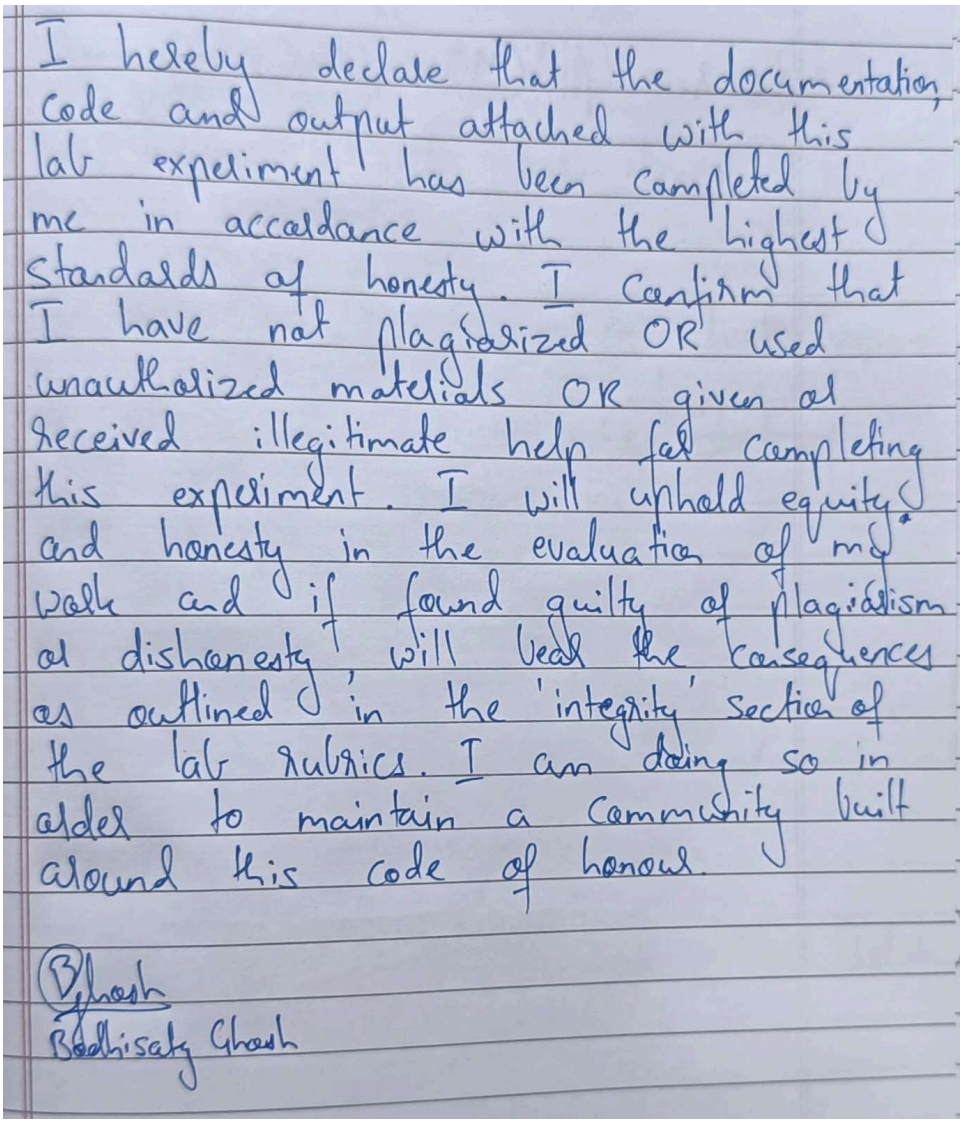
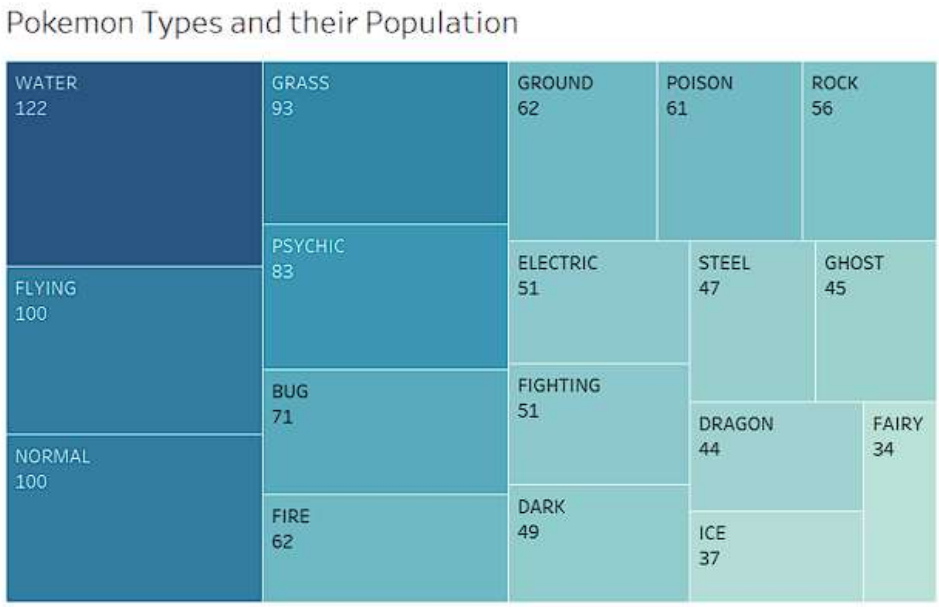
Name	**Bodhisatya Ghosh**
UID no.	**2021700026**

