SMARTBRIDGE EXTERNSHIP PROJECT FINAL REPORT

COURSE: DATA ANALYTICS

SUICIDES IN INDIA VISUALISATIONS USING TABLEAU

Milestone 1: Define Problem / Problem Understanding

The problem of suicides in India is a complex and mul -faceted issue that demands a en on. With high suicide rates, par cularly among young adults and farmers, it reflects the challenges individuals face in coping with social, economic, and mental health pressures. Factors such as gender dispari es, regional varia ons, and limited access to mental health services contribute to the problem. It is essen al to pay a en on to this issue to prevent loss of life, reduce s gma surrounding mental health, and promote early interven on and support systems. By raising awareness, implemen ng effec ve suicide preven on strategies, and fostering a suppor ve environment, we can address this cri cal problem and work towards improving mental wellbeing for all in India.

Activity 1: Specify the business problem

The business problem associated with analysing the dataset of suicides in India from 20012012 is to understand the underlying factors contribu ng to suicides and to iden fy poten al interven ons or strategies that can help reduce the incidence of suicide. By conduc ng a comprehensive analysis of the dataset and crea ng visualiza ons, dashboards, and stories using Tableau, the project aims to provide insights that can inform policy decisions, mental health ini a ves, and targeted interven ons to address the issue of suicide in India. The integra on with web technologies using Bootstrap allows for wider dissemina on of the findings and facilitates the accessibility of the informa on to stakeholders, policymakers, and the general public.

Activity 2: Business requirements

- Obtain a comprehensive and reliable dataset of suicides in India from 2001-2012, including relevant variables such as demographic informa on, geographic loca on, causes, and circumstances.
- U lize Tableau to create insigh ul and interac ve visualiza ons, charts, and graphs that represent the key trends, pa erns, and rela onships within the suicide dataset.
- Design intui ve and user-friendly dashboards that consolidate mul ple visualiza ons and provide an overview of the suicide data.
- Arrange visualiza ons, charts, and graphs in a logical sequence to tell a coherent and impac ul story about the factors influencing suicides in India.
- Integrate the Tableau visualiza ons, dashboards, and stories into a web-based pla orm using Bootstrap.

Activity 3: Social or Business Impact

Analysing the dataset can provide a deeper understanding of the factors contribu ng to suicides in India. The visualiza ons, dashboards, and stories created from the analysis can be shared with policymakers, healthcare professionals, mental health organiza ons, and the general public. This can contribute to increased awareness, advocacy, and public discourse around suicide preven on and mental health promo on. Informed decision making, Targeted Marke ng and support and Corporate Social Responsibility can help in raising awareness.

Milestone 2: Data Collection

Data collec on refers to the systema c process of gathering and obtaining informa on or data from various sources, such as surveys, interviews, observa ons, or exis ng datasets. It involves carefully selec ng, accessing, and documen ng relevant data to support research, analysis, or decision-making.

Activity 1: Downloading the dataset

Please use the link to download the dataset: Suicides in India | Kaggle https://www.kaggle.com/datasets/rajanand/suicides-in-india

Activity 2: Understand the data

Data contains all the informa on regarding the suicides that took place in India from the year 2001-2012. There are 7 columns in total that gives an insight of total number of suicides, Age group, Gender, State, Type(cause), Type code (general cause) and year in which the suicide happened of a par cular person. The dataset is compiled from mul ple sources, including the Na onal Crime Records Bureau (NCRB) and the Census of India. There are 237520 records in the downloaded dataset. The data is organized at the state level, allowing for analysis and comparisons across different states in India.

Activity 3: Loading the dataset in Tableau

Milestone 3: Data Preparation

Data prepara on is the process of transforming and organizing raw data into a clean, consistent, and analy cally useful format. It involves tasks such as data cleaning, removing duplicates, handling missing values, standardizing variables, restructuring data, and ensuring data quality for further analysis and visualiza ons.

