WEBSITE TRAFFIC ANALYSIS

PHASE 4 : DEVELOPMENT PART 2

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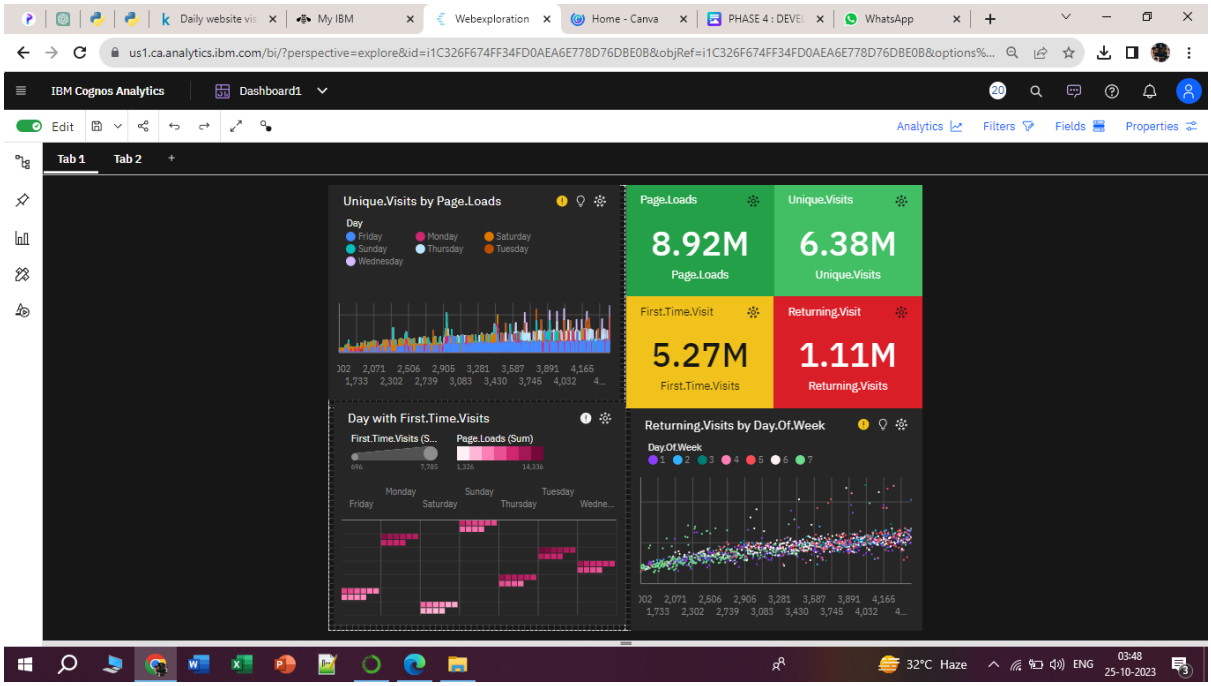
Introduction

Website traffic analysis is the process of collecting, examining, and interpreting data related to the visitors and interactions on a website. It provides invaluable insights into user behavior, preferences, and trends, helping organizations make informed decisions, optimize their online presence, and enhance user experiences.

Abstract

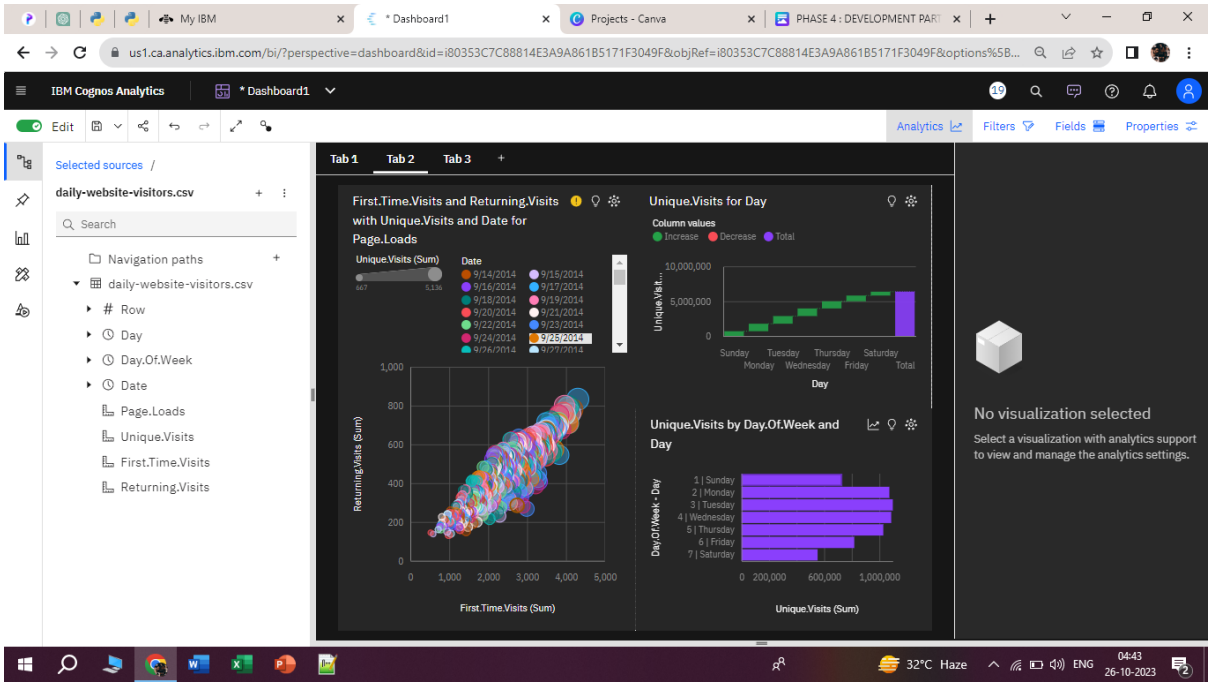
This project aims to analyze website traffic data for insights into user behavior, popular pages, and traffic sources. It involves data collection, visualization using IBM Cognos, and Python for advanced analysis. The goal is to optimize user experiences and enhance website performance.

Data Exploration



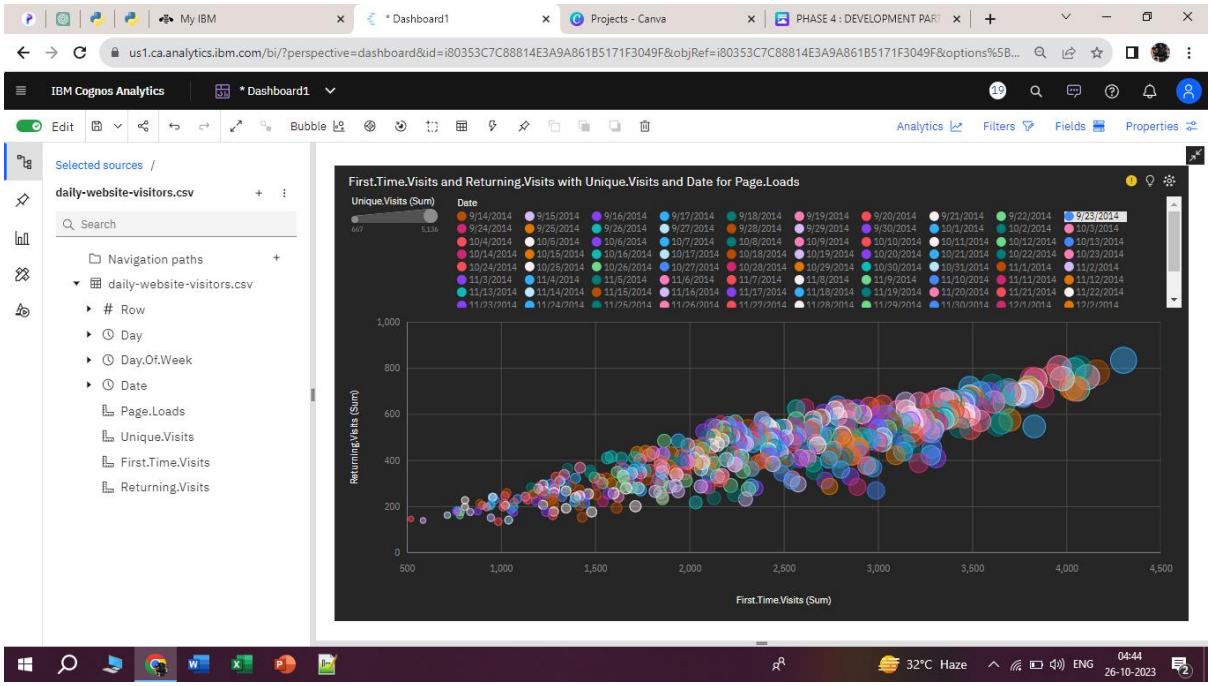
On Phase 2 Development part 1, made only the Data set ‘Analysis visualization’ of overall Page loads, Unique visits and more.

From the Continuation of Phase 3 development part 1 improved the analysis in a advanced analysis to improve the prediction and to show the visualization.

