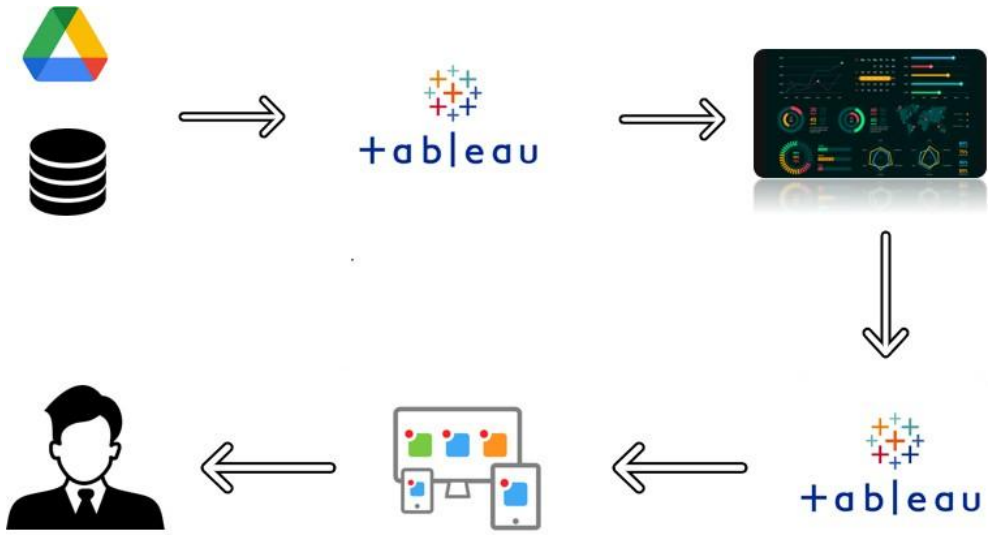
Depression: A Common Mental Disorder

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

Milestone 1: Define Problem / Problem Understanding

Activity 1: Specify the business problem

Refer Project Description

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

A literature survey for the depression analysis would involve researching and reviewing previous studies, articles, and reports on the topic. This could include information on the methods and techniques used for tackling depression, as well as the results and conclusions of these studies. Some potential areas of focus for a literature survey on depression analysis could include:

Risk management, which involves identifying, assessing, and mitigating the various risks facing a country, such as defense risk, market risk, and operational risk.

The reasons that cause depression or support depression.

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

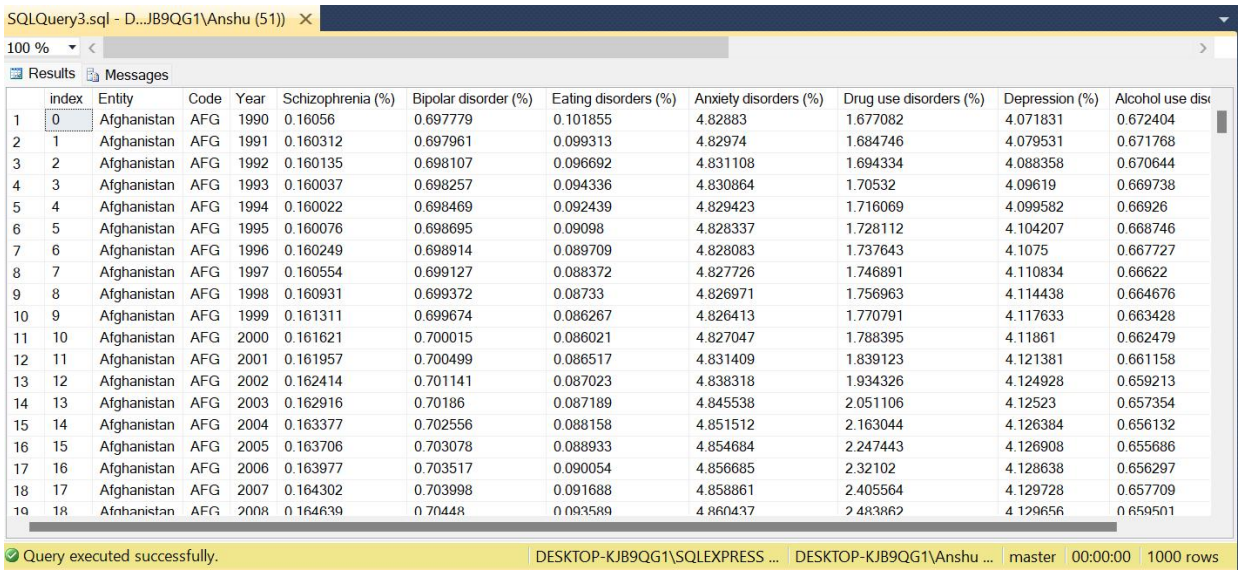
Column Description of the Dataset:

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

Activity 2: Storing Data in DB & Perform SQL Operations:

Query 1;

```
SELECT TOP 1000 [index]
      ,[Entity]
      ,[Code]
      ,[Year]
      ,[Schizophrenia (%)]
      ,[Bipolar disorder (%)]
      ,[Eating disorders (%)]
      ,[Anxiety disorders (%)]
      ,[Drug use disorders (%)]
      ,[Depression (%)]
      ,[Alcohol use disorders (%)]
  FROM [mentahealth_data].[dbo].[Db_mentalhealth]
```



SQLQuery3.sql - D...JB9QG1\Anshu (51))

100 %

Results | Messages

	index	Entity	Code	Year	Schizophrenia (%)	Bipolar disorder (%)	Eating disorders (%)	Anxiety disorders (%)	Drug use disorders (%)	Depression (%)	Alcohol use dis
1	0	Afghanistan	AFG	1990	0.16056	0.697779	0.101855	4.82883	1.677082	4.071831	0.672404
2	1	Afghanistan	AFG	1991	0.160312	0.697961	0.099313	4.82974	1.684746	4.079531	0.671768
3	2	Afghanistan	AFG	1992	0.160135	0.698107	0.096692	4.831108	1.694334	4.088358	0.670644
4	3	Afghanistan	AFG	1993	0.160037	0.698257	0.094336	4.830864	1.70532	4.09619	0.669738
5	4	Afghanistan	AFG	1994	0.160022	0.698469	0.092439	4.829423	1.716069	4.099582	0.66926
6	5	Afghanistan	AFG	1995	0.160076	0.698695	0.09098	4.828337	1.728112	4.104207	0.668746
7	6	Afghanistan	AFG	1996	0.160249	0.698914	0.089709	4.828083	1.737643	4.1075	0.667727
8	7	Afghanistan	AFG	1997	0.160554	0.699127	0.088372	4.827726	1.746891	4.110834	0.66622
9	8	Afghanistan	AFG	1998	0.160931	0.699372	0.08733	4.826971	1.756963	4.114438	0.664676
10	9	Afghanistan	AFG	1999	0.161311	0.699674	0.086267	4.826413	1.770791	4.117633	0.663428
11	10	Afghanistan	AFG	2000	0.161621	0.700015	0.086021	4.827047	1.788395	4.11861	0.662479
12	11	Afghanistan	AFG	2001	0.161957	0.700499	0.086517	4.831409	1.839123	4.121381	0.661158
13	12	Afghanistan	AFG	2002	0.162414	0.701141	0.087023	4.838318	1.934326	4.124928	0.659213
14	13	Afghanistan	AFG	2003	0.162916	0.70186	0.087189	4.845538	2.051106	4.12523	0.657354
15	14	Afghanistan	AFG	2004	0.163377	0.702556	0.088158	4.851512	2.163044	4.126384	0.656132
16	15	Afghanistan	AFG	2005	0.163706	0.703078	0.088933	4.854684	2.247443	4.126908	0.655686
17	16	Afghanistan	AFG	2006	0.163977	0.703517	0.090054	4.856685	2.32102	4.128638	0.656297
18	17	Afghanistan	AFG	2007	0.164302	0.703998	0.091688	4.858861	2.405564	4.129728	0.657709
19	18	Afghanistan	AFG	2008	0.164639	0.70448	0.093589	4.860437	2.483862	4.129656	0.659501