Activity 1: Prepare the Data for Visualization

Data prepara on for visualiza on involves transforming and structuring raw data to make it suitable for visual representa on. This includes cleaning and filtering the data, aggrega ng or summarizing it as needed, forma ng variables for visualiza on, and ensuring data integrity to create accurate and meaningful visualiza ons that effec vely communicate insights and pa erns.

Milestone 4: Data Visualization

Data visualiza on is the graphical representa on of data and informa on using visual elements such as charts, graphs, and maps. It aims to present complex datasets in a clear, concise, and

visually appealing manner, enabling viewers to quickly grasp pa erns, trends, and rela onships within the data.

Activity 1: No. of Unique Visualizations:

Tableau offers a wide range of unique visualiza ons that can effec vely represent and analyse data. Some examples of unique visualiza ons that can be created using Tableau are Bar graphs, Circle views, Heat and Tree maps, Sca er plots, Symbol Maps, Highlight Tables, Pie charts and many more. We can further apply filters like context, measure and dimension filters that can help visualize data more easily.

Activity 1.1: Line chart - Analysing Suicide Patterns Over Time 2001-2012

It depicts the trend of suicide patterns over a specific timeframe

Activity 1.2: Symbol map - Suicide Rates by States and Union Territories

This map represents the suicide rates across the country i.e., the states and union territories in a geographical way of representation

Activity 1.3: Tree map based on type code i.e., type of suicides

This analysis provides an overview of the count of suicides for each type, allowing for an understanding of the prevalence of different suicide types within a given dataset or population

Activity 1.4: Highlight table: Gender-specific Suicide Statistics

This visualization provides insights into the prevalence of suicide among different genders. These statistics typically include data on suicide rates, completed suicides, suicide attempts, and other related factors, categorized by gender.

Activity 1.5: Bar chart - Total Suicides by Age Groups

This visualizes the number of suicides across different age groups. It presents a comparative view of the total suicides in each age group using vertical bars, allowing for easy identification of the age group with the highest or lowest suicide rates.

Activity 1.6: Pie chart - Total Suicides in Indian Union Territories

A pie chart representing the total suicides in Indian Union Territories provides a visual snapshot of the distribution of suicides across different territories. Each slice of the pie corresponds to a specific Union Territory, with the size of each slice indicating its proportionate contribution to the total number of suicides in India

Activity 1.7: Table - Suicide Rates by States and Union Territories in India

This visualization displays the Suicide Rates by States and Union Territories in India from 2002 to 2012

Activity 1.8: Heat map - Suicide rates based on type code under different age groups

This visualization involves examining the incidence of suicides categorized by both the type of suicide and the age group of individuals. This analysis provides insights into the specific types of suicides that are more prevalent within certain age demographics, enabling a deeper understanding of the relationship between age, suicide types, and potential risk factors

Activity 1.9: Circle View - Gender and Type-based Circles View of Suicides

A gender and type-based circles view of suicides visualizes the relationship between gender, suicide types, and their respective frequencies or proportions. This visualization typically represents the data using circles, where each circle represents a specific gender and type combination. The size of the circles may correspond to the frequency or proportion of suicides in each category, allowing for a quick visual comparison of the distribution of suicides across different gender and type combinations

Activity 1.10: Line chart - Analysing gender specific Suicide patterns over time: 20012012

This visualization examines the changes in suicide patterns among different genders from 2001 to 2012. By analysing this data over time, it aims to identify any trends, fluctuations, or disparities in suicide rates between males and females, providing insights into the dynamics of suicide behaviour.

Activity 1.11: Horizontal bar chart - suicide rates of male and female under different age groups Packed bubble chary based on specific type of suicide with the causes

This visualization illustrates the comparison of suicide rates between males and females across various age groups. It provides insights into the variations in suicide rates based on gender and age, enabling the identification of any significant disparities or trends.

Activity 1.12: Packed bubble chart -suicide rates based on specific type of suicide with the causes

This is a bubble chart representing the reasons and total number of suicides caused by specific reasons showcases the relationship between different reasons and the corresponding total number of suicides attributed to each reason. In this chart, each reason is represented by a bubble, and the size of the bubble corresponds to the total number of suicides associated with that particular reason. This visualization allows for easy comparison and identification of the reasons that contribute to a higher number of suicides, providing insights into the prevalent factors influencing suicidal behaviour.

