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Website Traffic Analysis

DATA ANALYTICS WITH COGNOS : GROUP 5

PHASE : 4

Project Overview

The Website Traffic Analysis project aims to assess and understand the patterns, trends, and user behaviour on a specific website. By collecting and analysing data, the project will provide insights into the site's performance, user engagement, and areas for improvement. The results will inform decision-making, helping to optimize the website's content, design, and marketing strategies for enhanced user experience and increased traffic.

OBJECTIVE

Equipped with the right website traffic analysis tools, identify your top site pages, track visitor trends, calculate conversion rates, and ensure your marketing spend translates into an increase in conversions and sales.

1.DATA EXTRACTION:

INSTALLATION OF JUPYTER NOTEBOOK

Command to install jupyter notebook:

```
pip install jupyter notebook
```

Output:

```
Requirement already satisfied: jupyter in c:\users\dhaya\.conda\lib\site-packages (1.0.0)
Requirement already satisfied: notebook in c:\users\dhaya\.conda\lib\site-packages (6.5.4)
Requirement already satisfied: qtconsole in c:\users\dhaya\.conda\lib\site-packages (from jupyter) (5.4.2)
Requirement already satisfied: jupyter-console in c:\users\dhaya\.conda\lib\site-packages (from jupyter) (6.6.3)
```

WORKING OF JUPYTER NOTEBOOK:

Command to open jupyter notbook:

```
jupyter notebook
```

Output:

EXTRACTION:

Packages needed:

To extract command for those modules:

```
pip install numpy
pip install pandas
```

Input:

```
import numpy as np
import pandas as pd
 FILE_LOCATION = "P:\ibm\daily-website-visitors.csv"
 df = pd.read_csv(FILE_LOCATION,
                            index_col='Date',
                            thousands=',')
 df.index = pd.to_datetime(df.index)
 df
```

CODE DESCRIPTION:

- The code starts by importing the pandas library.
- The code then creates a variable called FILE_LOCATION and assigns it to the path of a file on your computer.
- Next, the code reads in that CSV file into a DataFrame object using read_csv().
- The index column is set to Date, which means that this DataFrame will have one row for each day of data.
- The index_col='Date' parameter specifies that the column with the date should be used as the index.
- The thousands=',' parameter tells pandas to use commas for thousands separators in this column.
- The code opens a file called "P:\ibm\daily-website-visitors.csv" and reads in the data using csv.reader().

- The data is then stored in a list, which is assigned to variable "data".
- Next, numpy is imported as np so that we can use it to analyze the data.
- Finally, the first row of our dataset is analyzed with np.array() and printed out on screen for us to see what's going on with this dataset.
- The code will open the file "P:\ibm\daily-website-visitors.csv" and read the data in as a list of tuples, one for each row of data.

Output:

Date	Row	Day	Day.Of.Week	Page.Loads	Unique.Visits	First.Time.Visits	Returning.Visits
2014-09-14	1	Sunday	1	2146	1582	1430	152
2014-09-15	2	Monday	2	3621	2528	2297	231
2014-09-16	3	Tuesday	3	3698	2630	2352	278
2014-09-17	4	Wednesday	4	3667	2614	2327	287
2014-09-18	5	Thursday	5	3316	2366	2130	236
...	...	...	...	...	...	...	...
2020-08-15	2163	Saturday	7	2221	1696	1373	323
2020-08-16	2164	Sunday	1	2724	2037	1686	351
2020-08-17	2165	Monday	2	3456	2638	2181	457
2020-08-18	2166	Tuesday	3	3581	2683	2184	499
2020-08-19	2167	Wednesday	4	2064	1564	1297	267