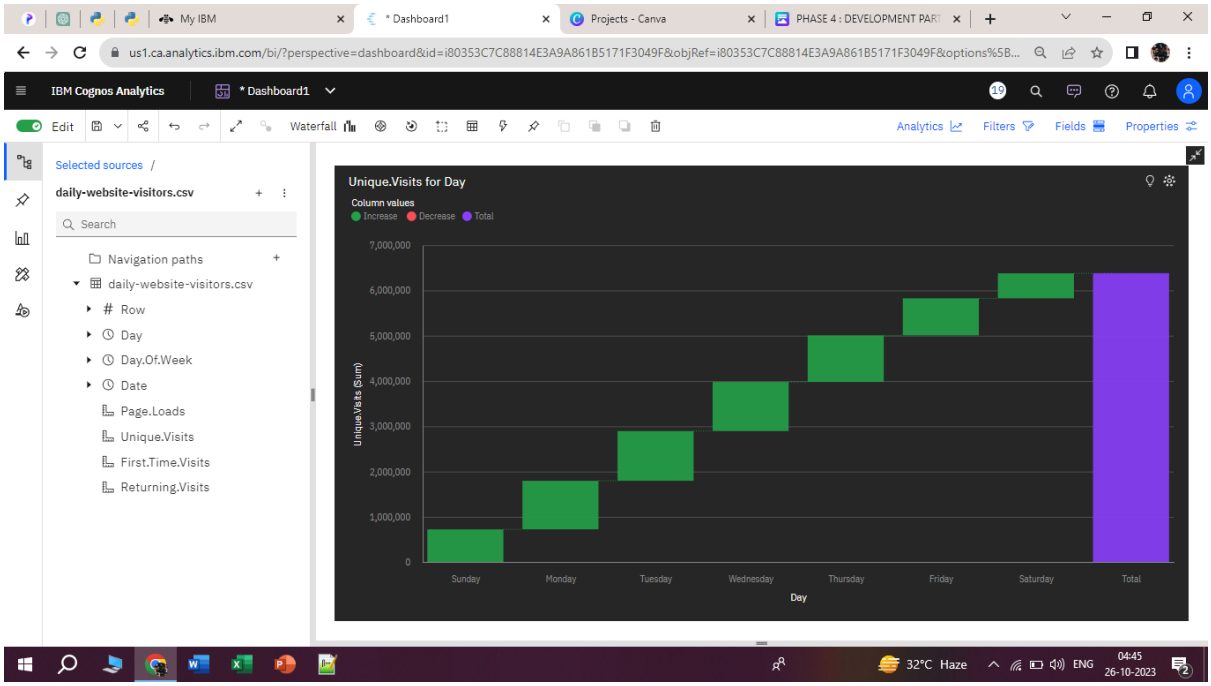


Insights :

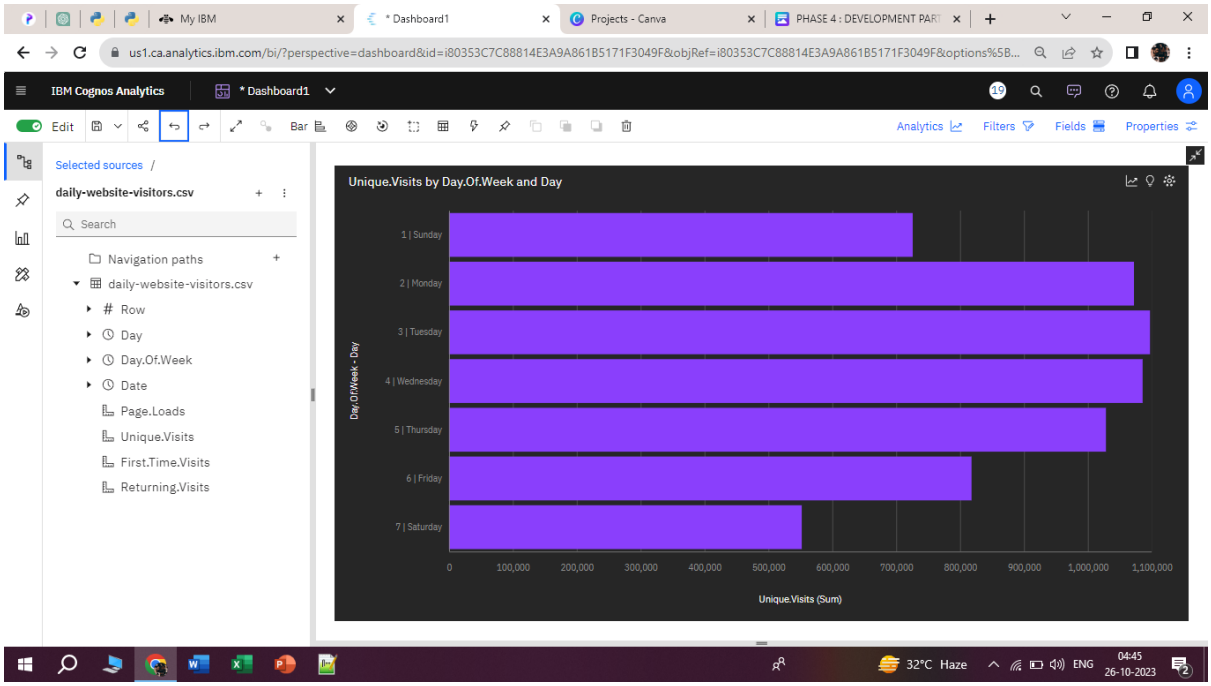
- Based on the current forecasting, **Page.Loads** may reach **nearly four thousand** by **Date 2021-10-27**
- **Page.Loads** has a strong weekly trend. The largest values typically occur on **Tuesday**, whereas the smalest values on **Saturday**.
- Over all **dates**, the average of **Unique.Visits** is **nearly three thousand**.
- Over all **dates**, the average of **First.Time.Visits** is **almost 2500**.



- First time visitors, Unique visitors, Returning Visitors are get Varying day-by-day on the daily basis based on the performance and expericence of the Website so, we can’t able to judge the performance and visitors user exeperience.

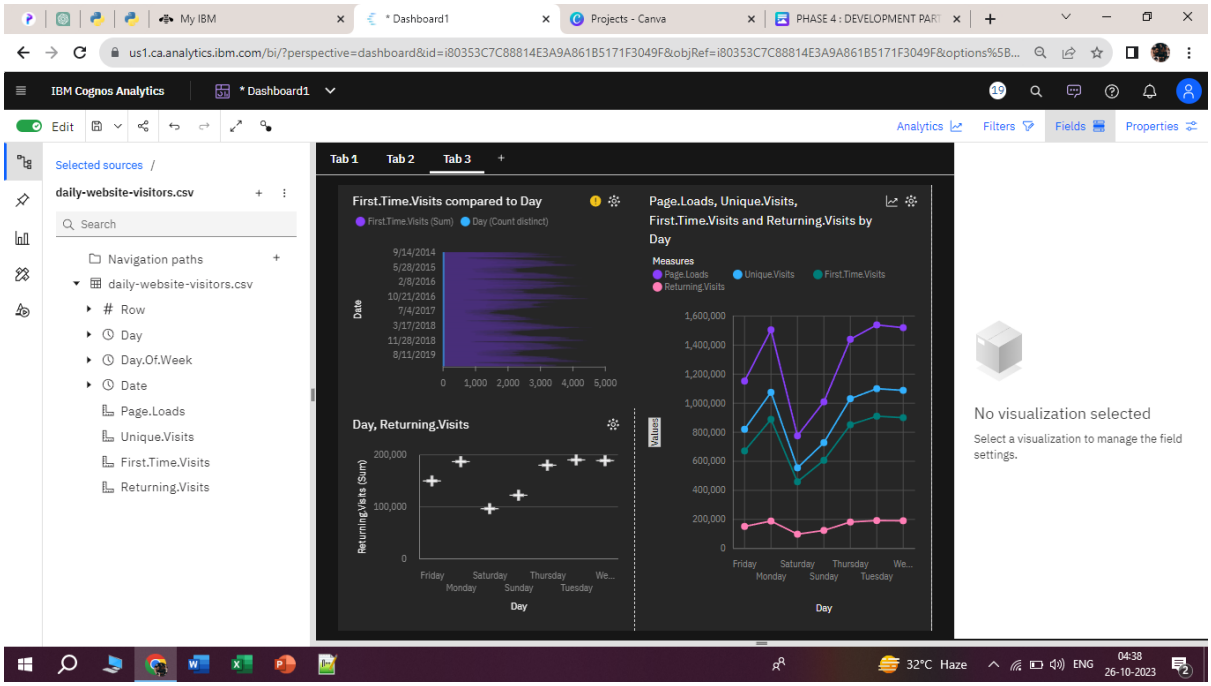


- Unique Visitors are the Daily and loyal visitors .who use the platform for they professional use with there brain storm addiciton for the website.