Activity 1.13: Tree map - total number of suicide based on education level

This is a tree map representing the total number of suicides based on education level visually displays the distribution of suicide counts across different education levels. In this

visualization, each education level is represented by a rectangular tile, where the size of the tile corresponds to the total number of suicides in that particular education category.

Activity 1.14: analysing suicide methods using packed bubble chart showcasing Specific Types

The analysis of suicide methods using a packed bubble chart can showcase specific types of suicide methods and their respective frequencies or proportions. In this visualization, each specific method is represented by a bubble, and the size of the bubble corresponds to the frequency or proportion of suicides attributed to that method. The packed bubble chart allows for a visual comparison of the prevalence of different suicide methods, highlighting the relative significance of each method in terms of frequency or proportion within the dataset.

Activity 1.15: Packed bubble chart – suicide rates by specific type of suicide within the professional level

This analysis of suicide rates by professional level using a bubble chart can provide insights into the relationship between professional levels and the number of suicides, with the size of each bubble representing the corresponding number of suicides. In this visualization, each professional level is represented by a bubble, and the size of the bubble reflects the magnitude of suicides within that professional category. This chart allows for a quick comparison of suicide rates across different professional levels, highlighting any variations or disparities

Activity 1.16: Bubble Chart - Distribution of Suicide Types by Social Status

This is A bubble chart representing the distribution of suicide types by social status which visualizes the relationship between different types of suicides and their prevalence within various social status categories. In this chart, each social status category is represented by a bubble, and the size of the bubble corresponds to the proportion or frequency of suicides within that particular social status group.

Activity 1.17: Line chart - Temporal Analysis of Suicide Rates Across Age Groups: 2001-2012

This visualization examines the variations in suicide rates among different age groups over a specific period, from 2001 to 2012. This analysis aims to identify any temporal trends, fluctuations, or patterns in suicide rates within each age group, providing valuable insights into the dynamics of suicide behaviour across different age demographics during the specified timeframe.

Activity 1.18: Side-by-Side bar chart – suicide rates based on type of suicide in different union territories

A side-by-side chart representing the number of suicides based on the type of suicide in different Union Territories provides a comparative view of suicide patterns across territories. The chart consists of bars grouped by Union Territories, and within each group, there are sub-bars representing different types of suicides.

Activity 1.19: Table - suicide rates across the country under different age groups

This visualization displays total number of suicides across the country under different age groups in tabular format

Milestone 5: Dashboard

A dashboard in Tableau is a consolidated and interac ve display of mul ple visualiza ons, charts, and data summaries on a single screen. It allows users to monitor, analysee, and explore data from different perspec ves, providing a comprehensive overview of key insights and facilita ng data-driven decision-making.

Milestone 6: Story

A dashboard in Tableau is a consolidated and interac ve display of mul ple visualiza ons, charts, and data summaries on a single screen. It allows users to monitor, analyse, and explore data from different perspec ves, providing a comprehensive overview of key insights and facilita ng data-driven decision-making.

Activity 1: No. of Scenes of Story

The number of scenes in a storyboard for a data visualisa on analysis of suicides in India will depend on the complexity of the analysis and insights.

Milestone 7: Performance Testing

Performance tes ng in Tableau refers to the process of evalua ng and measuring the system's performance, including its responsiveness, scalability, and resource usage, under different loads and user scenarios, to ensure op mal performance and user experience.

Activity 1: Amount of Data Rendered to DB

The amount of data rendered to the database in Tableau depends on the specific query or visualiza on being executed. It can range from a subset of data to the en re dataset, depending on the filters, aggrega ons, and data source configura ons applied within the Tableau workbook.

Activity 2: Utilization of Data Filters

Data filters in Tableau allow users to selec vely control which data points or dimensions are included or excluded from the visualiza ons, enabling focused analysis, comparison, and explora on of specific subsets of data based on defined criteria or condi ons.