Query executed successfully. | DESKTOP-KJB9QG1\SQLEXPRESS ... | DESKTOP-KJB9QG1\Anshu ... | master | 00:00:00 | 1000 rows

Query 2:

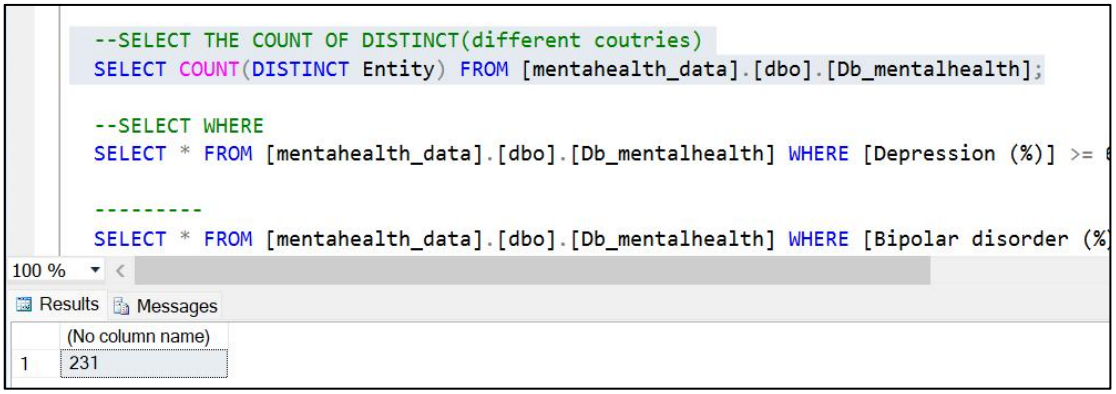
```
--select distinct columns
Select Entity,Code FROM [mentahealth_data].[dbo].[Db_mentalhealth];
```

Results Messages

	Entity	Code
1	Afghanistan	AFG
2	Afghanistan	AFG
3	Afghanistan	AFG
4	Afghanistan	AFG
5	Afghanistan	AFG
6	Afghanistan	AFG
7	Afghanistan	AFG
8	Afghanistan	AFG
9	Afghanistan	AFG
10	Afghanistan	AFG
11	Afghanistan	AFG
12	Afghanistan	AFG
13	Afghanistan	AFG
14	Afghanistan	AFG
15	Afghanistan	AFG

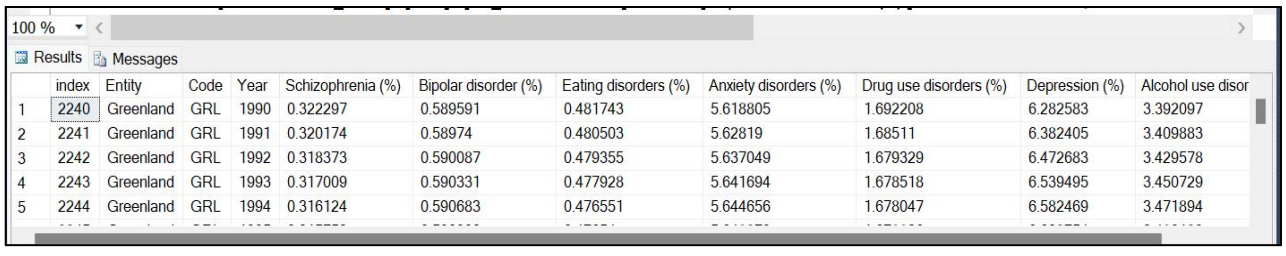
Query 3:

```
--SELECT THE COUNT OF DISTINCT(different coutries)
SELECT COUNT(DISTINCT Entity) FROM [mentahealth_data].[dbo].[Db_mentalhealth];
```



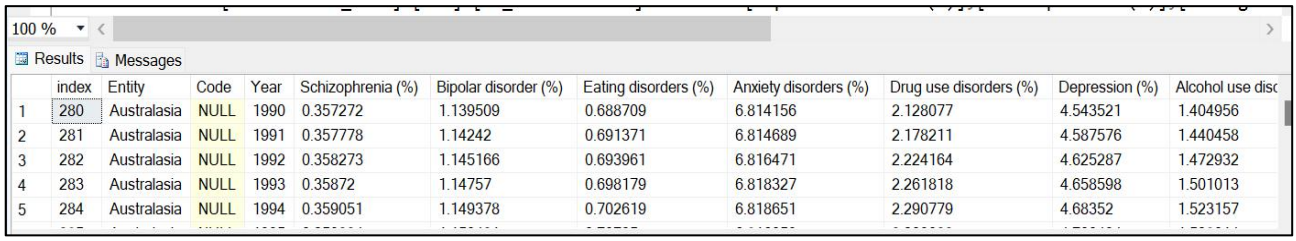
Query 4:

```
--SELECT WHERE
SELECT * FROM [mentahealth_data].[dbo].[Db_mentalhealth] WHERE [Depression (%)] >= 6.000000;
```



Query 5:

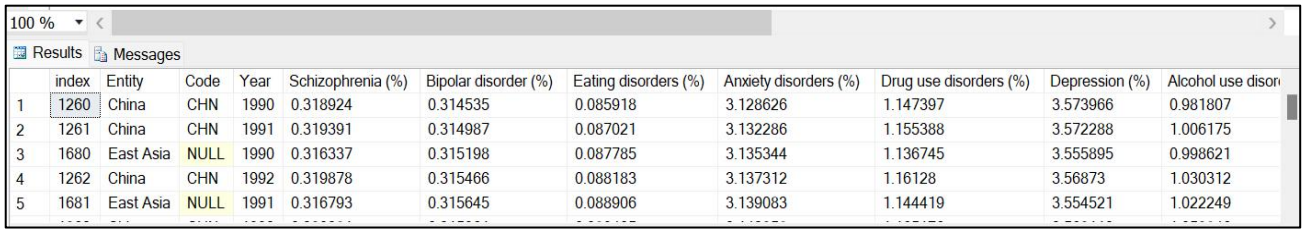
```
---------
SELECT * FROM [mentahealth_data].[dbo].[Db_mentalhealth] WHERE [Bipolar disorder (%)] BETWEEN 1
AND 2 ;
```



	index	Entity	Code	Year	Schizophrenia (%)	Bipolar disorder (%)	Eating disorders (%)	Anxiety disorders (%)	Drug use disorders (%)	Depression (%)	Alcohol use disc
1	280	Australasia	NULL	1990	0.357272	1.139509	0.688709	6.814156	2.128077	4.543521	1.404956
2	281	Australasia	NULL	1991	0.357778	1.14242	0.691371	6.814689	2.178211	4.587576	1.440458
3	282	Australasia	NULL	1992	0.358273	1.145166	0.693961	6.816471	2.224164	4.625287	1.472932
4	283	Australasia	NULL	1993	0.35872	1.14757	0.698179	6.818327	2.261818	4.658598	1.501013
5	284	Australasia	NULL	1994	0.359051	1.149378	0.702619	6.818651	2.290779	4.68352	1.523157

Query 6:

