

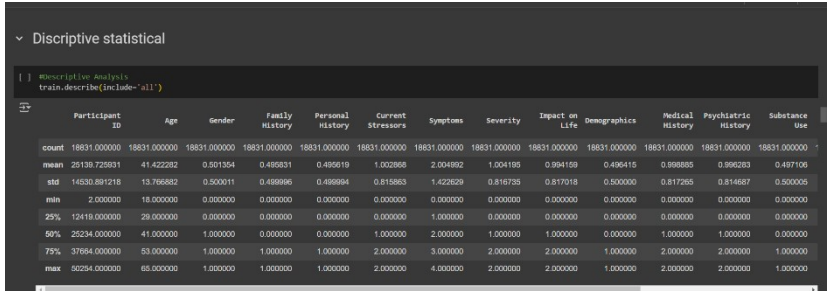
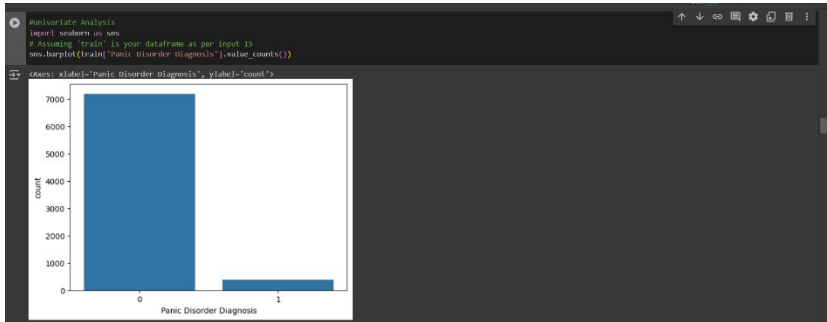
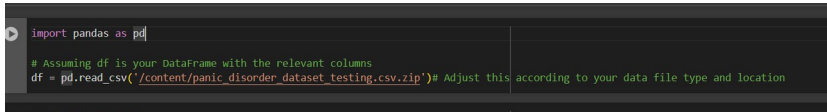
Data Collection and Preprocessing Phase

Date	15 July 2024
Team ID	<div style="background-color: black; width: 100px; height: 1.2em; margin-bottom: 2px;"></div> 739935
Project Title	Panic Disorder Detection
Maximum Marks	6 Marks

Data Exploration and Preprocessing Template

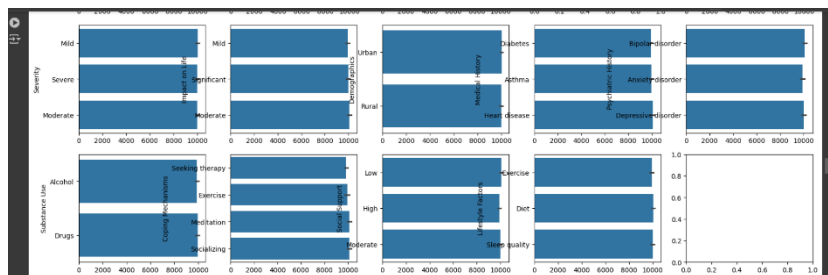
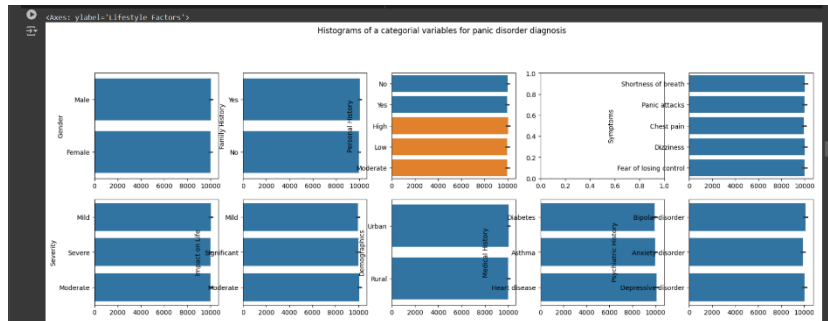
Identifies data sources, assesses quality issues like missing values and duplicates, and implements resolution plans to ensure accurate and reliable analysis.

Section	Description
Data Overview	<p>#Structure of the data: -</p> <pre>[] #Handling the missing values print('Train data shape:', train.shape) print('Test data shape:', test.shape)</pre> <pre>⇒ Train data shape: (20000, 17) Test data shape: (20000, 17)</pre> <p>#Descriptive Statistical: Descriptive analysis is to study the basic features of data with the statistical process. Here pandas have a worthy function called describe. With this describe function we can understand the unique, top and frequent values of categorical features. And we can find mean, std, min, max and percentile values of continuous features.</p>