Activity 3: No. of Calculation Fields

Calcula on fields in Tableau are user-defined expressions or formulas that perform calcula ons on the exis ng data to generate new values or dimensions. They allow users to create custom calcula ons, aggrega ons, transforma ons, and derived measures based on the available data fields.

Activity 4: No. of Visualisations Graph

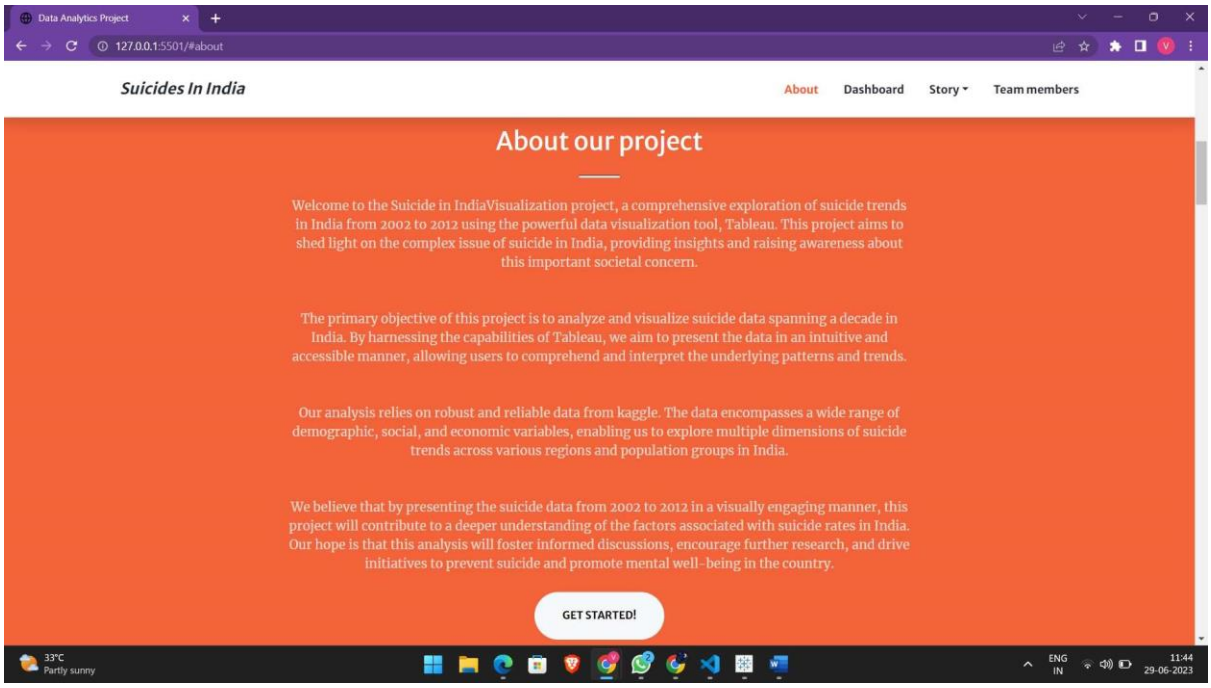
Visualiza on graphs in Tableau refer to the graphical representa ons, such as bar charts, line graphs, sca er plots, or pie charts, used to visually represent and analyze data in a meaningful and intui ve way, allowing for easier interpreta on and iden fica on of pa erns and trends.