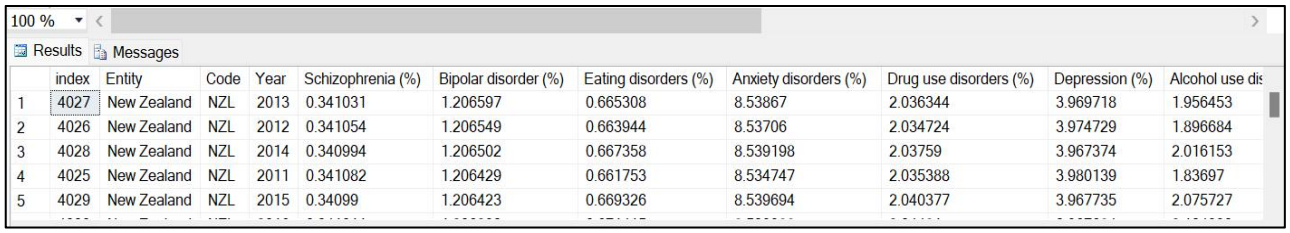
```
--Order BY(sort the result set)
SELECT * FROM [mentahealth_data].[dbo].[Db_mentalhealth] ORDER BY [Bipolar disorder
(%)],[Schizophrenia (%)],[Eating disorders (%)],[Drug use disorders (%)],[Anxiety disorders (%)];
```



	index	Entity	Code	Year	Schizophrenia (%)	Bipolar disorder (%)	Eating disorders (%)	Anxiety disorders (%)	Drug use disorders (%)	Depression (%)	Alcohol use disor
1	1260	China	CHN	1990	0.318924	0.314535	0.085918	3.128626	1.147397	3.573966	0.981807
2	1261	China	CHN	1991	0.319391	0.314987	0.087021	3.132286	1.155388	3.572288	1.006175
3	1680	East Asia	NULL	1990	0.316337	0.315198	0.087785	3.135344	1.136745	3.555895	0.998621
4	1262	China	CHN	1992	0.319878	0.315466	0.088183	3.137312	1.16128	3.56873	1.030312
5	1681	East Asia	NULL	1991	0.316793	0.315645	0.088906	3.139083	1.144419	3.554521	1.022249

Query 7;

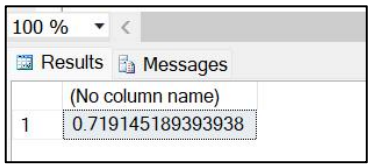
```
  --ORDER BY DESC
  SELECT * FROM [mentahealth_data].[dbo].[Db_mentalhealth] ORDER BY [Bipolar disorder (%)] DESC;
```



	index	Entity	Code	Year	Schizophrenia (%)	Bipolar disorder (%)	Eating disorders (%)	Anxiety disorders (%)	Drug use disorders (%)	Depression (%)	Alcohol use dis
1	4027	New Zealand	NZL	2013	0.341031	1.206597	0.665308	8.53867	2.036344	3.969718	1.956453
2	4026	New Zealand	NZL	2012	0.341054	1.206549	0.663944	8.53706	2.034724	3.974729	1.896684
3	4028	New Zealand	NZL	2014	0.340994	1.206502	0.667358	8.539198	2.03759	3.967374	2.016153
4	4025	New Zealand	NZL	2011	0.341082	1.206429	0.661753	8.534747	2.035388	3.980139	1.83697
5	4029	New Zealand	NZL	2015	0.34099	1.206423	0.669326	8.539694	2.040377	3.967735	2.075727

Query 8:

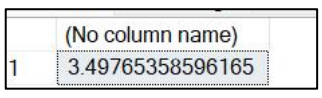
```
-----AVERAGE OF BIPOLAR DISORDER
  SELECT AVG([Bipolar disorder (%)]) FROM [mentahealth_data].[dbo].[Db_mentalhealth];
```



	(No column name)
1	0.719145189393938

Query 9:

```
  ----AVERAGE OF DEPRESSION
  SELECT AVG([Depression (%)]) FROM [mentahealth_data].[dbo].[Db_mentalhealth];
```



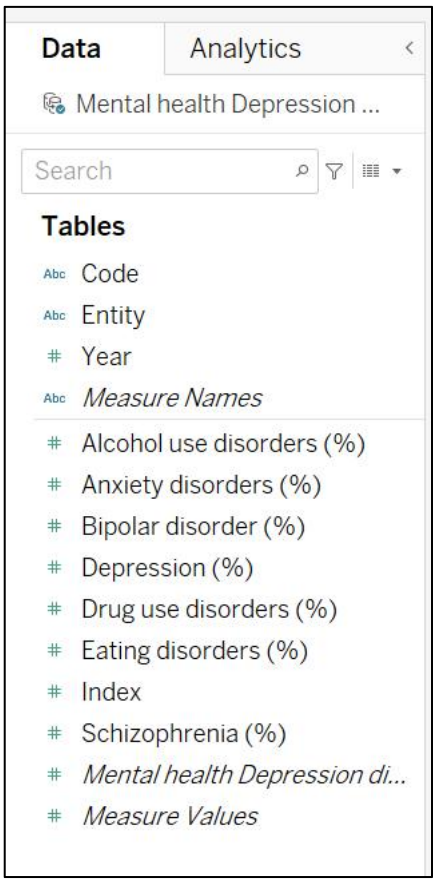
	(No column name)
1	3.49765358596165

Query 10:

```
--MIN AND MAX QUERY
  SELECT MIN([Drug use disorders (%)]),MAX([Anxiety disorders (%)]) FROM
[mentahealth_data].[dbo].[Db_mentalhealth];
```

	(No column name)	(No column name)
1	0.38365	8.96733

Activity 3: Connect DB with Tableau



Milestone 3: Data Preparation

Activity 1: Prepare the Data for Visualization

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, exploringthe 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 andcomplete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

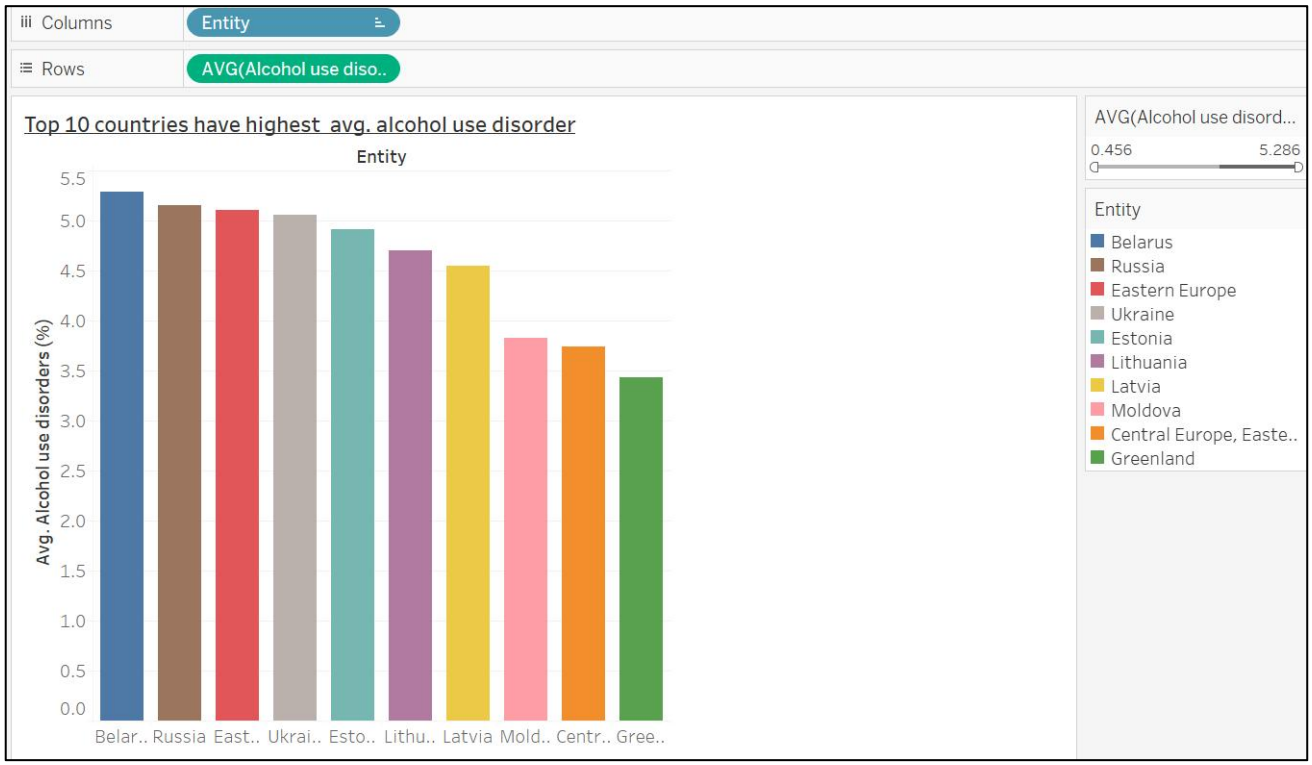
Milestone 4: Data Visualization

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 data sets 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.