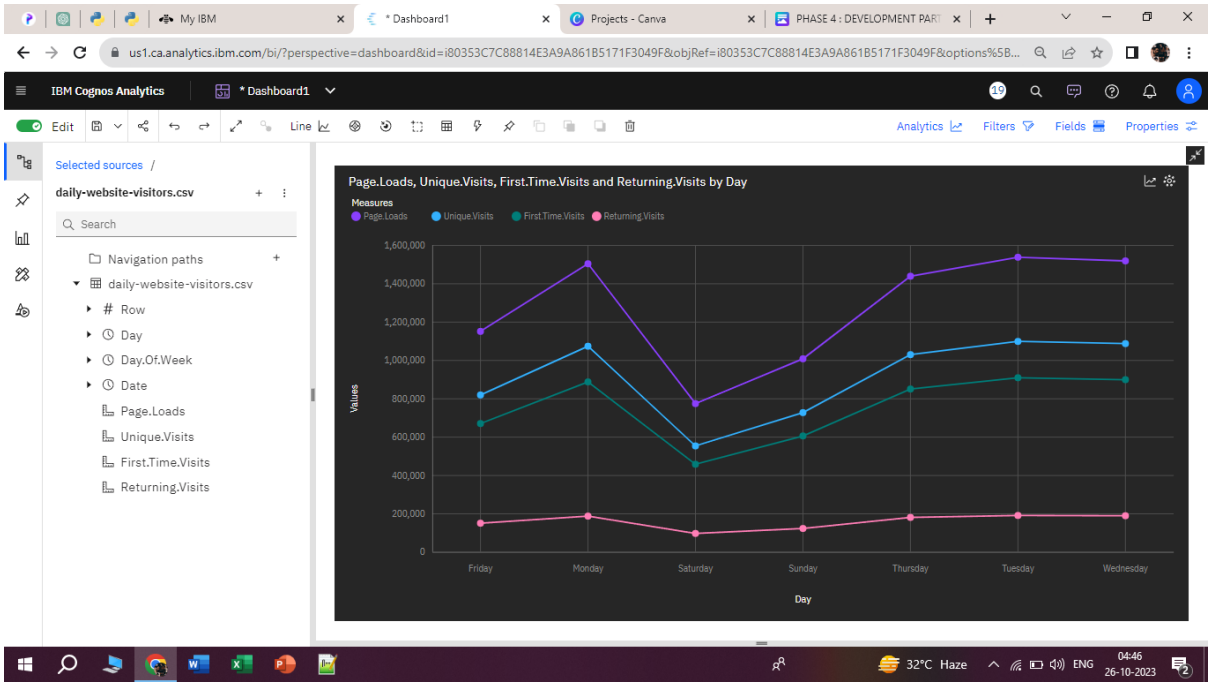
- There is major difference in week days and week ends visitors got varied in there need.

- When compared with the week ends the professionals are using the platform on there work basis on week days.



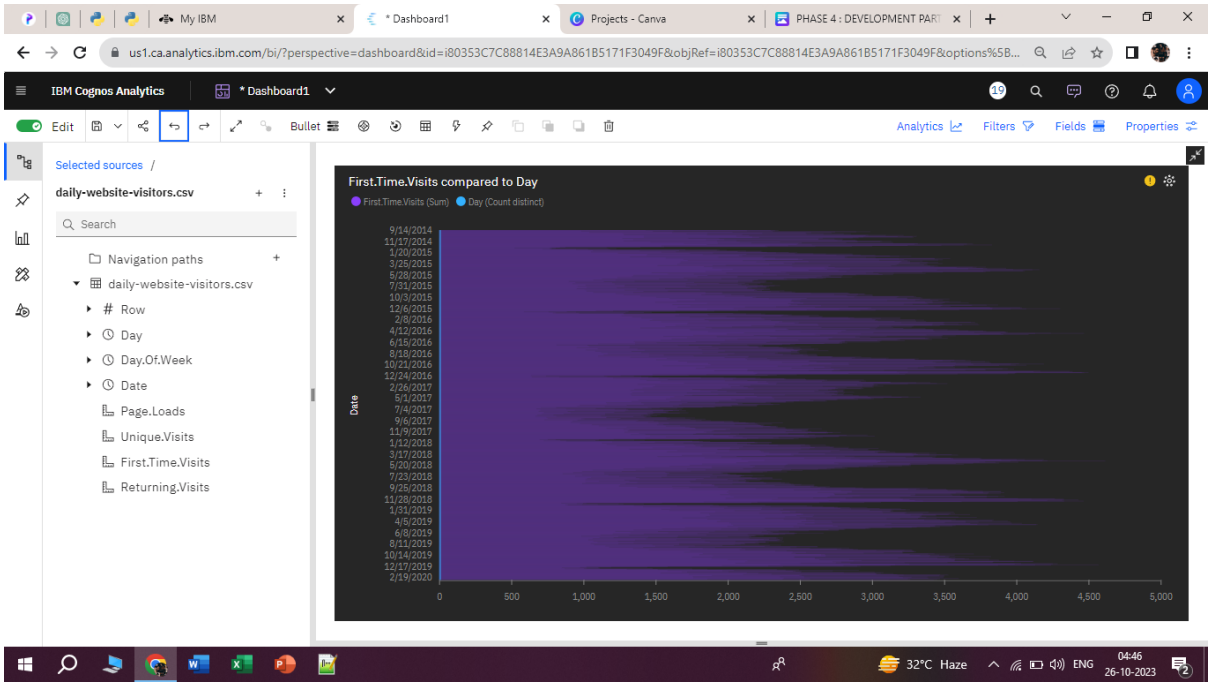
Insights :

- Over all **dates**, the average of **Returning.Visits** is **511.8**.
- Across all **dates**, the average of **Page.Loads** is **over four thousand**.
- The total number of results for **First.Time.Visits**, across all **dates**, is **over two thousand**.
- The total number of results for **Page.Loads**, across all **dates**, is **over two thousand**.



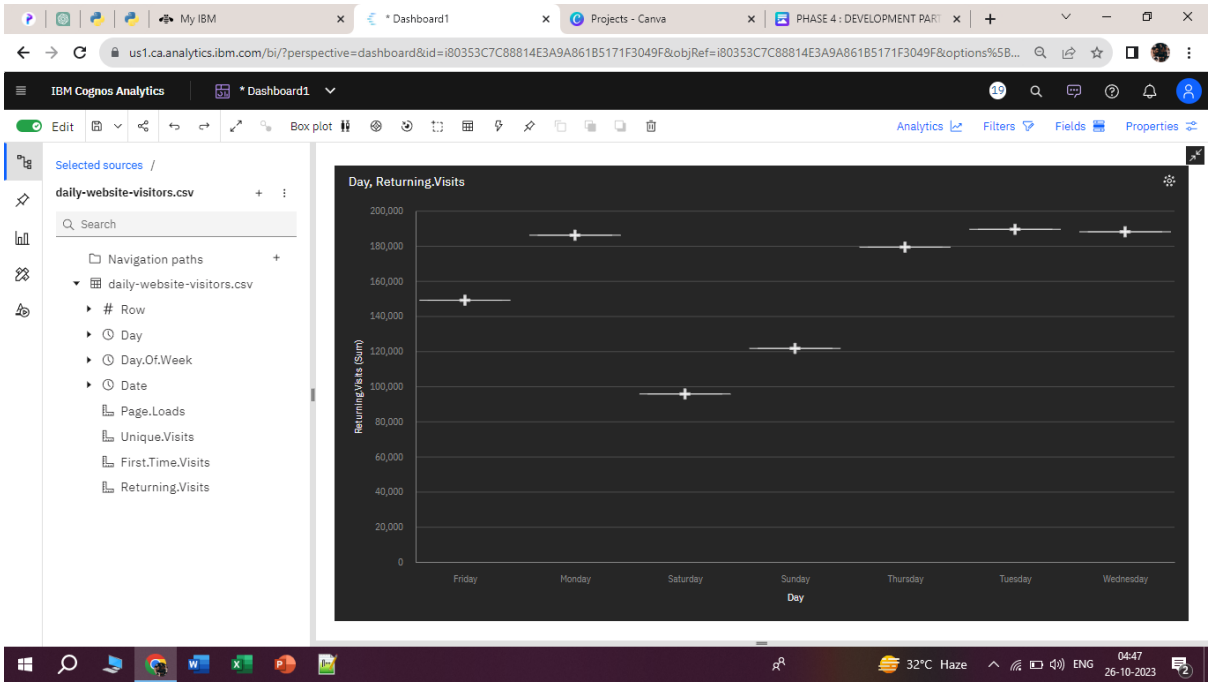
- Here You can go with Page loads got Analysed in comparison with the First time, Returning Visits, Unique visits .

- Loads are more and Traffic is more on starting of week days like Monday and end week days like Friday.



- First visitors are the new visitors for there necessity ,Product improvement and more.

- First visitors have the seasonal visit traffic on the above graph with the respective months and days.



- First visitors are the new visitors for there necessity ,Product improvement and more.