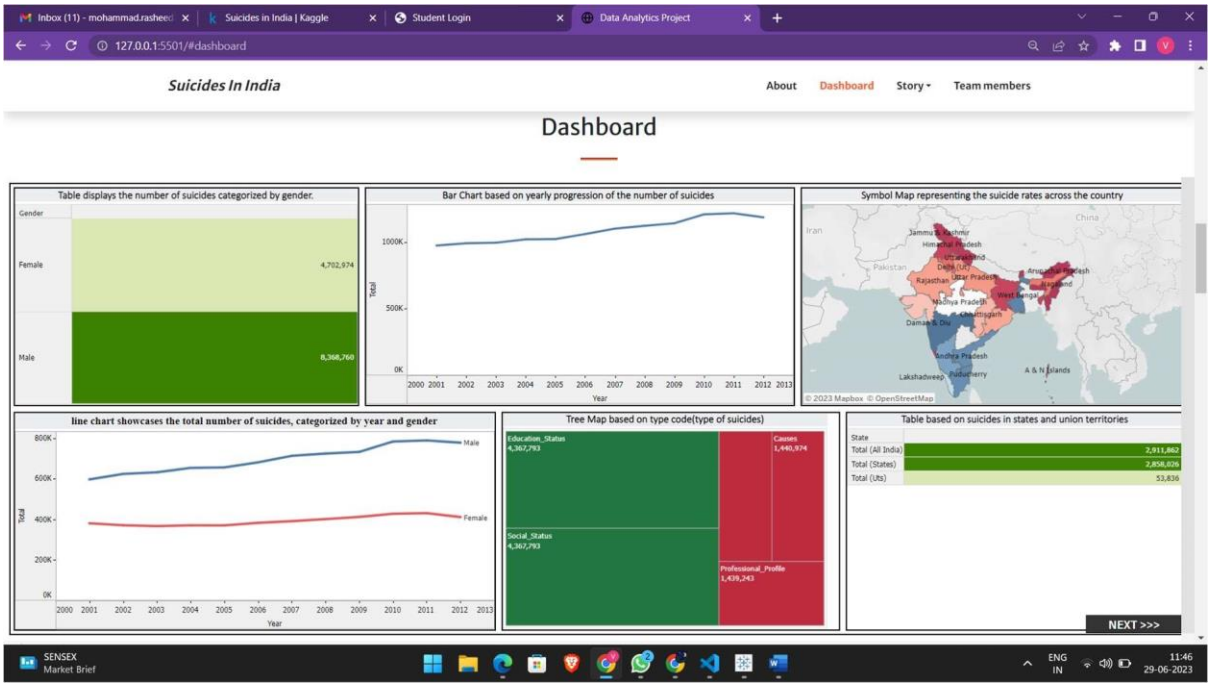
Milestone 8: Web Integration

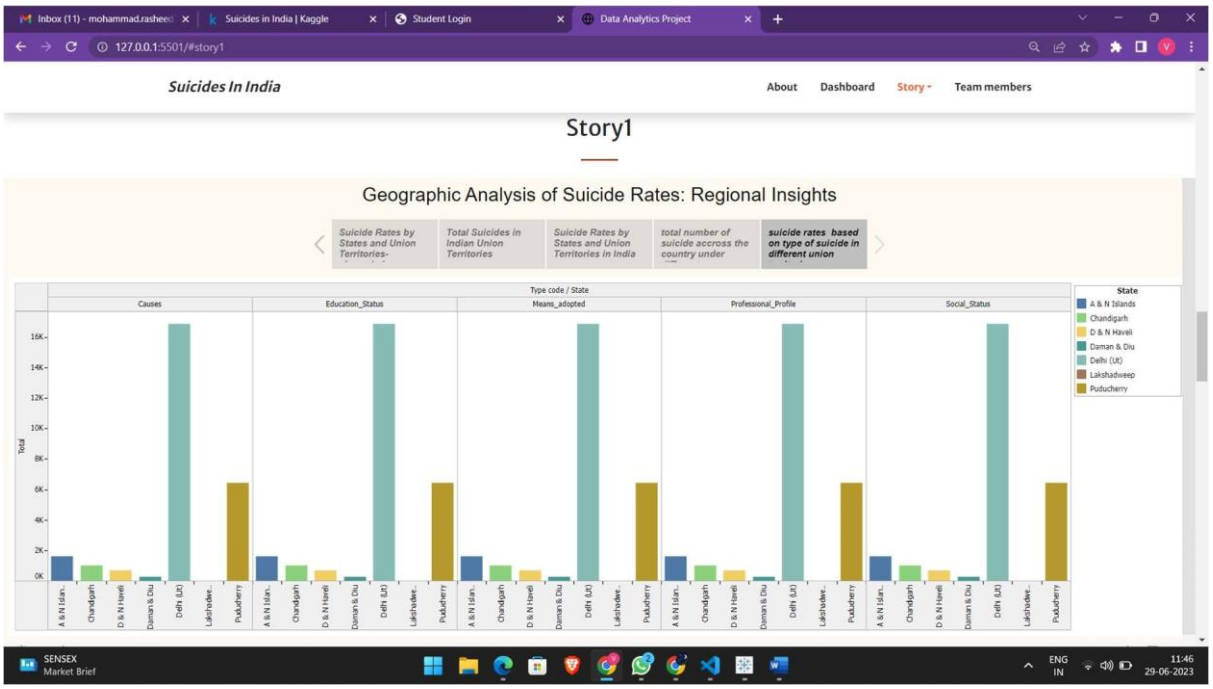
Web integra on refers to the process of incorpora ng and connec ng various web-based technologies, services, or applica ons into a unified system or website, allowing seamless data exchange, func onality, and user experience across different pla orms or online environments.