	
Univariate Analysis	<p>Univariate Analysis: In simple words, univariate analysis is understanding the data with single feature. Here we have displayed two different graphs such as Histplot and countplot.</p> <p>Seaborn package provides a wonderful function histplot. With the help of histplot, we can find the distribution of the feature. To make multiple graphs in a single plot, we use subplot. First let's check if the data is balanced or not.</p> 
Bivariate Analysis	<p>#Bivariate Analysis:-</p> 

```
#Univariate Analysis
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

fig, axes = plt.subplots(4, 4, figsize=(20, 10))
fig.suptitle("Histograms of a categorical variables for panic disorder diagnosis")
sns.barplot(axes[0,0], 'Gender', ax=axes[0,0])
sns.barplot(axes[0,1], 'Family History', ax=axes[0,1])
sns.barplot(axes[0,2], 'Personal History', ax=axes[0,2])
sns.barplot(axes[0,3], 'Current Stressors', ax=axes[0,3])
sns.barplot(axes[1,0], 'Symptoms', ax=axes[1,0])
sns.barplot(axes[1,1], 'Severity', ax=axes[1,1])
sns.barplot(axes[1,2], 'Request on life', ax=axes[1,2])
sns.barplot(axes[1,3], 'Demographics', ax=axes[1,3])
sns.barplot(axes[2,0], 'Medical history', ax=axes[2,0])
sns.barplot(axes[2,1], 'Psychiatric history', ax=axes[2,1])
sns.barplot(axes[2,2], 'Substance Use', ax=axes[2,2])
sns.barplot(axes[2,3], 'Coping Mechanisms', ax=axes[2,3])
sns.barplot(axes[3,0], 'Social Support', ax=axes[3,0])
sns.barplot(axes[3,1], 'Lifestyle Factors', ax=axes[3,1])
```



From the plot we came to know,

- Both the genders are diagnosed equally with panic disorder.
- The current stressors of the subjects are mostly high with a sleep deprived lifestyle.
- Panic disorder plays an important role in one's life and is severely affected to most of the subjects.
- The symptoms of the panic disorder are mainly 5 out of which Panic attacks are mostly observed.
- The social support provided for these subjects is also low and the coping mechanisms include seeking therapy by large number of the affected.

Visual Analysis	<p>Visual analysis is the process of using visual representations, such as charts, plots, and graphs, to explore and understand data. It is a way to quickly identify patterns, trends, and outliers in the data, which can help to gain insights and make informed decisions.</p> <p>#In this no plots are available</p>																																																																																																																																																																																																																								
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Data Preprocessing Code Screenshots																																																																																																																																																																																																																									
Loading Data	<p>#Loading the data</p> <pre>[] #Load the dataset train = pd.read_csv("content/panic_disorder_dataset_training.csv") train.head()</pre> <table><thead><tr><th></th><th>Participant ID</th><th>Age</th><th>Gender</th><th>Family History</th><th>Personal History</th><th>Current Stressors</th><th>Symptoms</th><th>Severity</th><th>Impact on Life</th><th>Demographics</th><th>Medical History</th><th>Psychiatric History</th><th>Substance Use</th><th>Coping Mechanisms</th><th>Social Support</th><th>Lifestyle Factors</th><th>Panic Disorder Diagnosis</th></tr></thead><tbody><tr><td>0</td><td>1</td><td>38</td><td>Male</td><td>No</td><td>Yes</td><td>Moderate</td><td>Shortness of breath</td><td>Mid</td><td>Mid</td><td>Rural</td><td>Diabetes</td><td>Bipolar disorder</td><td>NaN</td><td>Socializing</td><td>High</td><td>Sleep quality</td><td>0.0</td></tr><tr><td>1</td><td>2</td><td>51</td><td>Male</td><td>No</td><td>No</td><td>High</td><td>Panic 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Handling Missing Data	<pre>#Handling the missing values print('Train data shape:', train.shape) print('Test data shape:', test.shape)</pre> <p>Train data shape: (20000, 17) Test data shape: (20000, 17)</p> <pre>train.info()</pre> <pre><class 'pandas.core.frame.DataFrame'> RangeIndex: 20000 entries, 0 to 19999 Data columns (total 17 columns): # Column Non-Null Count Dtype --- 0 Participant ID 20000 non-null int64 1 Age 20000 non-null int64 2 Gender 20000 non-null object 3 Family History 20000 non-null object 4 Personal History 20000 non-null object 5 Current Stressors 20000 non-null object 6 Symptoms 20000 non-null object 7 Severity 20000 non-null object 8 Impact on life 20000 non-null object 9 Demographics 20000 non-null object 10 Medical History 14999 non-null object 11 Psychiatric History 12011 non-null object 12 Substance Use 13383 non-null object 13 Coping Mechanisms 20000 non-null object 14 Social Support 20000 non-null object 15 Lifestyle factors 20000 non-null object 16 Panic disorder diagnosis 20000 non-null int64 dtypes: int64(5), object(14) memory usage: 2.6+ MB</pre>																																																																																																																																																																																																																								

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Data Transformation	-
Feature Engineering	-
Save Processed Data	-