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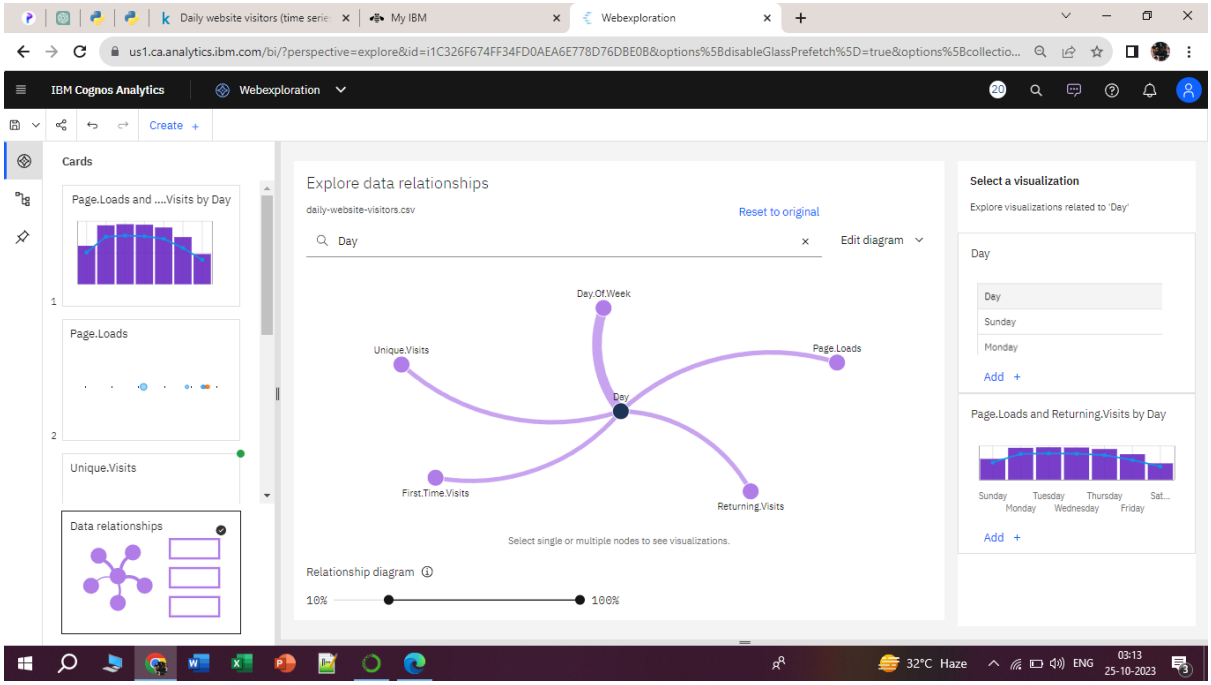
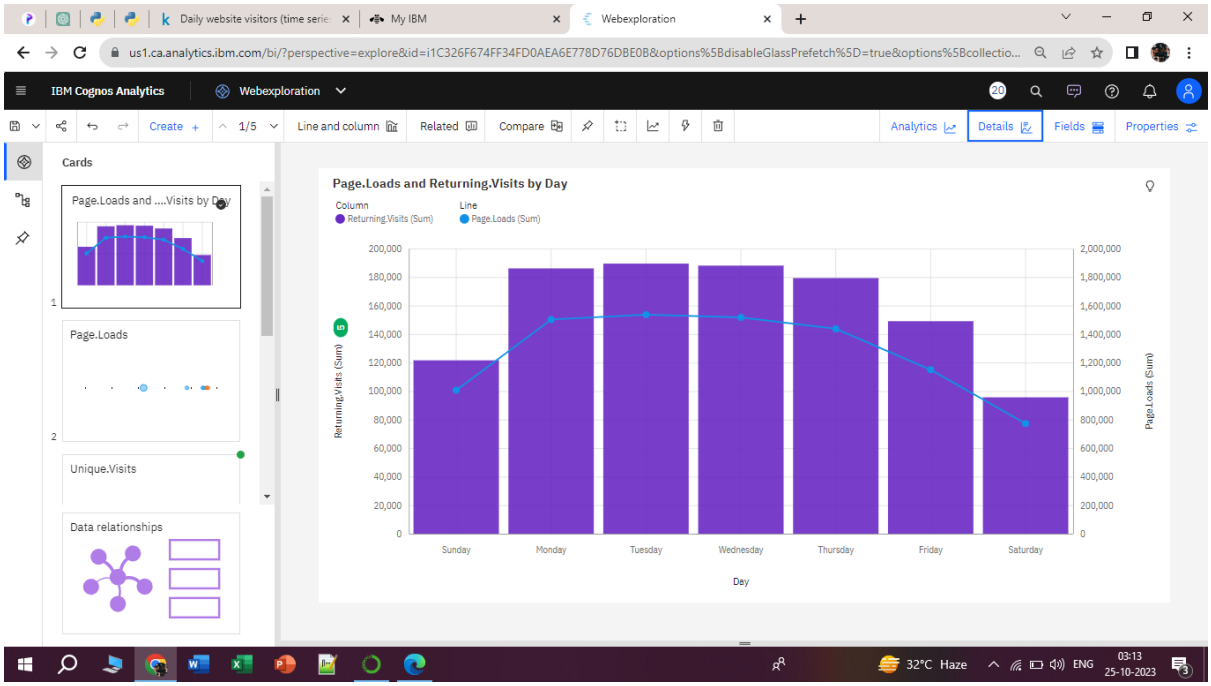
Report

Segmentation



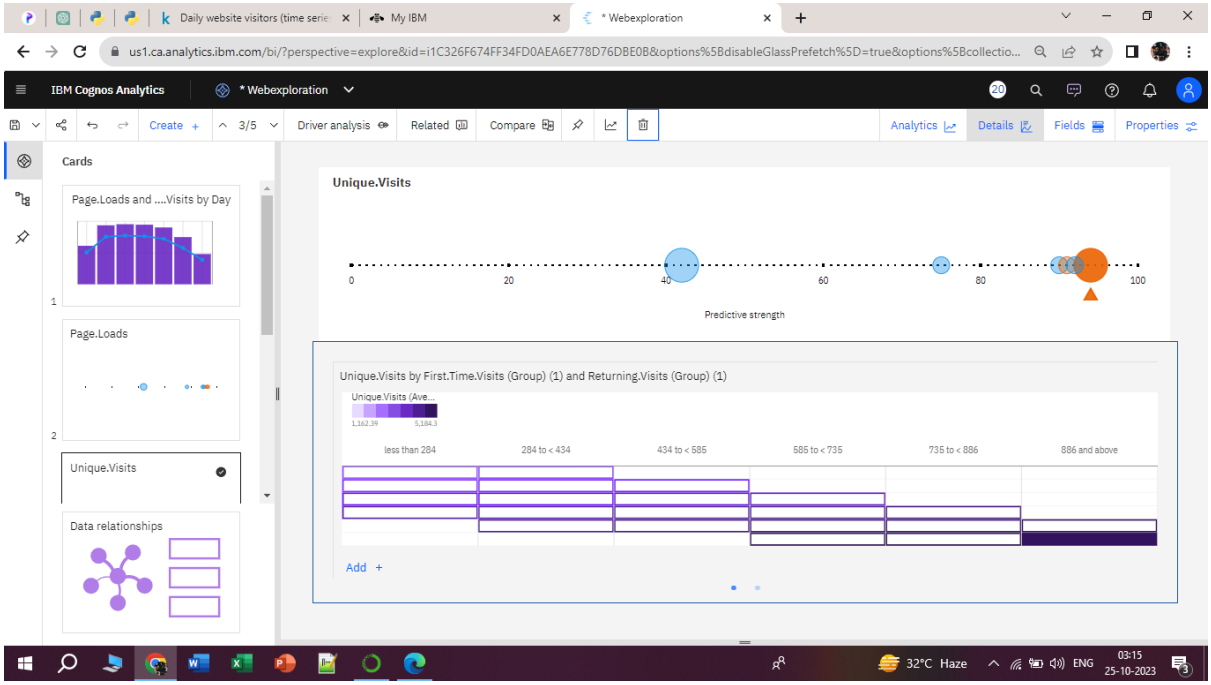
- Every insights are interlinked with the Day ,Here the Day is the major source which interlinks all the corresponding respectives.

- without any collapse and congestion every insights are linked with Day to show the Website Traffic.

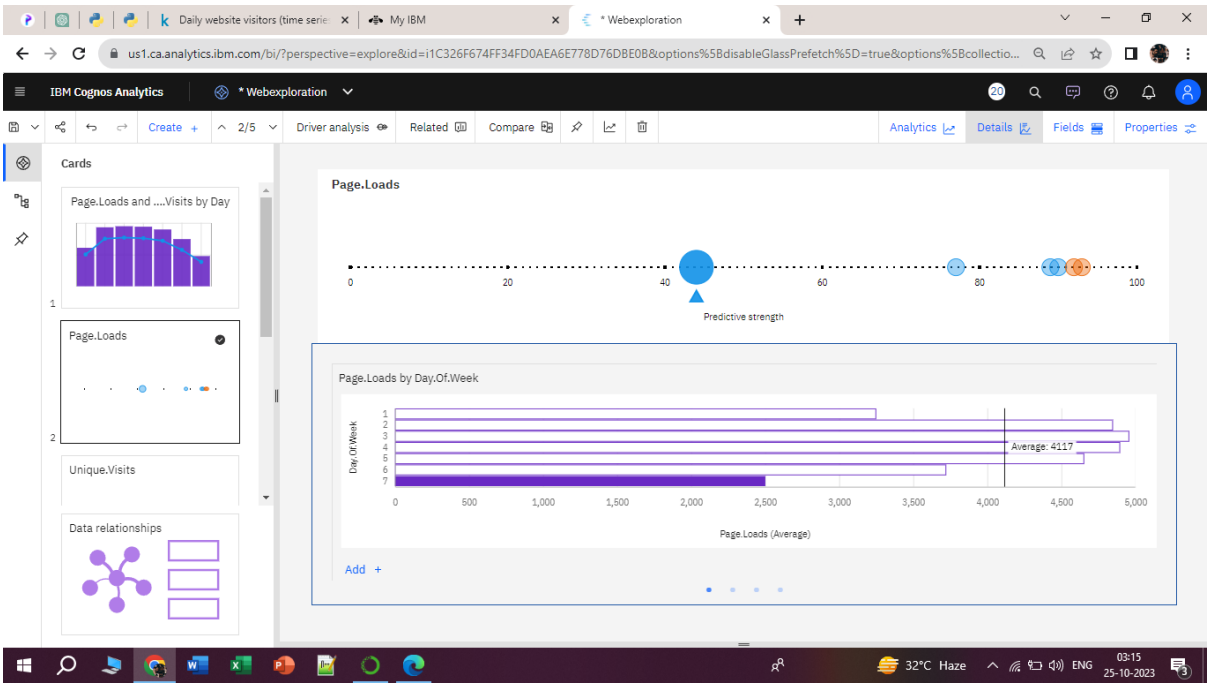


Insights :