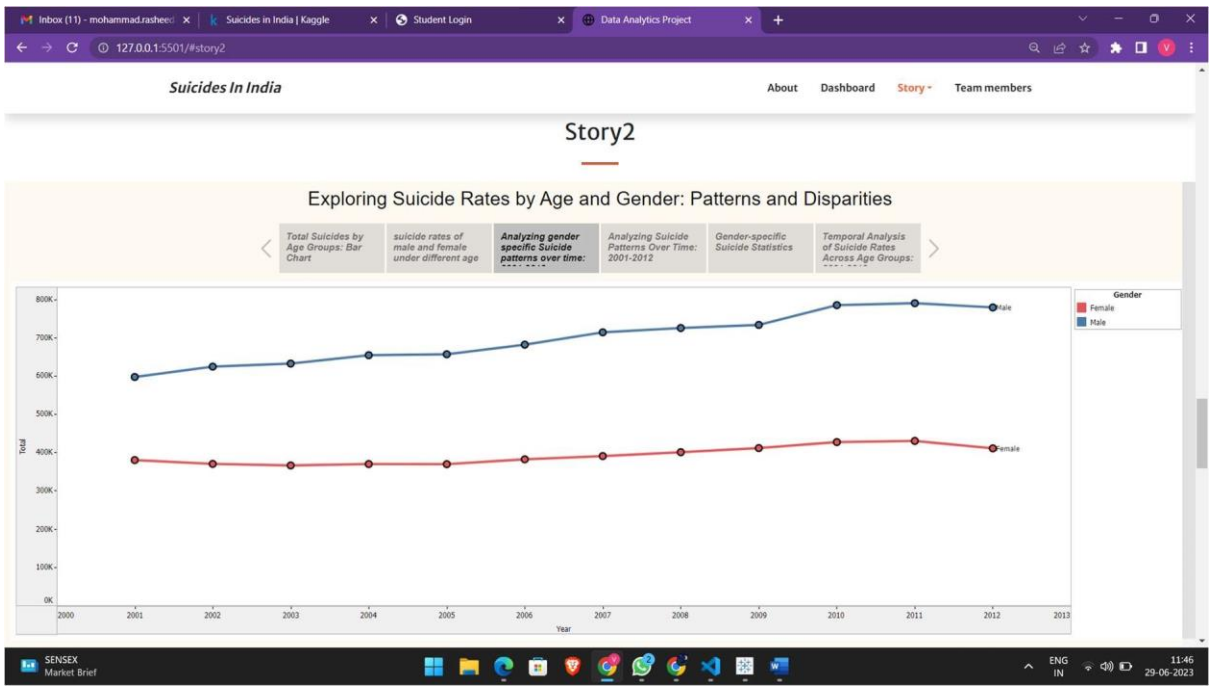
Activity 1: Embed Dashboard and Story with Web Bootstrap