Experiment 6	
HONOUR PLEDGE	
PROBLEM STATEMENT :	• **EDA and visualization using Tableau** 1. Form a group of 3 people 2. Install Tableau and Tableau Public 3. Using a reference of Visual Vocabulary, analyze a case study

	(unique for every batch) 4. Review the assigned dataset 5. Create a Dashboard for assigned dataset(unique for every batch) on Tableau public using at least 3 visualization styles from the visual vocabulary 6. Tell a story
THEORY:	**EDA** ● Exploratory Data Analysis (EDA) serves as a fundamental stage in the data analysis process. It entails scrutinizing and visually representing data to comprehend its underlying structures, patterns, and correlations. ● EDA facilitates analysts in acquiring insights, detecting anomalies, and formulating hypotheses for further investigation. ● Tableau emerges as a potent tool for EDA and visualization, offering an intuitive interface and an extensive array of visualization choices. **Stages of EDA Using Tableau** 1. **Data Understanding**: Prior to commencing analysis, comprehending the dataset is imperative. This includes understanding its source, format, and characteristics such as size, variable types, and potential data quality issues. 2. **Data Cleaning and Preparation**: Data must be cleaned and prepared for analysis, involving tasks like handling missing values, addressing outliers, and transforming variables. While Tableau facilitates basic data cleaning operations, more intricate transformations may necessitate preprocessing with tools like Python or R. 3. **Connecting to Data**: In Tableau, various data sources such as Excel files, databases, and cloud services can be connected. Once connected, visual exploration of the data can commence. 4. **Exploratory Data Analysis**: Utilizing Tableau's drag-and-drop interface, visualizations can be created to explore different data facets. Common visualization types for EDA include scatter plots, histograms, bar charts, box plots, heatmaps, and time series plots. 5. **Interactive Analysis**: Tableau permits interactive data exploration by enabling data filtering, drilling down into specific subsets, and dynamically altering visualizations to uncover deeper insights. 6. **Pattern Discovery**: Analysts should seek patterns, trends, outliers, and correlations within the data. Tableau's interactive functionalities facilitate the identification of these patterns and enable deeper exploration into specific areas of interest. 7. **Hypothesis Generation**: Observations from visualizations aid in

	formulating hypotheses regarding underlying data patterns and relationships. These hypotheses can subsequently be tested using statistical methods or further analysis. 8. **Communication of Insights**: Tableau can be leveraged to craft interactive dashboards and storyboards for effectively conveying findings to stakeholders. Its publishing and sharing features facilitate the dissemination of visualizations and insights to a broader audience. 9. **Iteration**: EDA typically involves an iterative process. As insights are gained and hypotheses refined, revisiting earlier steps may be necessary to further clean and prepare the data or generate new visualizations for exploring different data aspects.
RESULT:	**Chart 1: Demonstrating Ranking and Distribution**  **Chart 2: Demonstrating Ranking**

