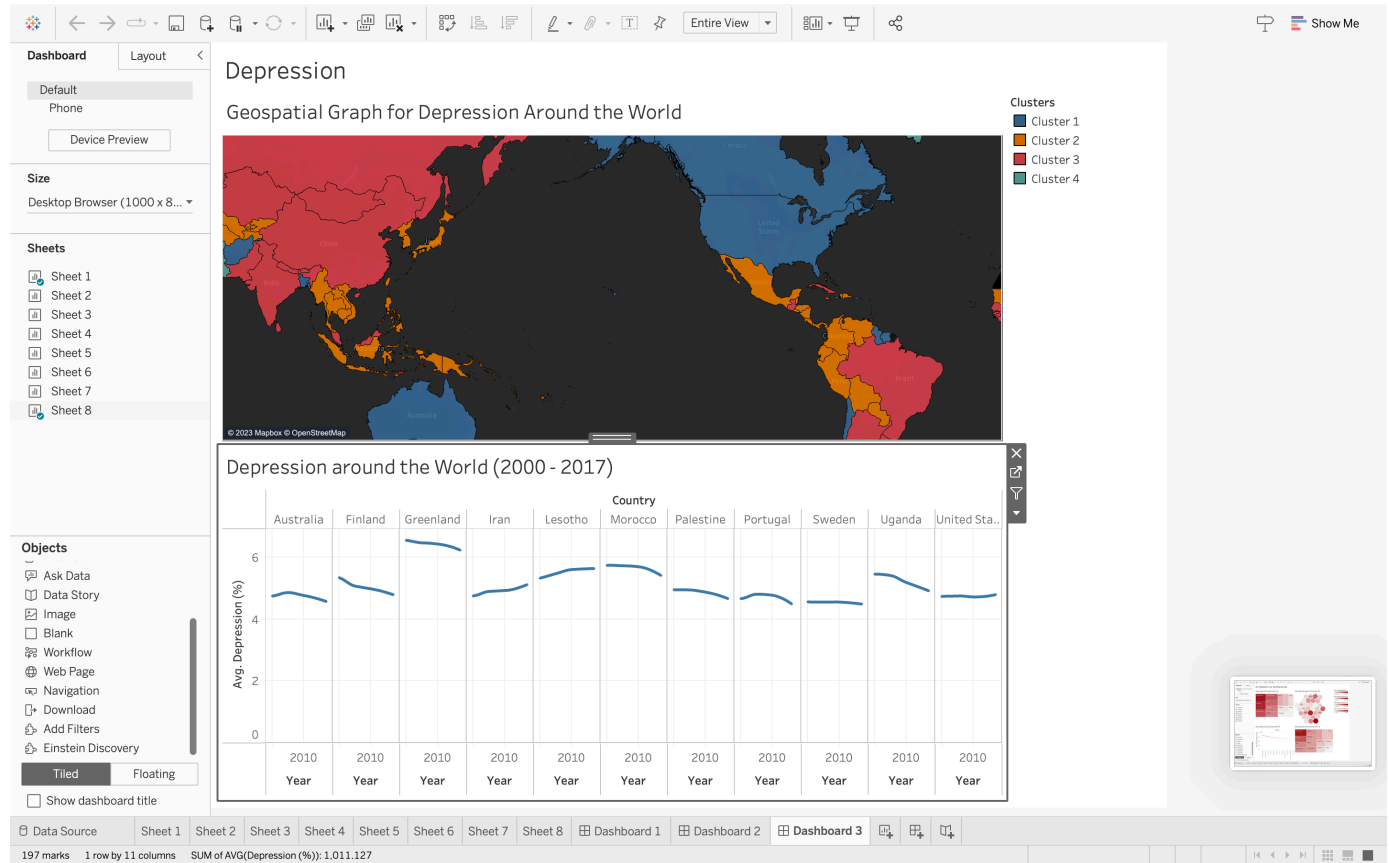
Activity 2- Responsive Design of Dashboard 2

Once you have created views on different sheets in Tableau, you can pull them into adashboard.



Activity 3- Responsive Design of Dashboard 3

Once you have created views on different sheets in Tableau, you can pull them into adashboard.