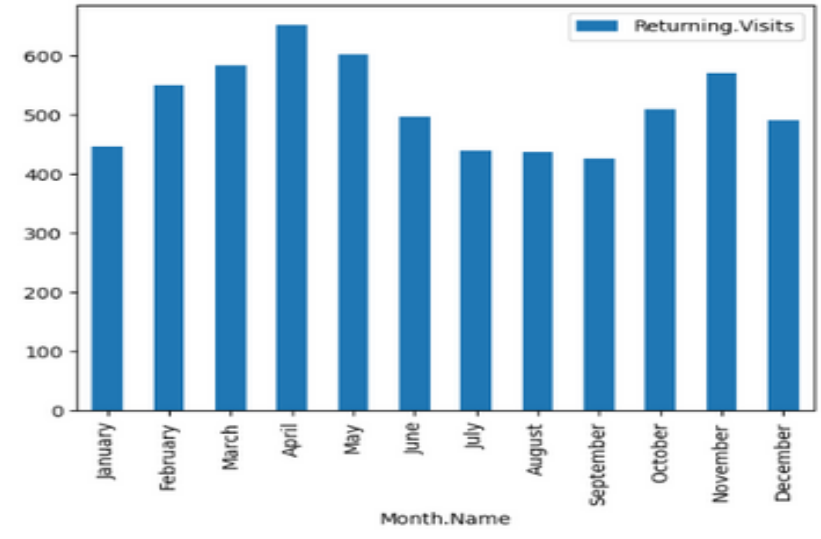
2167 rows × 7 columns

EXTRACTION WITH VISUALIZATION:

Extraction is the process of retrieving or pulling data from one or more sources. These sources can be diverse and include databases, spreadsheets, web services, logs, and more.

Transformation involves manipulating, cleaning, and structuring the data to make it suitable for the desired use case. This can include operations like filtering, aggregating, joining, and more.

```
pd.DataFrame(dataset_group_by_month['Returning.Visits'].mean()).loc[MONTH_NAMES].plot(kind='bar')
plt.show()
```