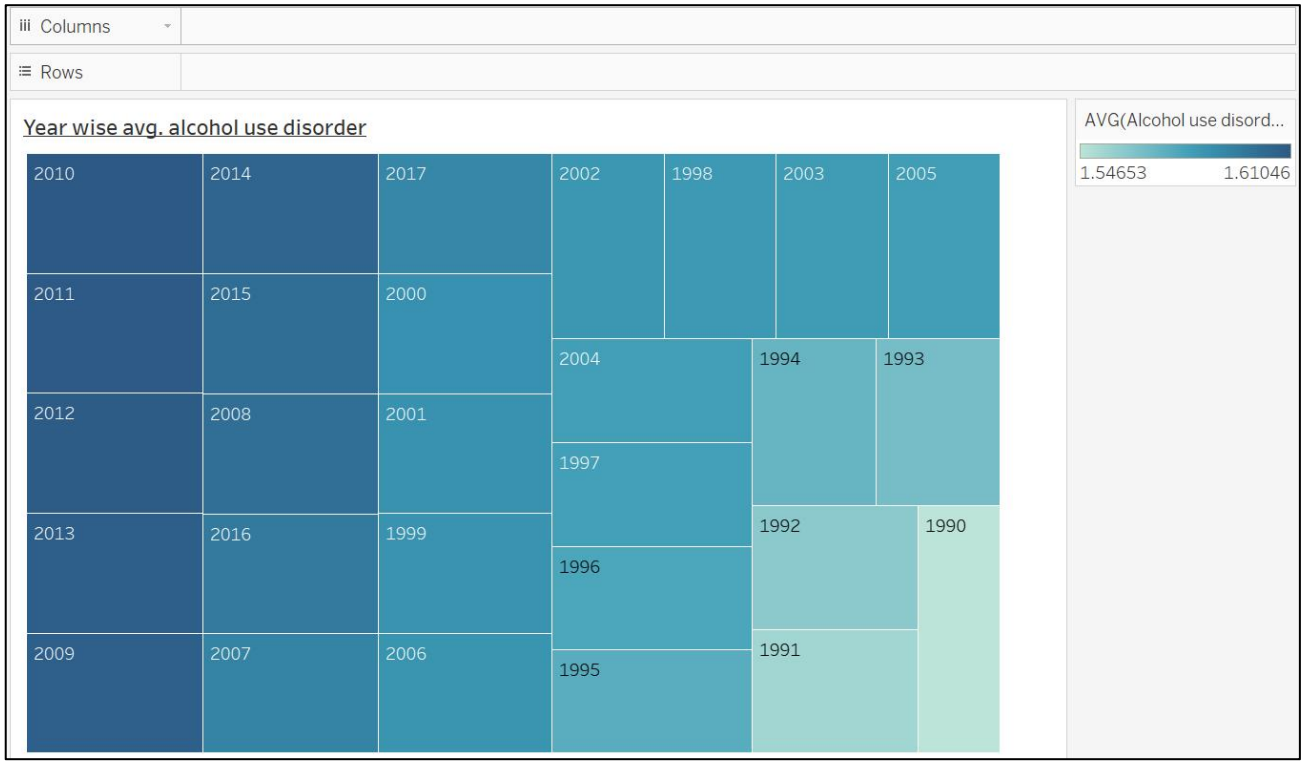
Activity 1: No of Unique Visualizations

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 thelifestyle habits complementing depression among countries. It also shows the depression among countries.