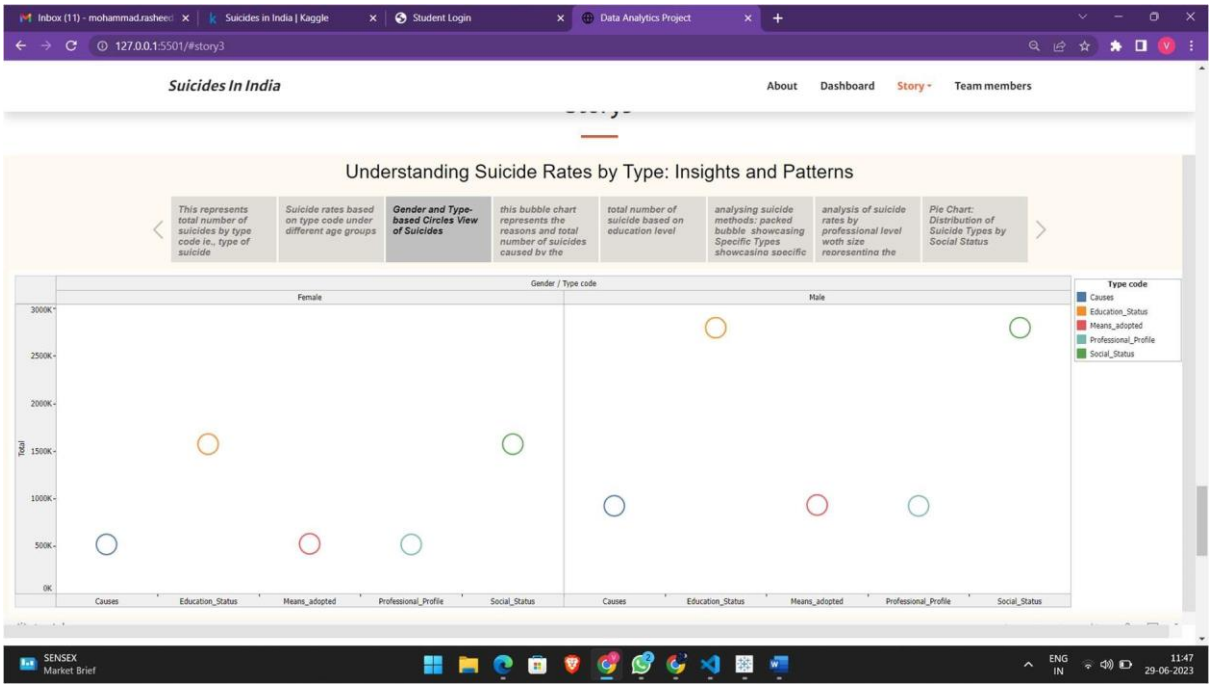
Screen shorts: -


Data Analytics Project
127.0.0.1:5501/#about
Suicides In India
About
Dashboard
Story
Team members
About our project
Welcome to the Suicide in IndiaVisualization project, a comprehensive exploration of suicide trends in India from 2002 to 2012 using the powerful data visualization tool, Tableau. This project aims to shed light on the complex issue of suicide in India, providing insights and raising awareness about this important societal concern.
The primary objective of this project is to analyze and visualize suicide data spanning a decade in India. By harnessing the capabilities of Tableau, we aim to present the data in an intuitive and accessible manner, allowing users to comprehend and interpret the underlying patterns and trends.
Our analysis relies on robust and reliable data from kaggle. The data encompasses a wide range of demographic, social, and economic variables, enabling us to explore multiple dimensions of suicide trends across various regions and population groups in India.
We believe that by presenting the suicide data from 2002 to 2012 in a visually engaging manner, this project will contribute to a deeper understanding of the factors associated with suicide rates in India. Our hope is that this analysis will foster informed discussions, encourage further research, and drive initiatives to prevent suicide and promote mental well-being in the country.
GET STARTED!
33°C
Partly sunny
ENG
IN
11:44
29-06-2023