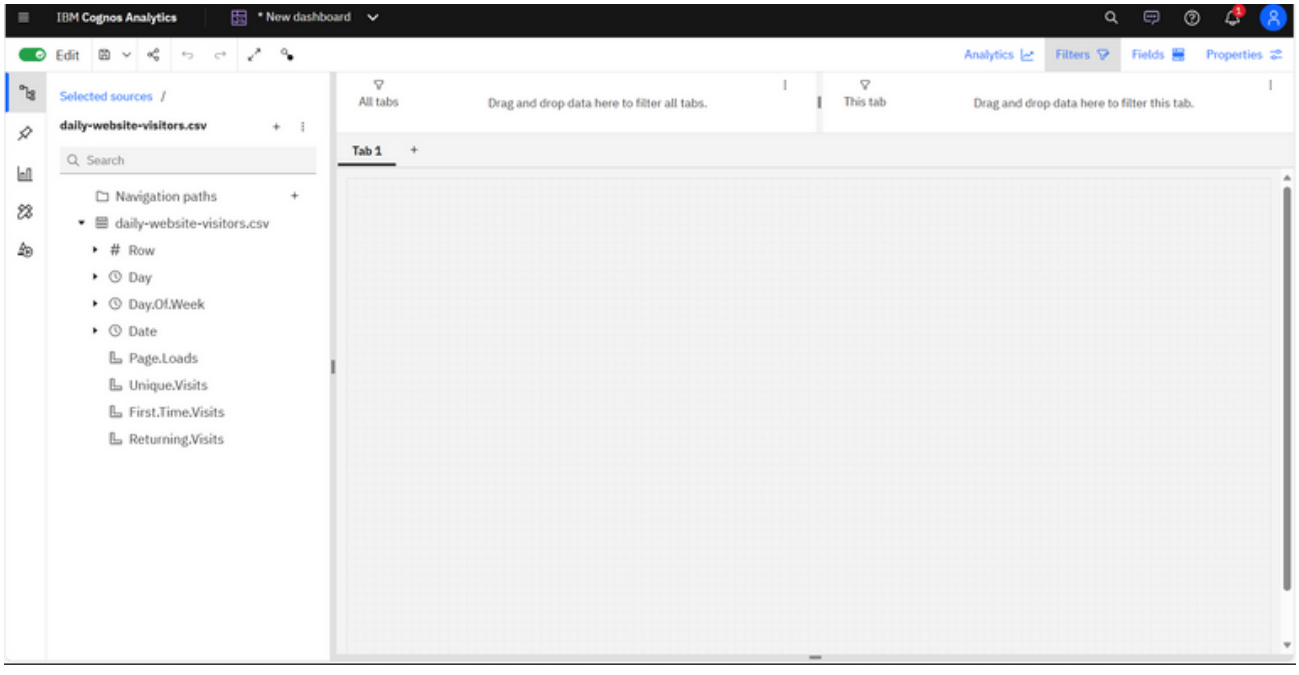


2.COGNOS ANALYTICS IN ACTION

Cognos Analytics serves as a powerful tool to transform our analytical findings into actionable insights. This section explores the utilization of Cognos Analytics in enhancing the accessibility and applicability of our results.

Dashboard Design

We delve into the process of designing intuitive dashboards within Cognos Analytics. These dashboards serve as a centralized hub for visualizing key metrics, trends, and predictions derived from our analysis.



Report Generation

Cognos Analytics enables the creation of comprehensive reports summarizing the outcomes of our efficiency analysis. This section outlines the steps involved in generating reports that cater to various stakeholders, providing customized views based on their informational needs.

Templates and themes

IBM Cognos Analytics includes several basic report templates and color themes that you can choose from when you create a new report.

Adding data

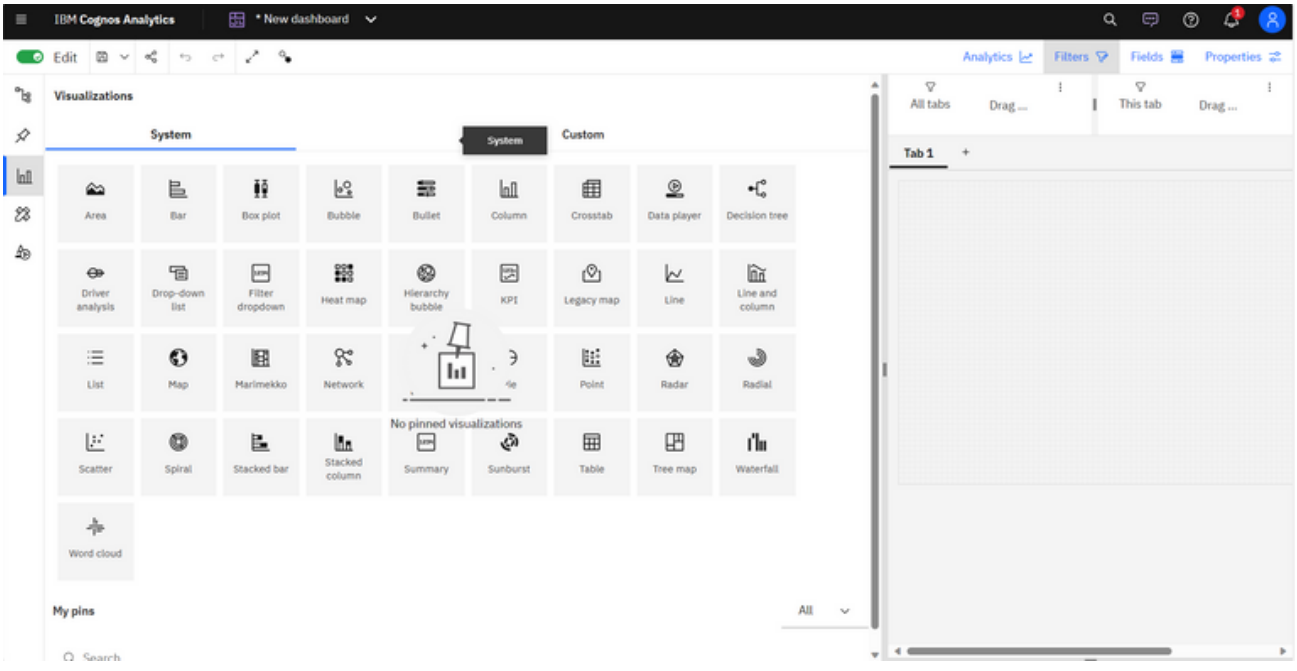
Add data to a report by loading packages or data modules in IBM Cognos Analytics - Reporting.