Activity 1.1 : Average Alcohol Use Disorder %

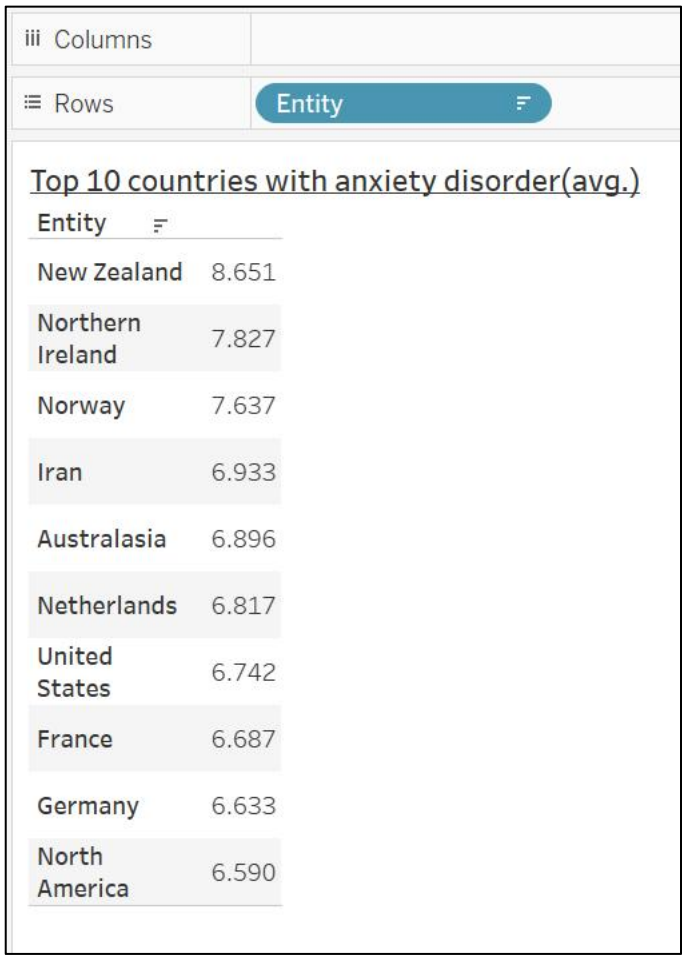


Activity 1.2: Average Drug Use Disorder %



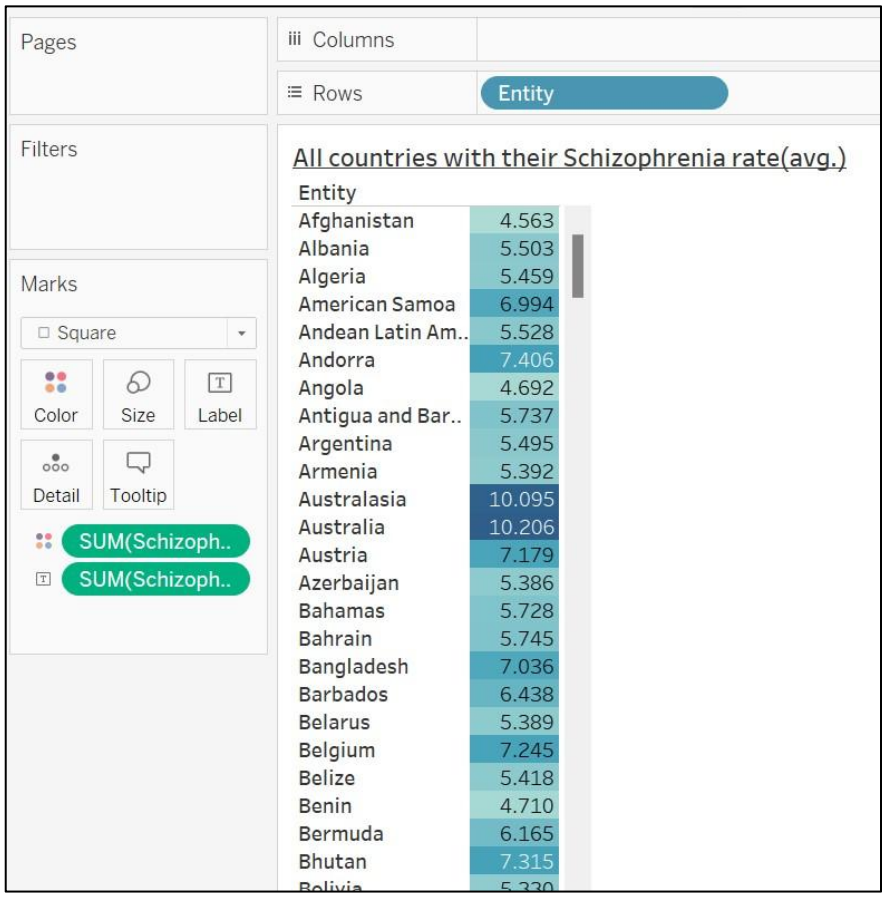
Activity 1.3: Average Eating Disorder %

Activity 1.4: Average Anxiety Disorder %

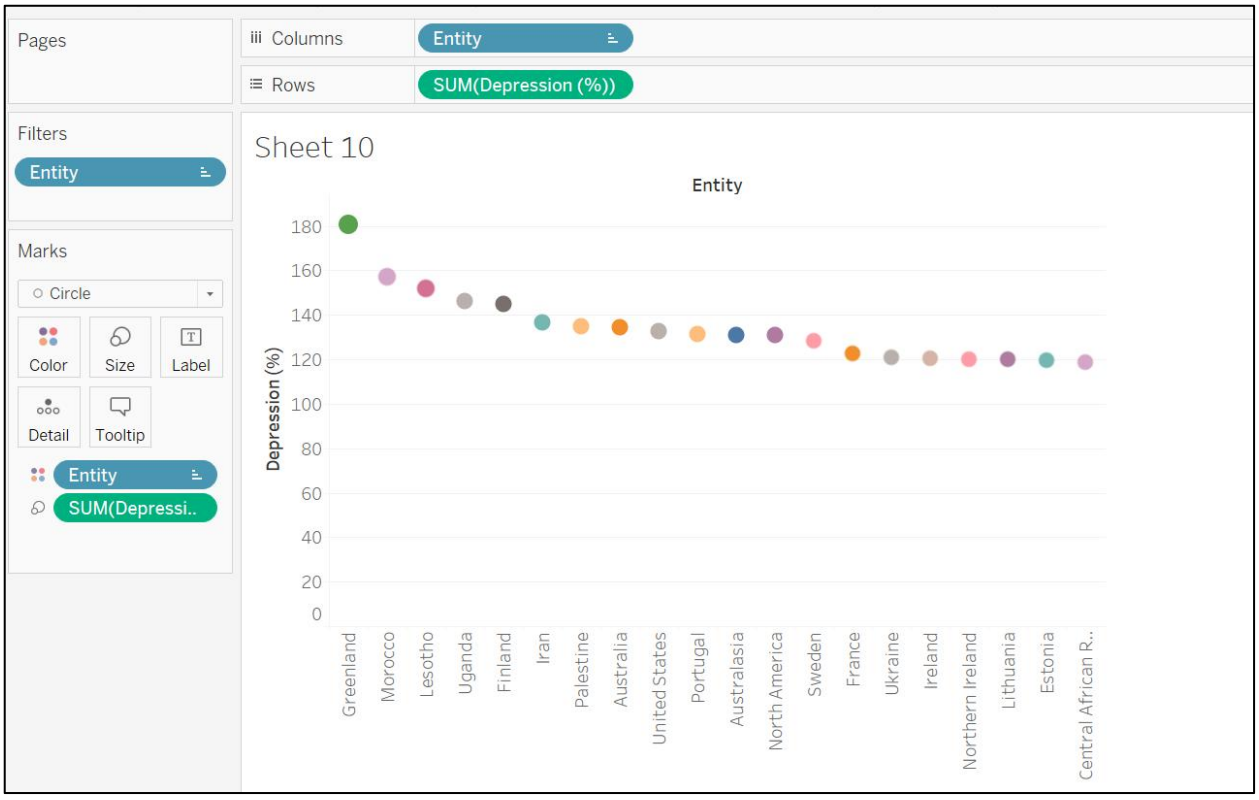


Activity 1.5: Average Bipolar Disorder %

Activity 1.6: Average Schizophrenia Disorder %

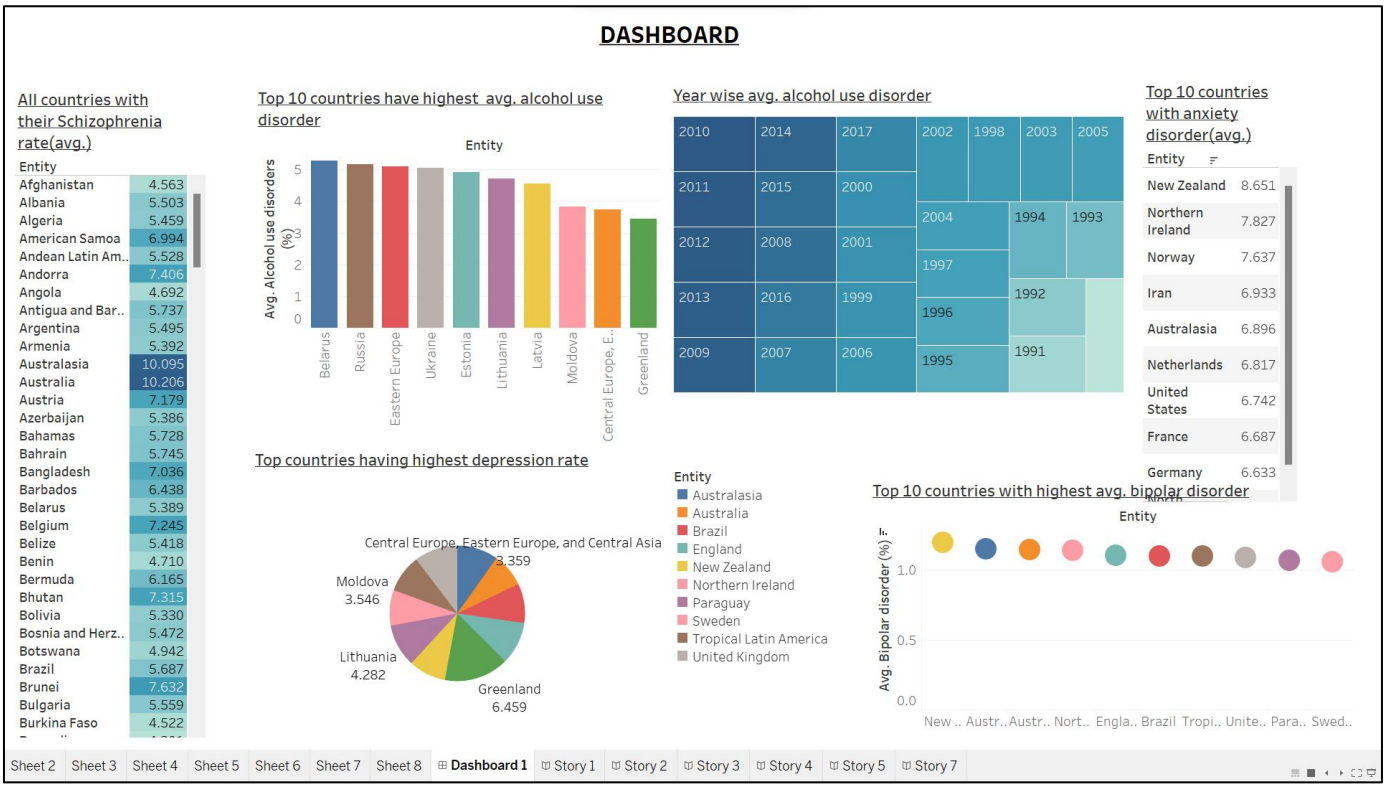


Activity 1.7: Sum of Depression%



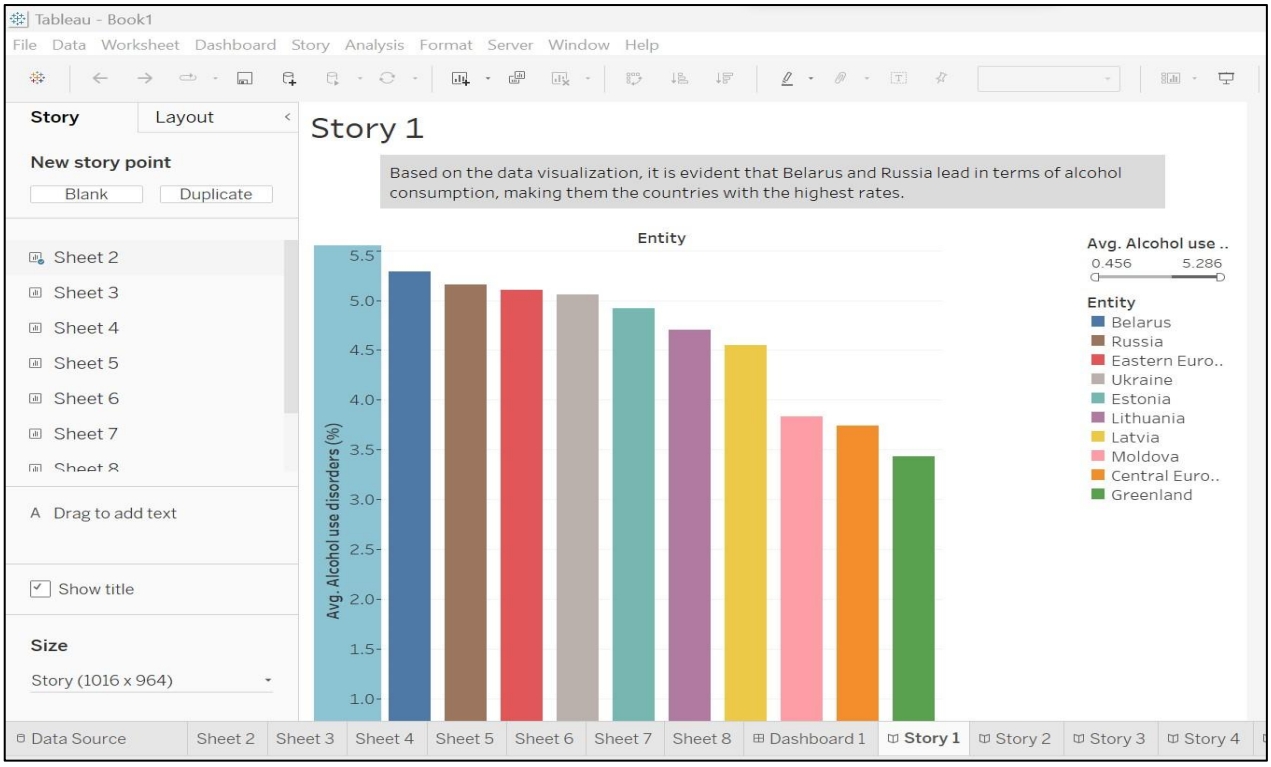
Milestone 5: Dashboard

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 beused 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.