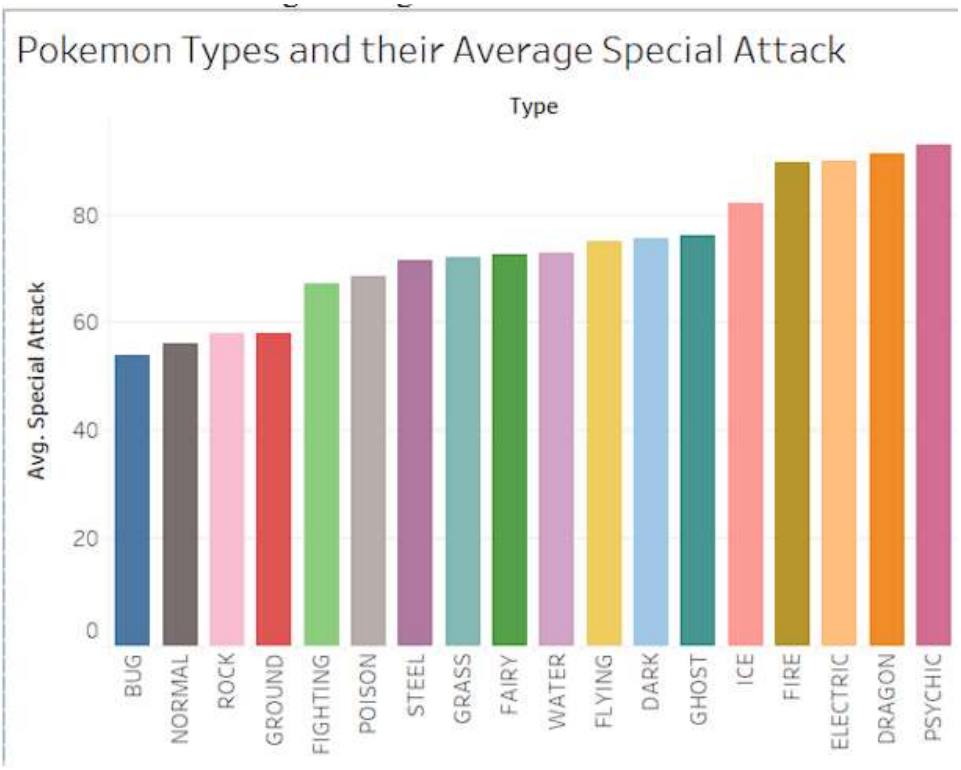


Chart 3: Demonstrating Magnitude

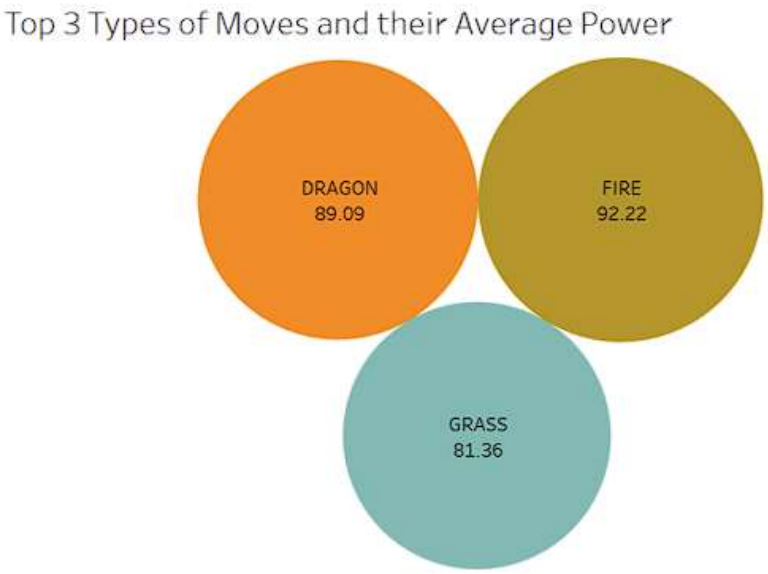


Chart 4: Demonstrating Part-to-Whole

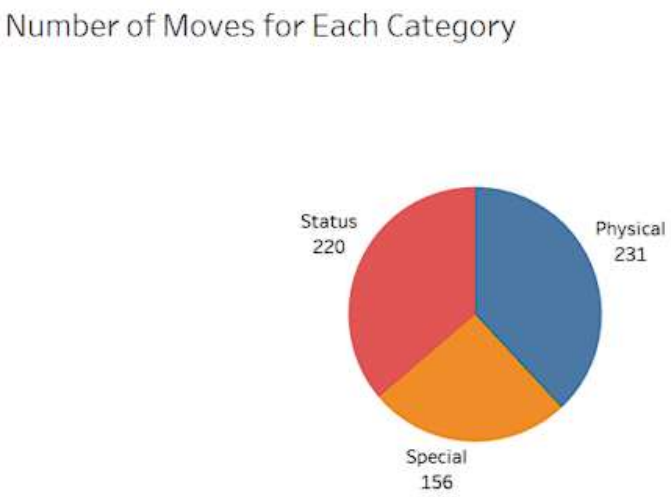
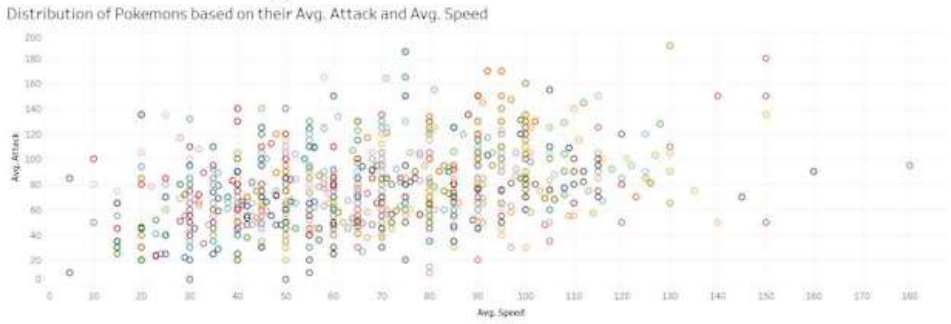