Inbox (11) - mohammad.rasheed
Suicides in India | Kaggle
Student Login
Data Analytics Project
127.0.0.1:5501/#dashboard
Suicides In India
About
Dashboard
Story
Team members
Dashboard
Table displays the number of suicides categorized by gender.
Gender
Female
4,702,974
Male
8,368,760
Bar Chart based on yearly progression of the number of suicides
Total
1000K
500K
0K
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Year
Symbol Map representing the suicide rates across the country
China
Iran
Pakistan
Jammu & Kashmir
Himachal Pradesh
Uttarakhand
Delhi (UT)
Rajasthan
Uttar Pradesh
Arunachal Pradesh
Nagaland
West Bengal
Madhya Pradesh
Chhattisgarh
Dadra & Nagar Haveli and Daman & Diu
Andhra Pradesh
Lakshadweep
Puducherry
A & N Islands
© 2023 Mapbox © OpenStreetMap
line chart showcases the total number of suicides, categorized by year and gender
800K
600K
400K
200K
0K
Total
Male
Female
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Year
Tree Map based on type code(type of suicides)
Education_Status
4,367,793
Causes
1,440,974
Social_Status
4,367,793
Professional_Profile
1,439,243
Table based on suicides in states and union territories
State
Total (All India)
2,911,862
Total (States)
2,858,026
Total (Uts)
53,836
NEXT >>>
SENSEX
Market Brief
ENG
IN
11:46
29-06-2023


Inbox (11) - mohammad.rasheed
Suicides in India | Kaggle
Student Login
Data Analytics Project
127.0.0.1:5501/#story1
Suicides In India
About
Dashboard
Story
Team members
Story1
Geographic Analysis of Suicide Rates: Regional Insights
Suicide Rates by States and Union Territories-
Total Suicides in Indian Union Territories
Suicide Rates by States and Union Territories in India
total number of suicide accross the country under
suicide rates based on type of suicide in different union
Type code / State
Causes
Education_Status
Means_adopted
Professional_Profile
Social_Status
Total
State
A & N Islands
Chandigarh
D & N Haveli
Daman & Diu
Delhi (Ut)
Lakshadweep
Puducherry
SENSEX
Market Brief
ENG
IN
11:46
29-06-2023


Inbox (11) - mohammad.rasheed
Suicides in India | Kaggle
Student Login
Data Analytics Project
127.0.0.1:5501/#story2
Suicides In India
About
Dashboard
Story
Team members
Story2
Exploring Suicide Rates by Age and Gender: Patterns and Disparities
Total Suicides by Age Groups: Bar Chart
suicide rates of male and female under different age
Analyzing gender specific Suicide patterns over time:
Analyzing Suicide Patterns Over Time: 2001-2012
Gender-specific Suicide Statistics
Temporal Analysis of Suicide Rates Across Age Groups:
Gender
Female
Male
Total
Year
SENSEX
Market Brief
ENG
IN
11:46
29-06-2023


Inbox (11) - mohammad.rasheed
Suicides in India | Kaggle
Student Login
Data Analytics Project
127.0.0.1:5501/#story3
Suicides In India
About
Dashboard
Story
Team members
Understanding Suicide Rates by Type: Insights and Patterns
This represents total number of suicides by type code ie., type of suicide
Suicide rates based on type code under different age groups
Gender and Type-based Circles View of Suicides
this bubble chart represents the reasons and total number of suicides caused by the
total number of suicide based on education level
analysing suicide methods: packed bubble showcasing Specific Types showcasing specific
analysis of suicide rates by professional level woth size reoresentina the
Pie Chart: Distribution of Suicide Types by Social Status
Gender / Type code
Female
Male
Type code
Causes
Education_Status
Means_adopted
Professional_Profile
Social_Status
Total
3000K
2500K
2000K
1500K
1000K
500K
0K
Causes
Education_Status
Means_adopted
Professional_Profile
Social_Status
SENSEX
Market Brief
ENG
IN
11:47
29-06-2023