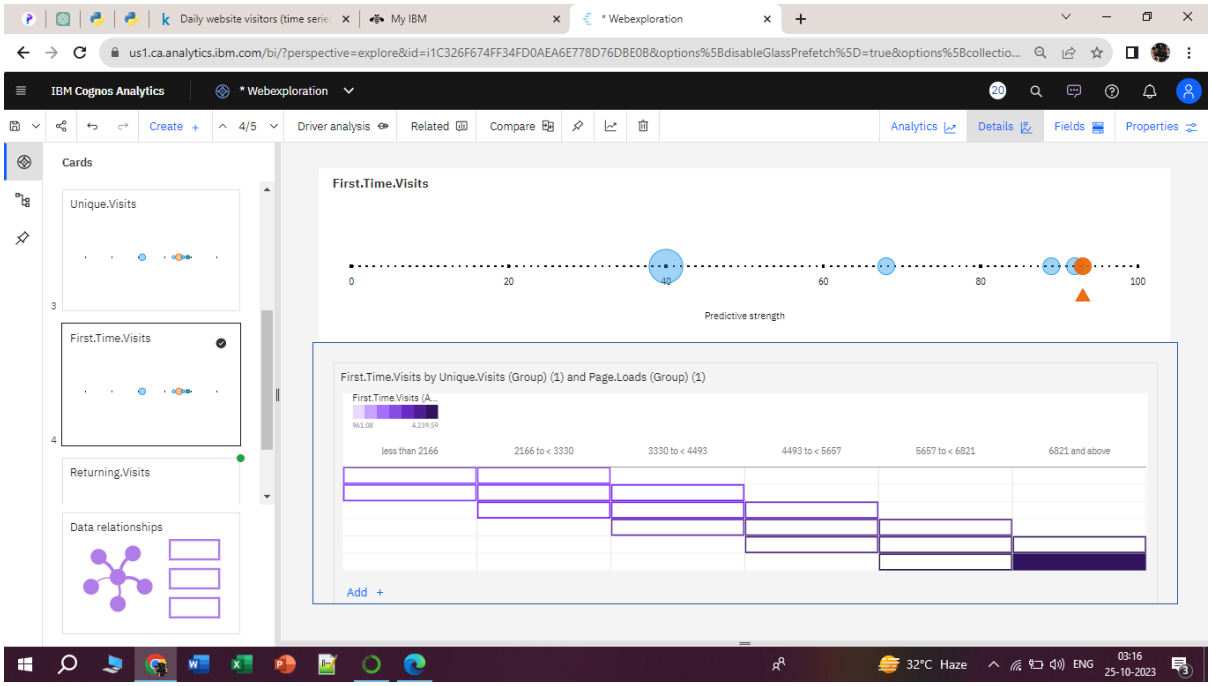
- Across all **days**, the sum of **Returning.Visits** is over 1.1 million.
- **Returning.Visits** ranges from almost 96 thousand, when **Day** is Saturday, to over 189 thousand, when **Day** is Tuesday.
- **Returning.Visits** is unusually low when **Day** is Saturday.
- For **Returning.Visits**, the most significant values of **Day** are Tuesday, Wednesday, Monday, Thursday, and Friday, whose respective **Returning.Visits** values add up to almost 892 thousand, or 80.4 % of the total.
- Across all **days**, the sum of **Page.Loads** is over 8.9 million.
- **Page.Loads** ranges from nearly 773 thousand, when **Day** is Saturday, to over 1.5 million, when **Day** is Tuesday.
- **Page.Loads** is unusually low when **Day** is Saturday.



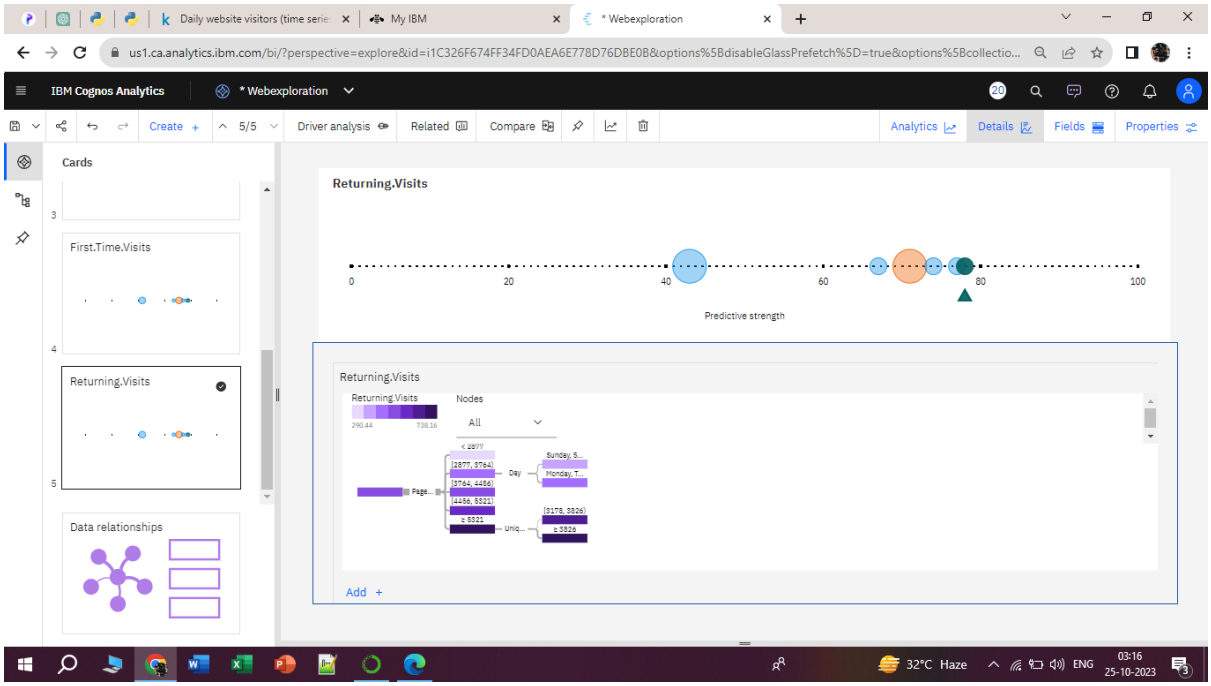
- **First.Time.Visits (Group) (3)** strongly affects **Unique.Visits** (94%).
- **Unique.Visits** is most unusual when **First.Time.Visits (Group) (3)** is 3934 and above and less than 1205.
- **Returning.Visits (Group) (2)** strongly affects **Unique.Visits** (76%).
- **Unique.Visits** is unusually high when **Returning.Visits (Group) (2)** is 886 and above.
- Over all values of **First.Time.Visits (Group) (3)** and **Returning.Visits (Group) (2)**, the average of **Unique.Visits** is nearly three thousand.
- The average values of **Unique.Visits** range from over a thousand to over five thousand.
- **First.Time.Visits (Group) (3)** and **Returning.Visits (Group) (2)** strongly affect **Unique.Visits** (96%).
- **Unique.Visits** is unusually high when the combination of **First.Time.Visits (Group) (3)** and **Returning.Visits (Group) (2)** is 3934 and above and 886 and above.
- 1887 to < 2569 is the most frequently occurring category of **First.Time.Visits (Group) (3)** with a count of 666 items with **Unique.Visits** values (30.7 % of the total).
- 434 to < 585 is the most frequently occurring category of **Returning.Visits (Group) (2)** with a count of 734 items with **Unique.Visits** values (33.9 % of the total).
- There is no significant impact of **Returning.Visits (Group) (2)** on the relationship between **First.Time.Visits (Group) (3)** and **Unique.Visits**.



- Across all values of **Day.Of.Week**, the average of **Page.Loads** is over four thousand.
- The average values of **Page.Loads** range from over 2500, occurring when **Day.Of.Week** is 7, to nearly five thousand, when **Day.Of.Week** is 3.
- **Day.Of.Week** moderately affects **Page.Loads** (44%).
- **Page.Loads** is unusually low when **Day.Of.Week** is 7.
- 1 (14.3 %), 2 (14.3 %), 3 (14.3 %), and 4 (14.3 %) are the most frequently occurring categories of **Day.Of.Week** with a combined count of 1240 items with **Page.Loads** values (57.2 % of the total).



- **Unique.Visits** is unusually high when the combination of **First.Time.Visits (Group) (3)** and **Returning.Visits (Group) (2)** is 3934 and above and 886 and above.
- 1887 to < 2569 is the most frequently occurring category of **First.Time.Visits (Group) (3)** with a count of 666 items with **Unique.Visits** values (30.7 % of the total).
- 434 to < 585 is the most frequently occurring category of **Returning.Visits (Group) (2)** with a count of 734 items with **Unique.Visits** values (33.9 % of the total).
- There is no significant impact of **Returning.Visits (Group) (2)** on the relationship between **First.Time.Visits (Group) (3)** and **Unique.Visits**.



- **Page.Loads**, **Unique.Visits**, and **Day** predict **Returning.Visits** with a strength of 78.1%.