Inserting a single data item

You can insert a single data item anywhere in your report using the singleton object. The singleton object retrieves only the first row value for that query. Inserting a single data item is useful when you want to show a value that is independent from the rest of the values in the report or when you want to insert some boilerplate text, such as a company name and address. For example, you can add the total revenue value in the header of each page in a report.

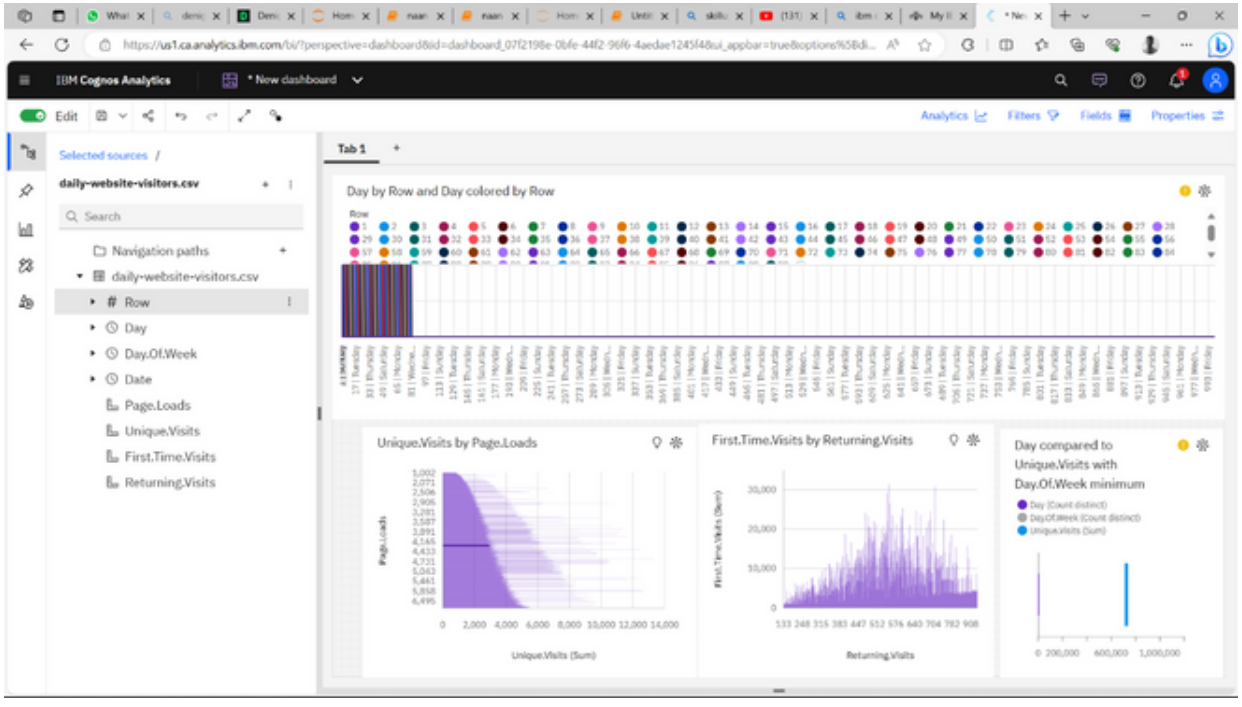
Continuous Improvement

In a world where consumer preferences and market dynamics are in constant flux, the ability to adapt and refine sales strategies is paramount. This process begins with the collection of high-quality data, which serves as the foundation for informed decision-making. The art of continuous improvement lies in the willingness to evolve – iterating sales and marketing approaches, fostering cross-functional collaboration, and investing in the growth of sales teams.



Actionability

The practicality of our recommendations was assessed through engagement with stakeholders responsible for implementing changes based on our analysis.



Conclusion

Website traffic analysis is the compass that guides the visitors of the websites. It provides critical insights that are fundamental to success. By examining data, inspection can make informed decisions about their usual, regular, unique visitors of the website. This analysis makes the average view of visitors of the website, then by upgrading to new things in the website makes the visitors more conventional and widely used for the future visits in the website.