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.



Story 2

This story demonstrates the notable increase in alcohol usage between 1990 and 2017.

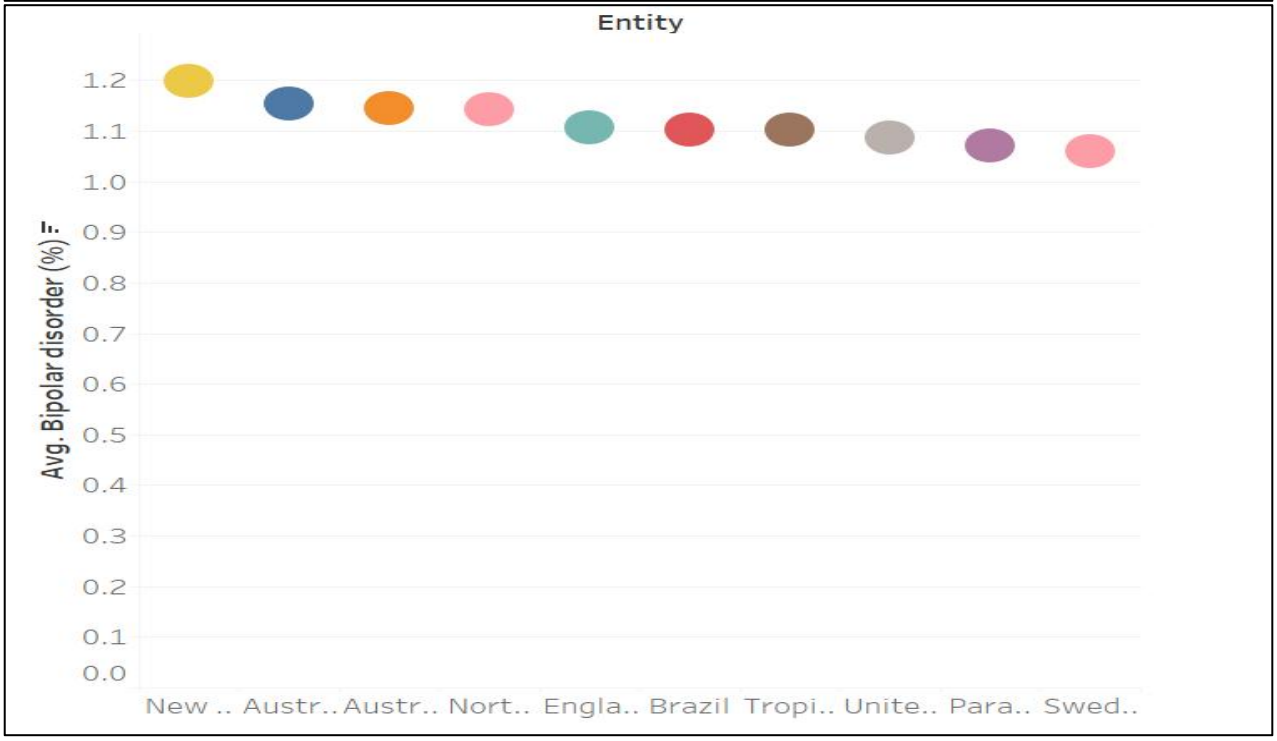
Story 3

This visualization illustrates the countries with the highest prevalence of anxiety disorders, with New Zealand ranking at the top.

Entity	
New Zealand	8.651
Northern Ireland	7.827
Norway	7.637
Iran	6.933
Australasia	6.896
Netherlands	6.817
United States	6.742
France	6.687
Germany	6.633
North America	6.590

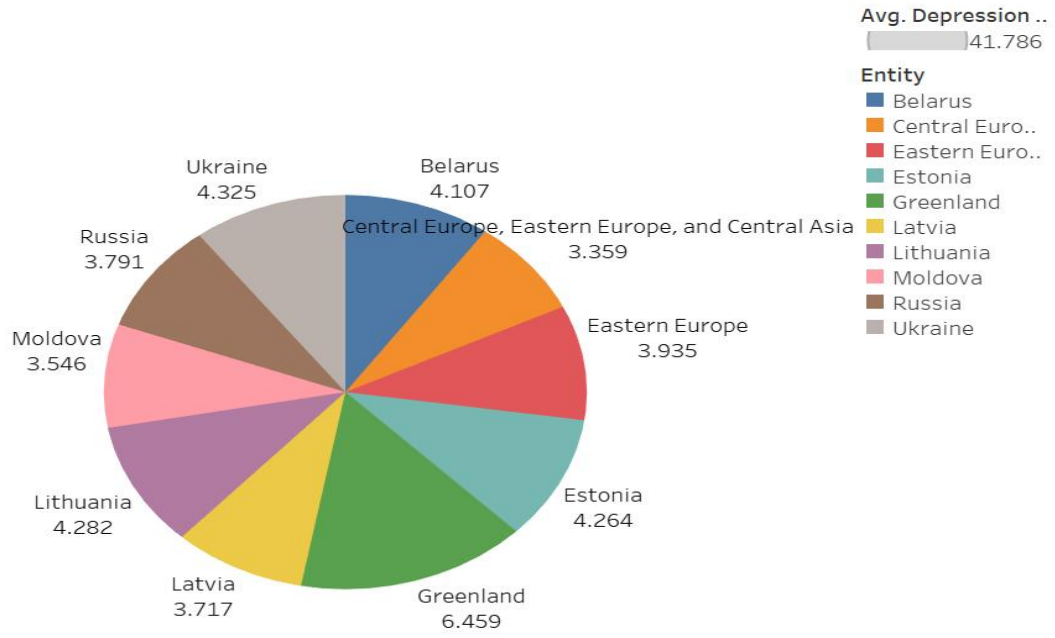
Story 4

The following list highlights the top 10 countries worldwide with the highest rates of bipolar disorder.