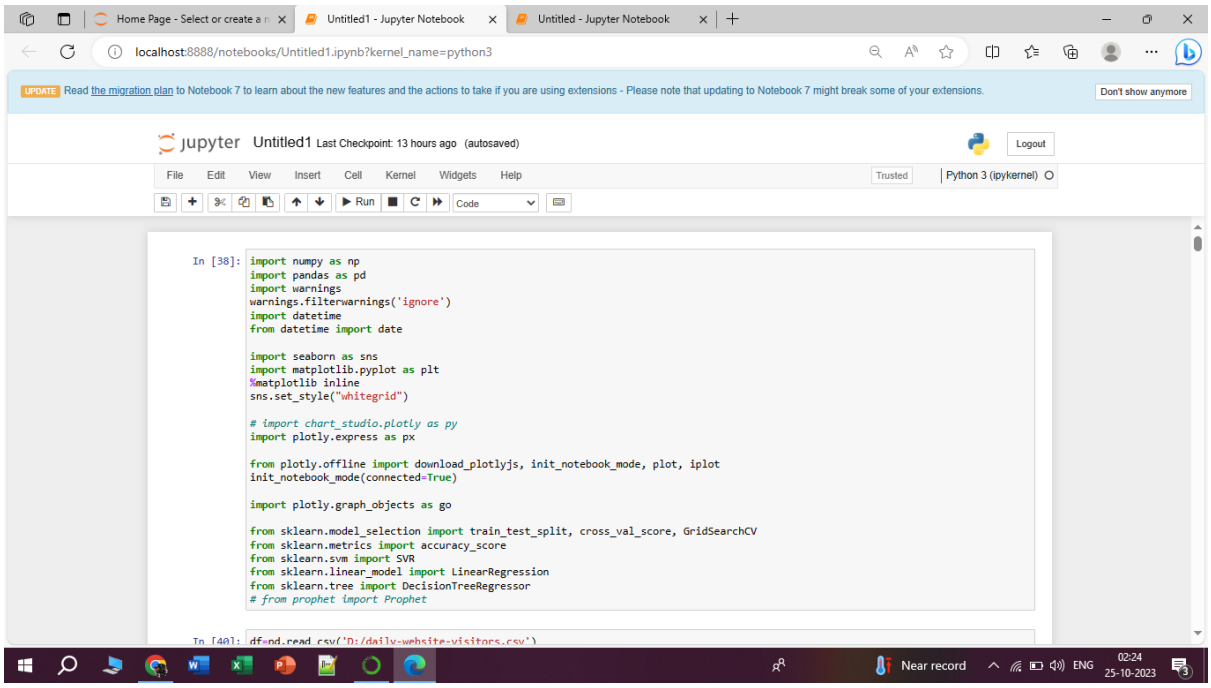
- **Page.Loads** is the most significant predictor of **Returning.Visits** being three times better than any other field.

Python Integration

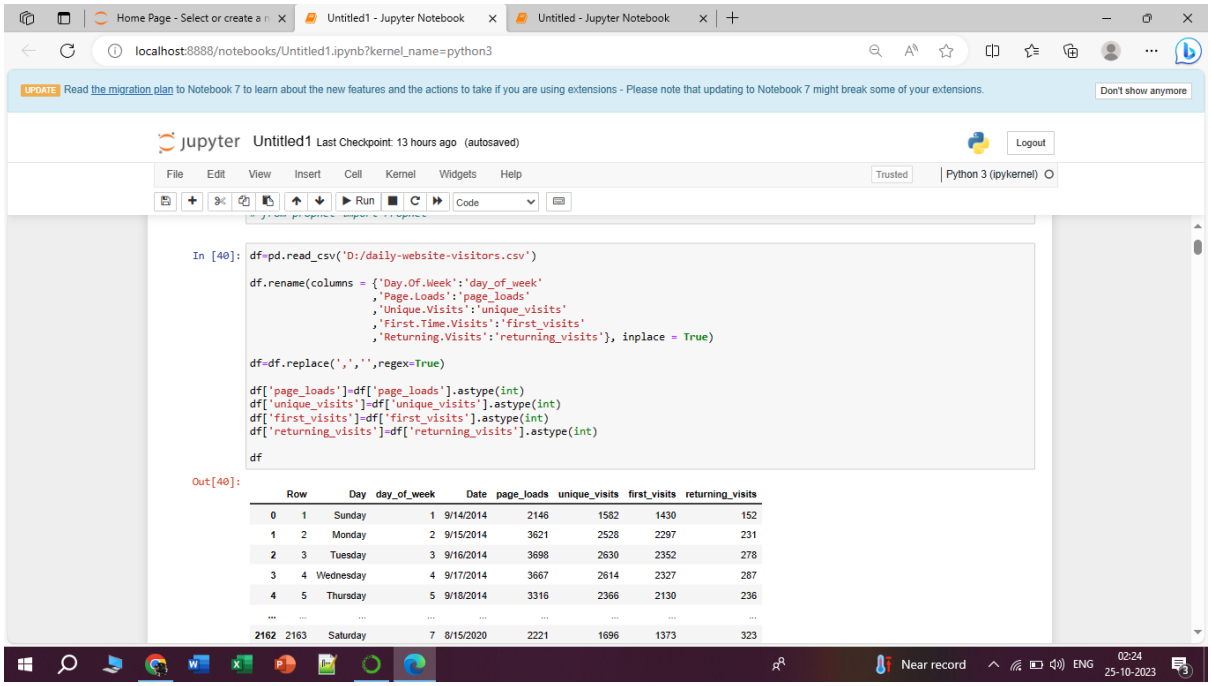
Under Python Integration Part is to make the analysis of traffic to make better and predictive with advanced techniques.

Using popular Library Modules

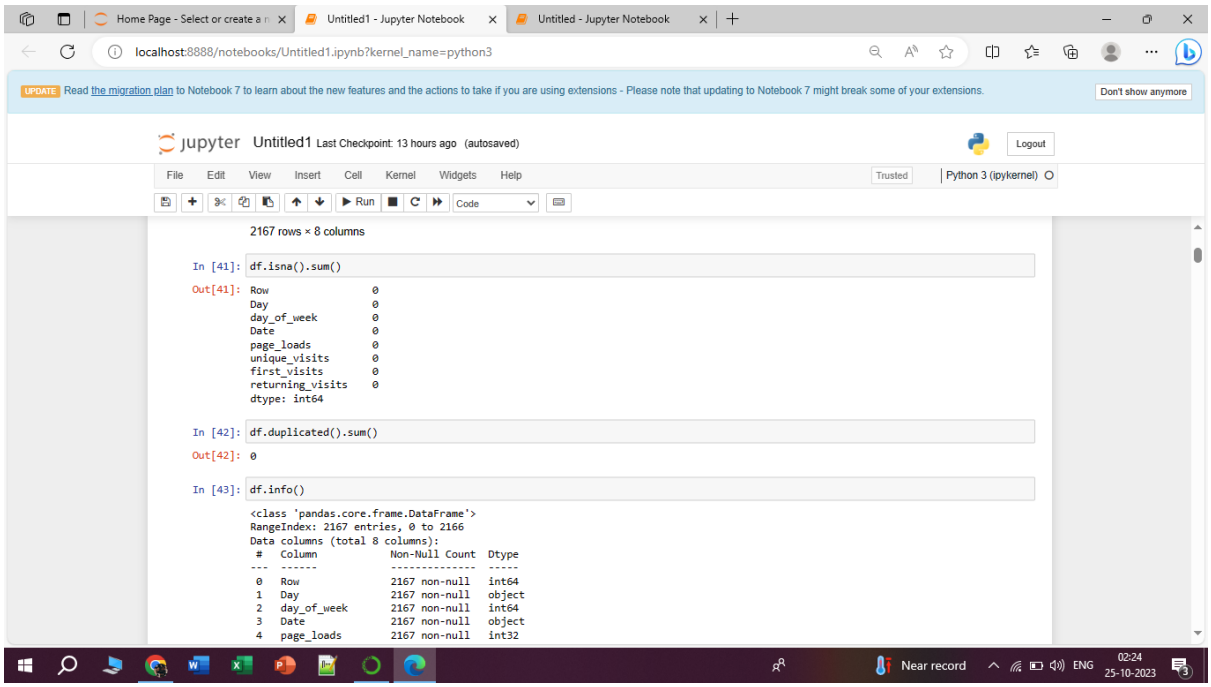
1. Numpy
2. Pandas
3. Matplot
4. Scipy
5. Seaborn and more for visualization ,analysis.