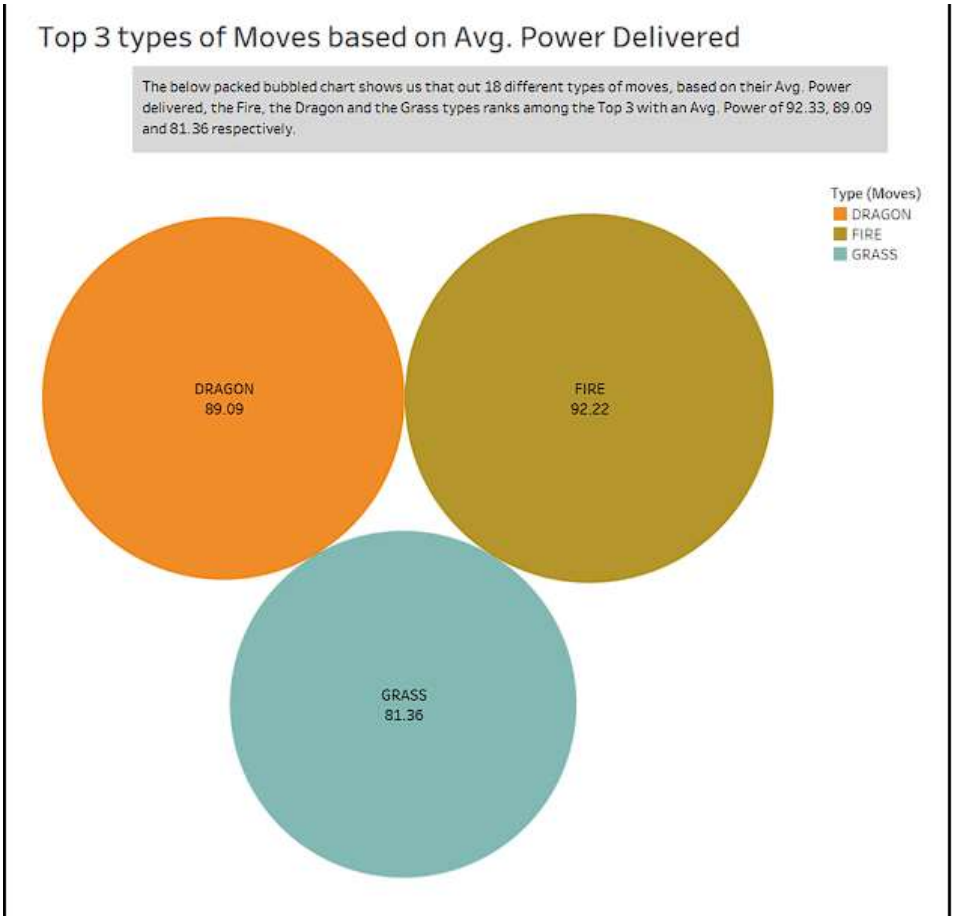
Chart 5: Demonstrating Distribution



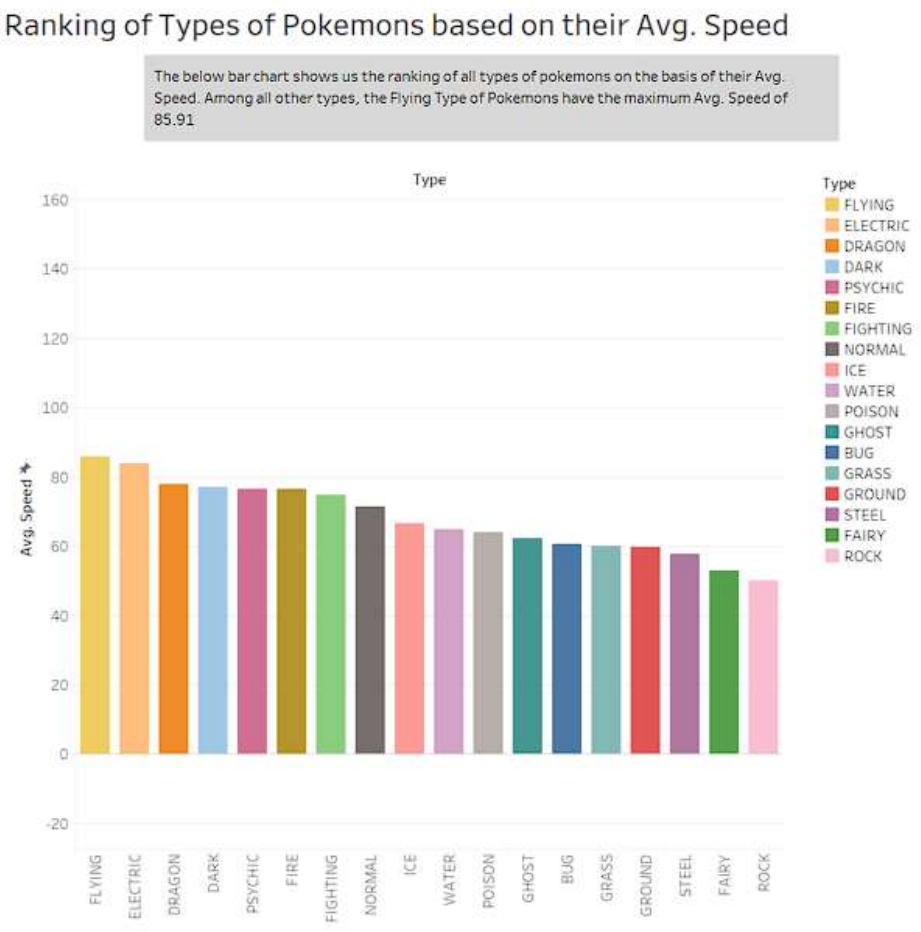
Final Dashboard:


Dashboard
Pokemon Types and their Population
WATER 122
GRASS 93
GROUND 62
POISON 61
ROCK 56
FLYING 100
PSYCHIC 83
ELECTRIC 51
STEEL 47
GHOST 45
NORMAL 100
BUG 71
FIGHTING 51
DRAGON 44
FAIRY 34
FIRE 62
DARK 49
ICE 37
Pokemon Types and their Average Special Attack
Type
Avg. Special Attack
Count of Pokem..
34
122
Cat..
Physical
Special
Status
Count of Moves
607
Avg. Special Att..
To Null
Type (Moves)
DRAGON
FIRE
GRASS
BUG
NORMAL
ROCK
GROUND
FIGHTING
POISON
STEEL
GRASS
FAIRY
WATER
FLYING
DARK
GHOST
ICE
FIRE
ELECTRIC
DRAGON
PSYCHIC
Top 3 Types of Moves and their Average Power
DRAGON
89.09
FIRE
92.22
GRASS
81.36
Number of Moves for Each Category
Status
220
Physical
231
Special
156
Distribution of Pokemons based on their Avg. Attack and Avg. Speed
Avg. Attack
Avg. Speed

Story 1:


Top 3 types of Moves based on Avg. Power Delivered
The below packed bubbled chart shows us that out 18 different types of moves, based on their Avg. Power delivered, the Fire, the Dragon and the Grass types ranks among the Top 3 with an Avg. Power of 92.33, 89.09 and 81.36 respectively.
Type (Moves)
DRAGON
FIRE
GRASS
DRAGON
89.09
FIRE
92.22
GRASS
81.36

Story 2:



References:

https://www.simplilearn.com/tutorials/tableau-tutorial/what-is-tableau
https://www.tableau.com/solutions/gallery/visual-vocabulary
https://www.geeksforgeeks.org/tableau-tutorial/

CONCLUSION:

Through this experiment, we gained insights into Tableau and its utilization. We acquired knowledge on importing datasets into a notebook and integrating multiple sheets from a dataset by employing common keys for joining. Our understanding extended to analyzing diverse attributes and their interrelations, thereby enhancing our proficiency in data visualization and extracting insights from datasets.