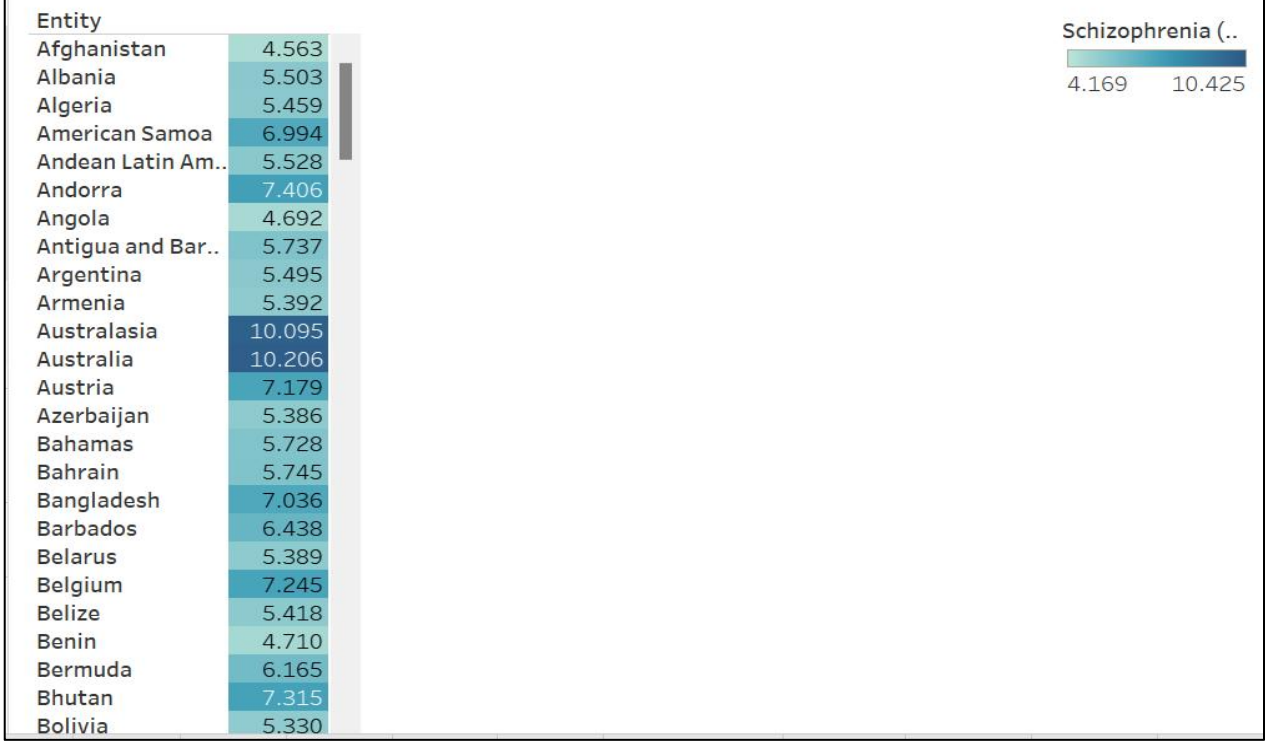
Story 5

The pie chart depicts the distribution of countries based on their rates of depression.



Story 6

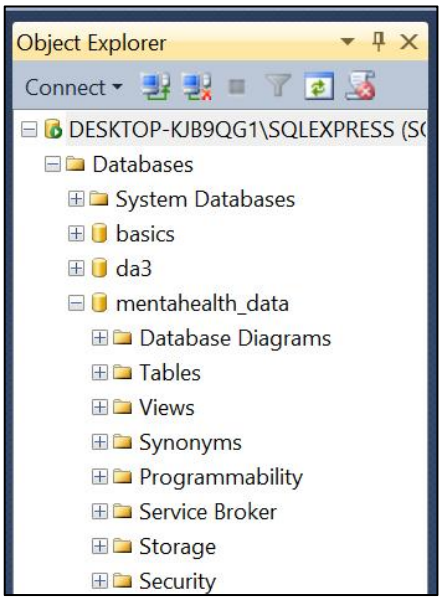
This visualization provides a comprehensive overview of schizophrenia rates in every country across the globe.



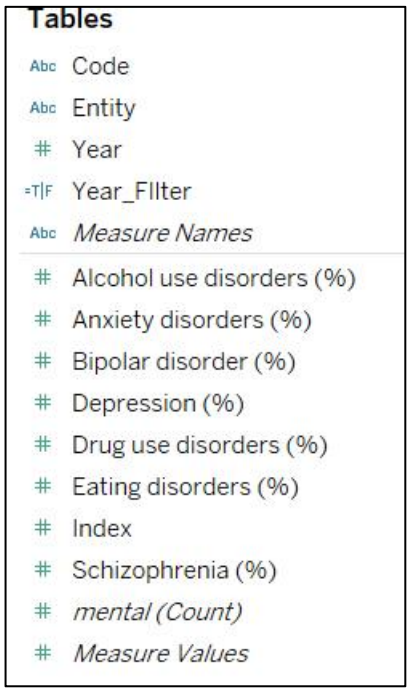
Entity	Schizophrenia (..)
Afghanistan	4.563
Albania	5.503
Algeria	5.459
American Samoa	6.994
Andean Latin Am..	5.528
Andorra	7.406
Angola	4.692
Antigua and Bar..	5.737
Argentina	5.495
Armenia	5.392
Australasia	10.095
Australia	10.206
Austria	7.179
Azerbaijan	5.386
Bahamas	5.728
Bahrain	5.745
Bangladesh	7.036
Barbados	6.438
Belarus	5.389
Belgium	7.245
Belize	5.418
Benin	4.710
Bermuda	6.165
Bhutan	7.315
Bolivia	5.330

Milestone 7: Performance Testing

Activity 1: Amount of Data Rendered to DB



Activity 2: No of Calculation Fields



Activity 3: No of Visualizations/ Graphs

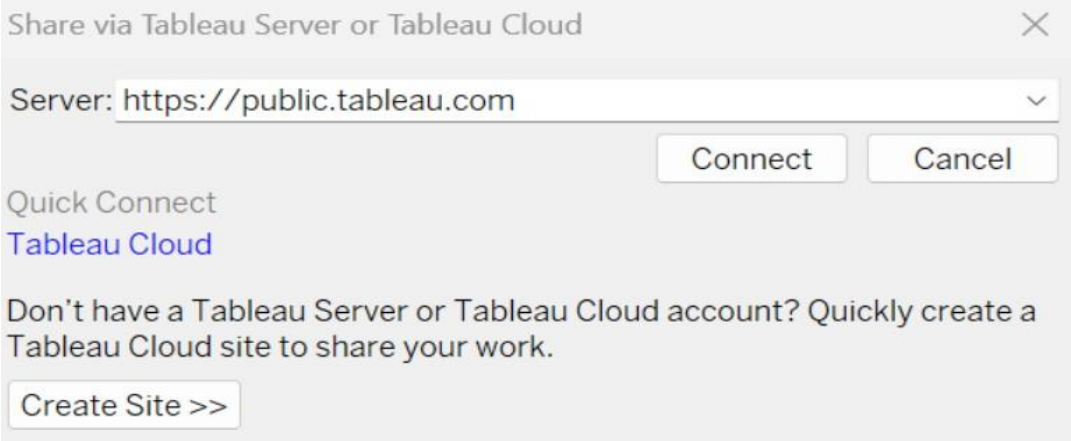
1. Average Alcohol Disorder %
2. Average Drug use Disorder %
3. Average Eating Disorder %
4. Average Anxiety Disorder %
5. Average Bipolar Disorder %
6. Average Schizophrenia Disorder %
7. Average and maximum Depression %
8. Sum of Depression %