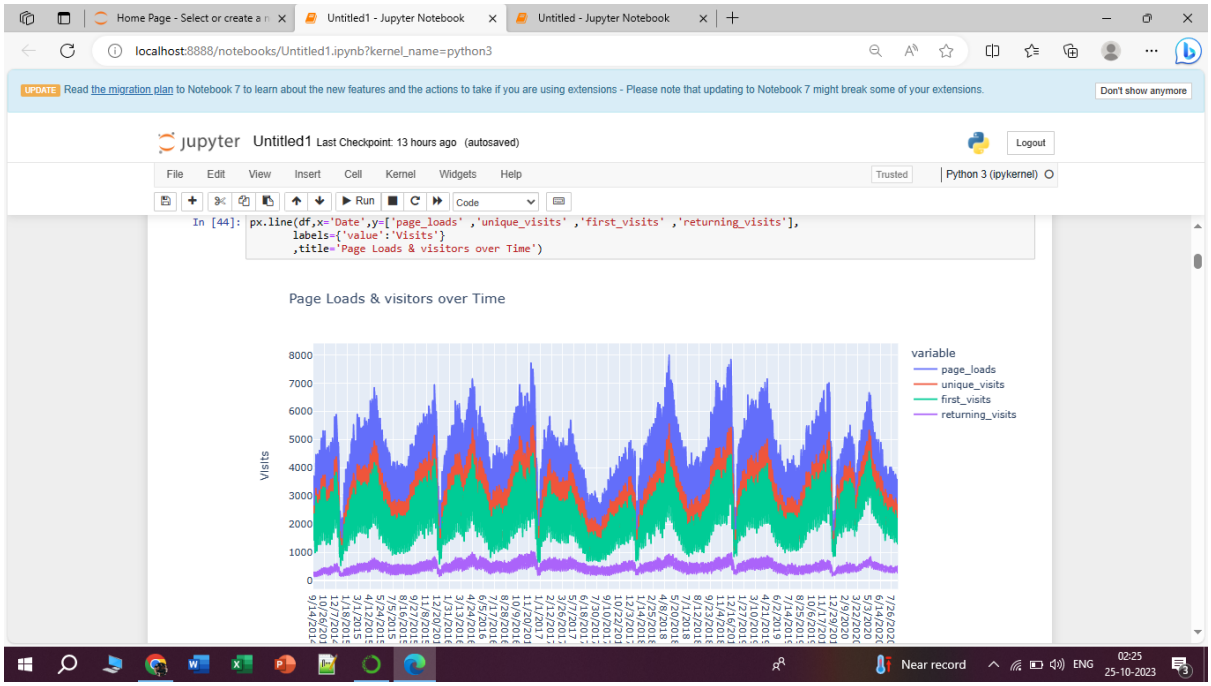
Importing the necessary modules to make the analysis better to know the work flow of traffic .



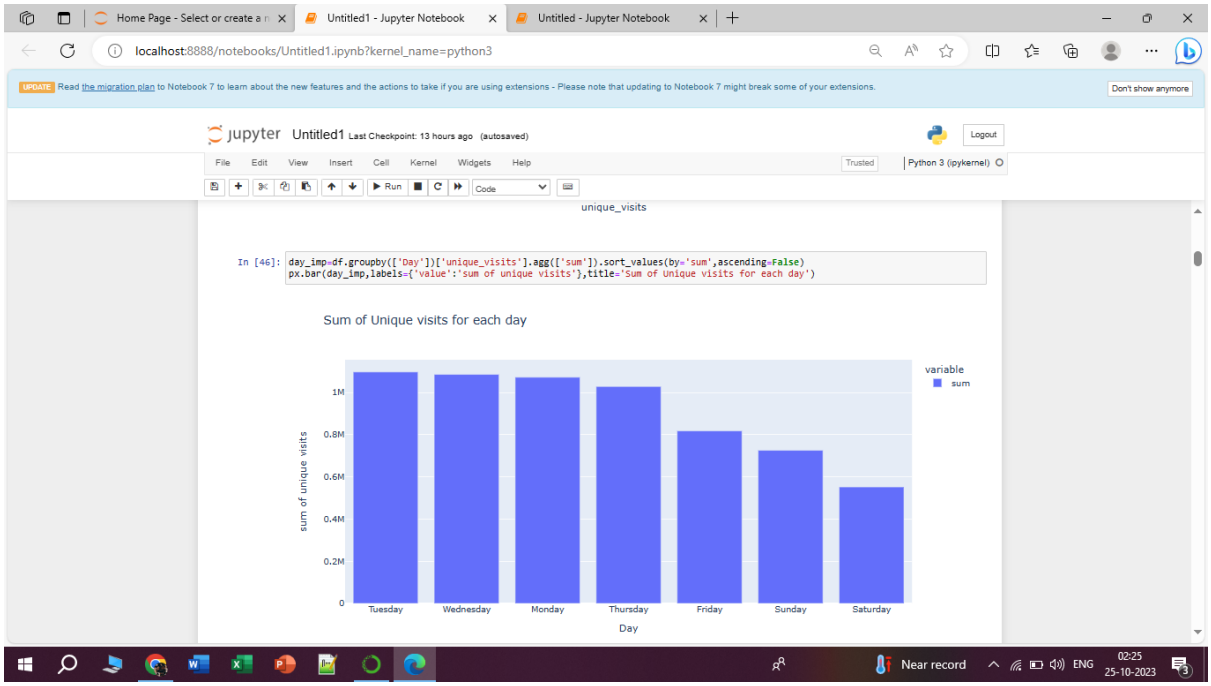
Printing the Insights like Rows, Columns, Datas inside the Data sheet which provided on the Kaggle Website for Website Traffic Analysis



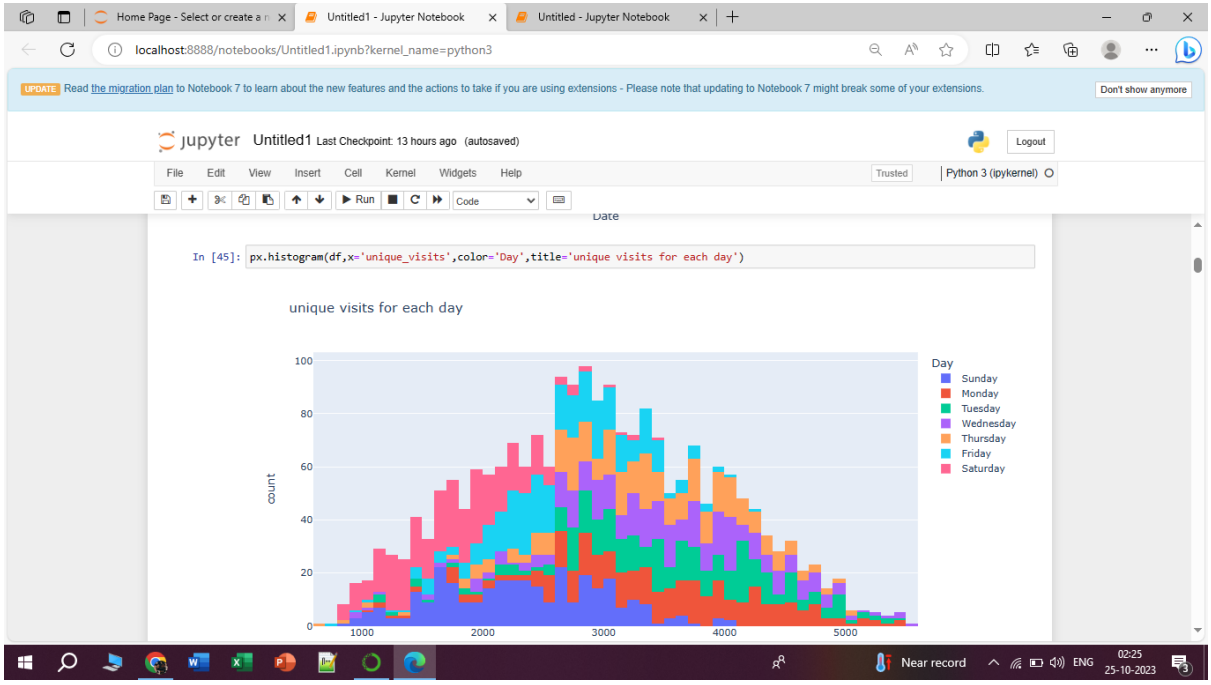
Showcasing the general information about the Data set for the better understanding for analysis.