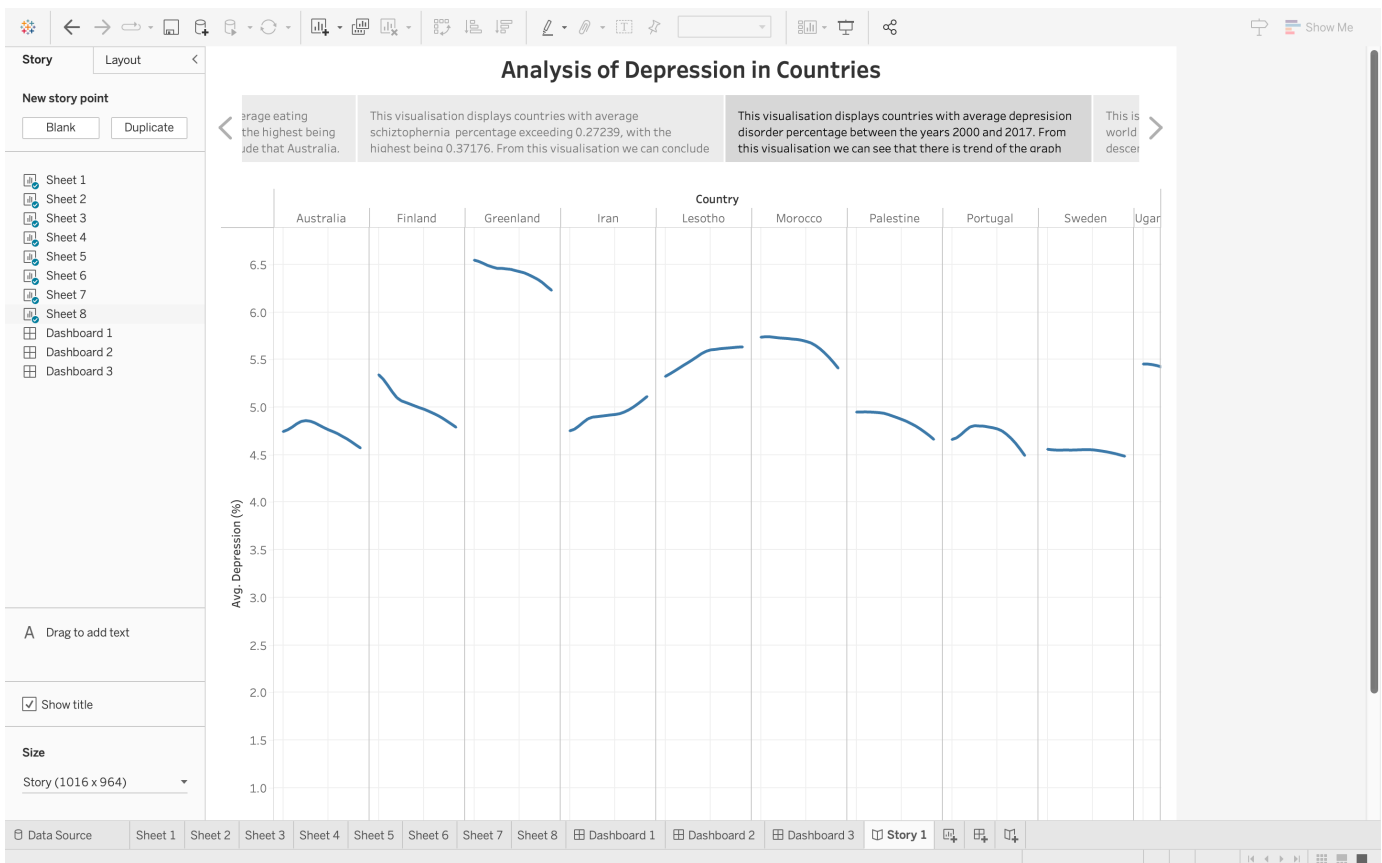


Milestone 6: Story

A data story is a way of presenting data and analysis in a narrative format, intending to make the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis logically and systematically, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

Activity 1- No of Scenes of Story




The number of scenes in a storyboard for a data visualization analysis of the performance of banks will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.



Milestone 7: Performance Testing

Activity 1: No of Calculation Fields

Tables

	Country
	Depression (%) (bin)
	Year
	<i>Measure Names</i>
<hr/>	
	Alcohol use disorders (%)
	Anxiety disorders (%)
	Bipolar disorder (%)
	Depression (%)
	Drug use disorders (%)
	Eating disorders (%)
	Index
	Schizophrenia (%)
	<i>Latitude (generated)</i>
	<i>Longitude (generated)</i>
	<i>Worksheet (Count)</i>
	<i>Measure Values</i>

Activity 2: No of Visualizations/ Graphs

1. Average Alcohol Disorder %
2. Average Drug use Disorder %
3. Average Eating Disorder %
4. Average Anxiety Disorder %
5. Average Bipolar Disorder %
6. Average Schizophrenia Disorder %
7. Average Depression %
8. Average of Depression % over 2 Decades