Milestone 8: Web integration

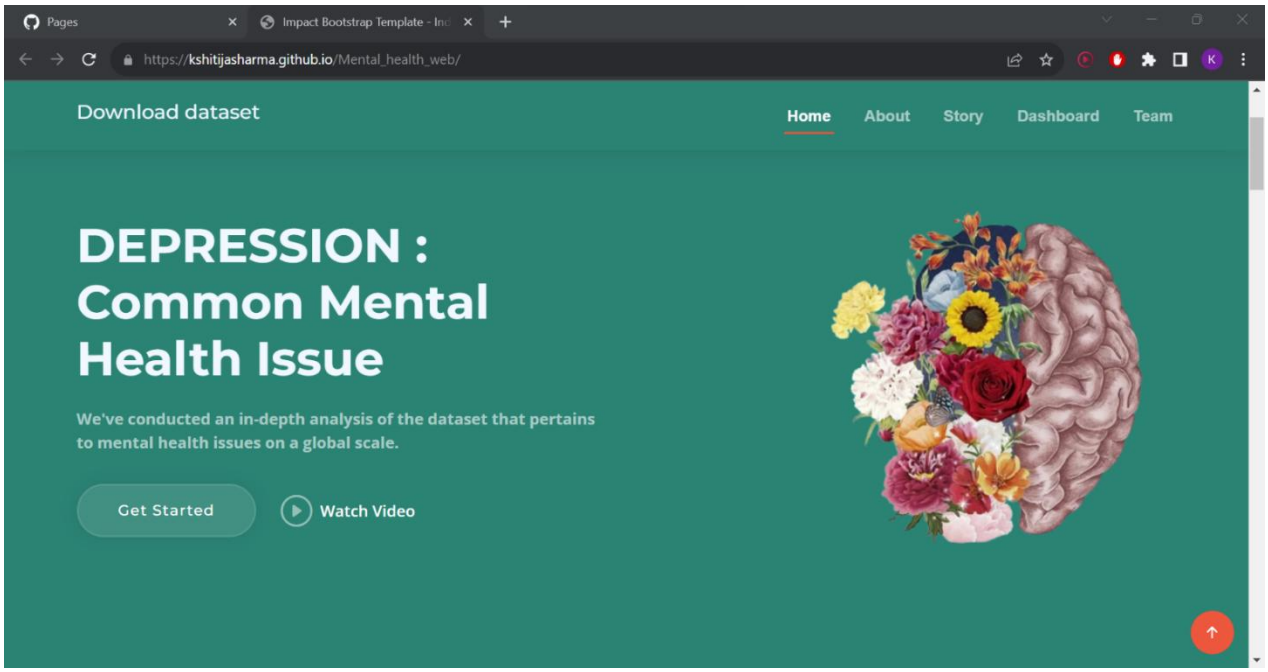
Link of the website: https://kshitijasharma.github.io/Mental_health_web/

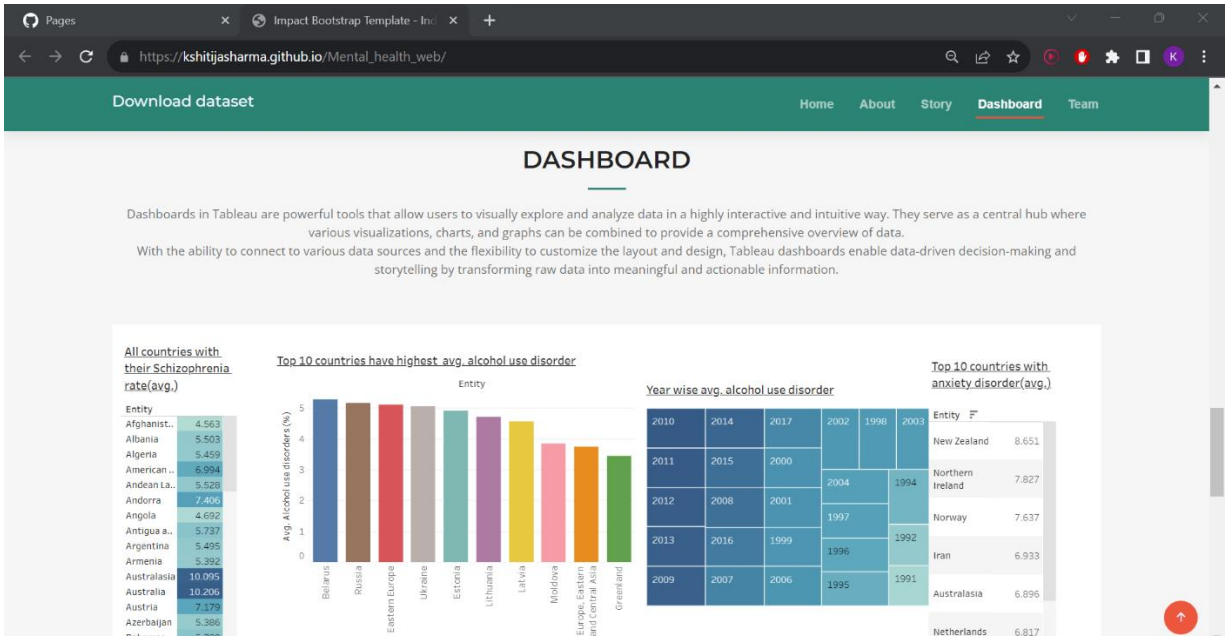
Publishing helps us to track and monitor key performance metrics and to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others.

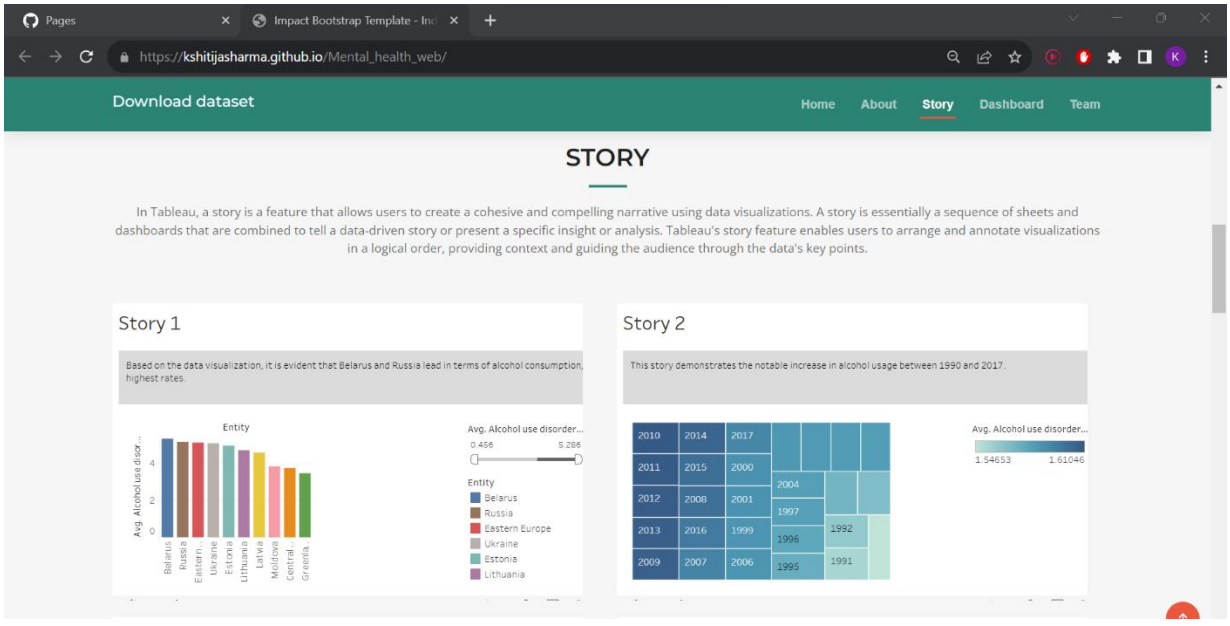
Publishing dashboard and reports to tableau public



Sample:







Our Team

Kshitija Sharma
kshitija.sharma2021@vitstudent.ac.in

Ayushi Jaiswal
ayushi.jaiswal2021@vitbhopal.ac.in

Aleshita
aleshita.21bcb7061@vitapstudent.ac.in

Rohit Pilakhwal
rohit.pilakhwal2021@vitbhopal.ac.in