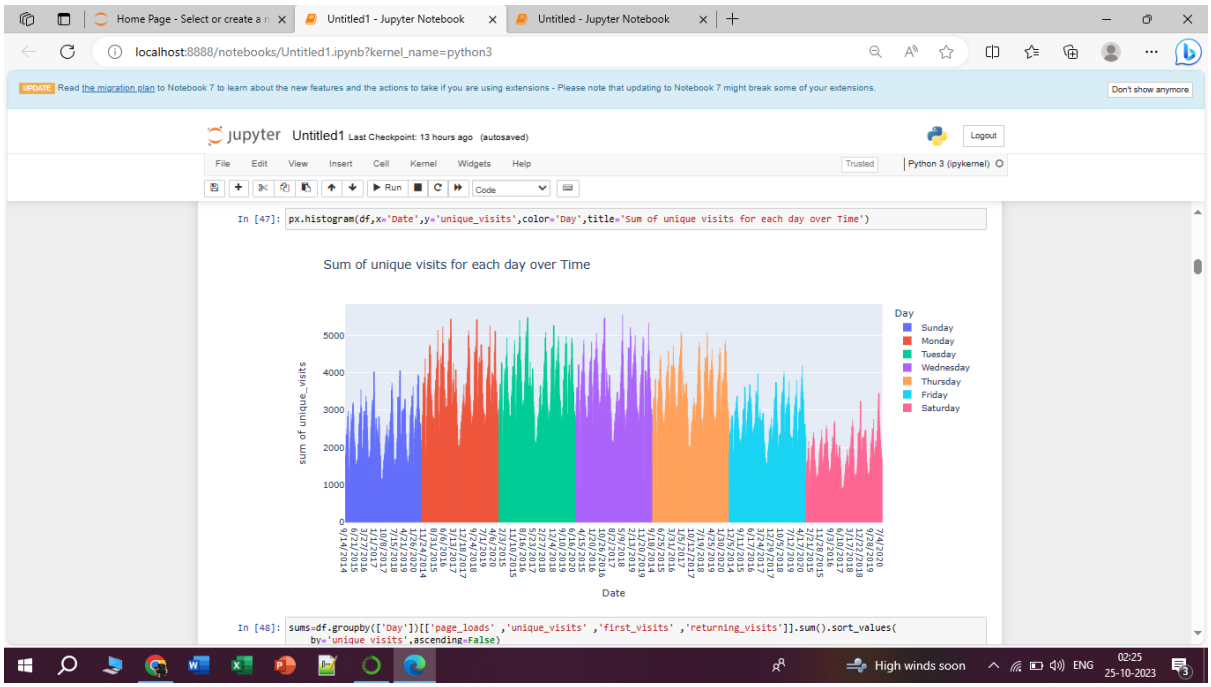


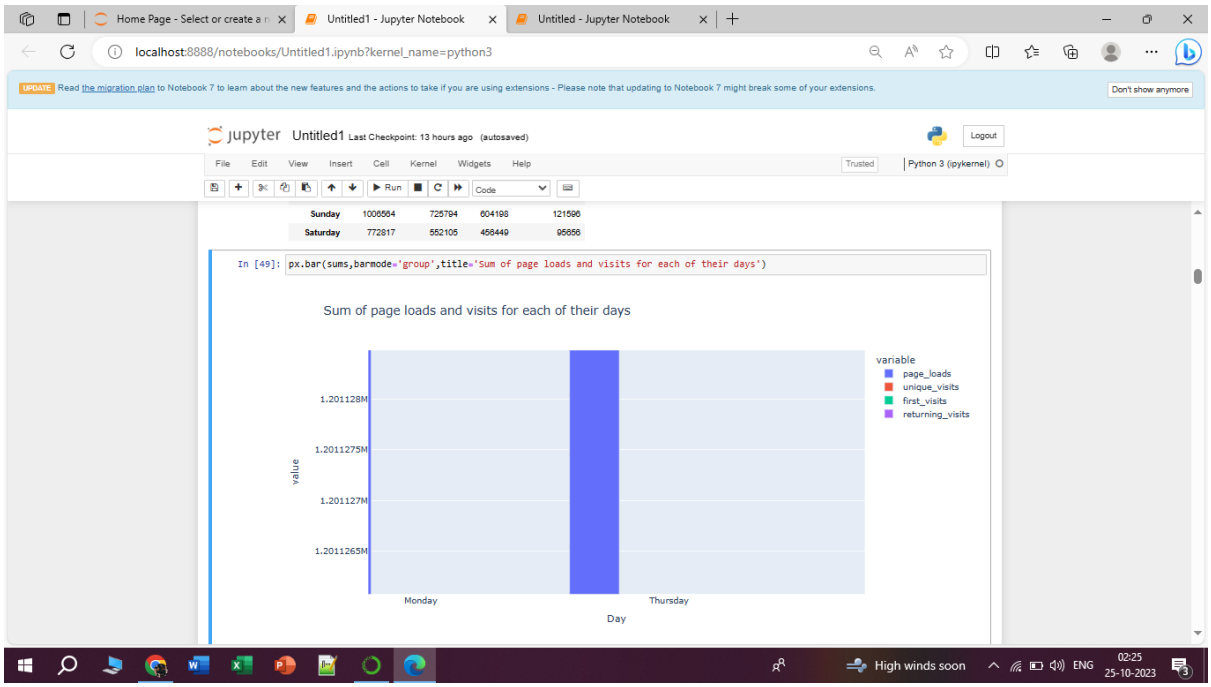
Presenting the **Time Series** for Page loads, Unique Visits, First time, Returning with the help of provided Data set to analyse the Traffic



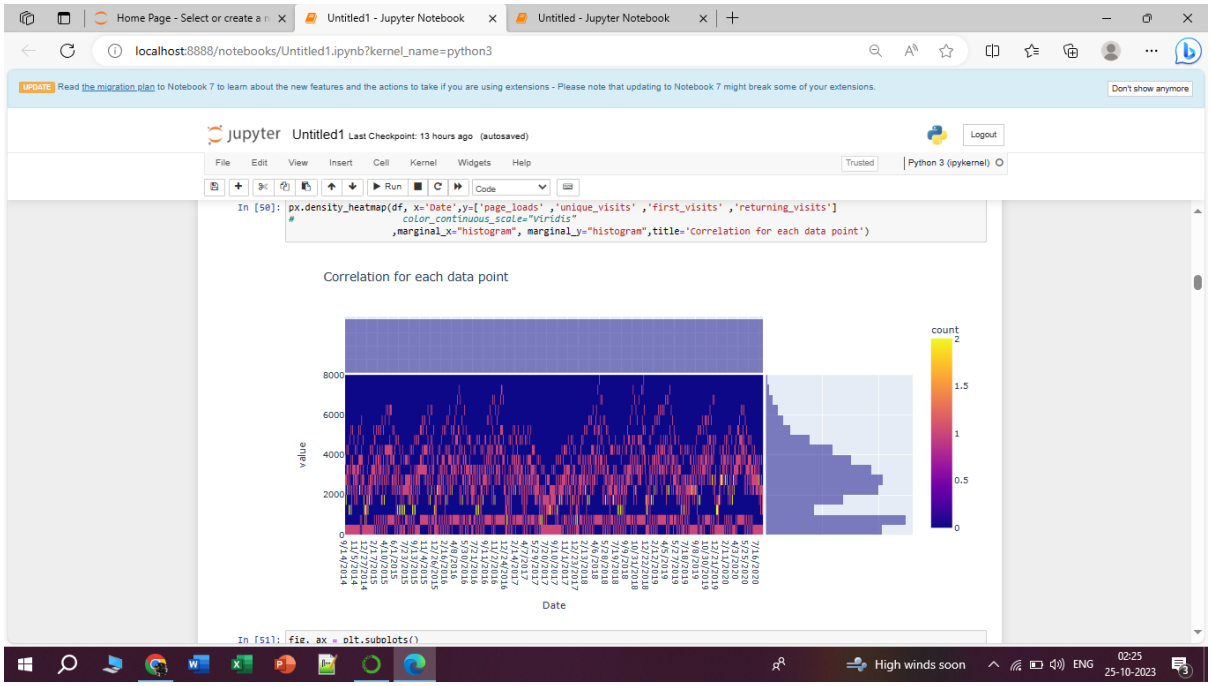
Calculating the Sum values for the Unique Visitors with the help of visualizaiton tool like Bar Graph and Histogram.



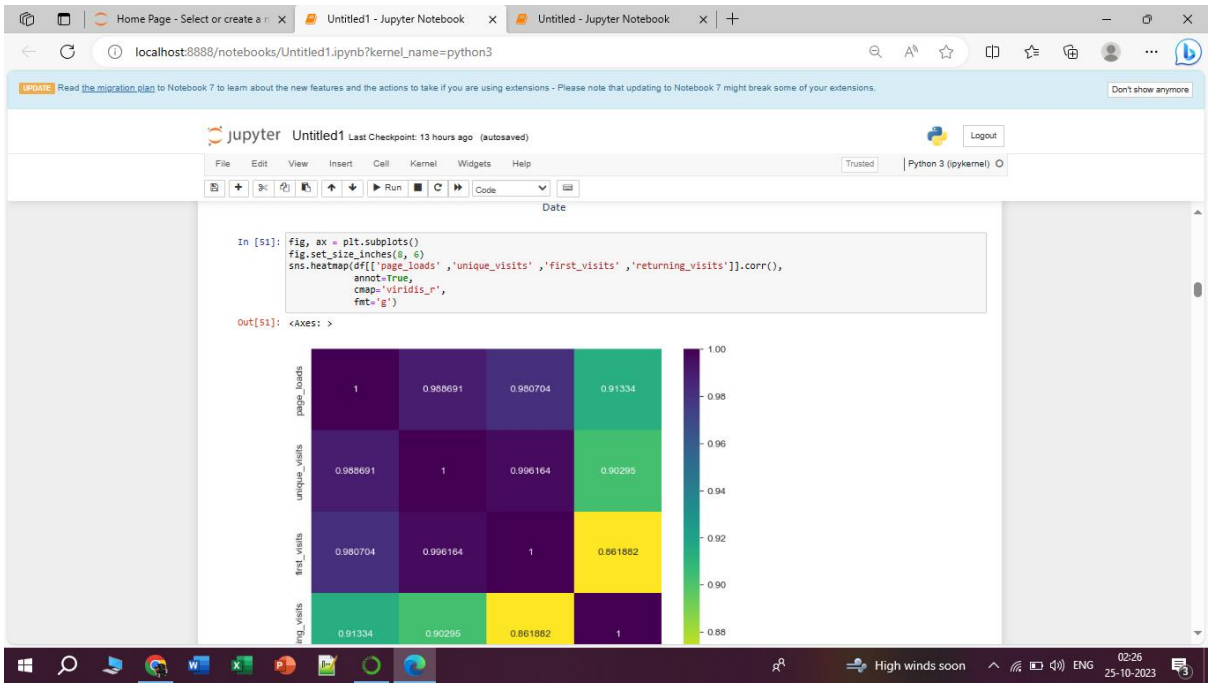




Visualizing the Sum of the Page loads in the bar graph to under stand the Traffic in the week.



Representing the Correlation of the Whole Data set for **EDA** Predcition to know the Stuffs that used by the visitors for there necessity calculation.



Conclusion

Overall Analysis of Development Part 2 with help of IBM Cognos Analysis and Python Integration. We can able to understand that the visitors traffic varies on the basis of week-ends and week-days under there use and necessity for personal or professional use.