WEBSITE TRAFFIC ANALYSIS

DATA ANALYTICS WITH COGNOS – PHASE 2 INNOVATION

TEAM MEMBERS:

SATHVIKA.S (211521243140)

ALIN HIMA.S (211521243008)

SUBHASHINI.R (211521243154)

KOUSHIKA.S.S (211521243093)

SRIRANJANI.R (211521243152)

PHASE 2: INNOVATION

TITLE: WEBSITE TRAFFIC ANALYSIS PROJECT

PROJECT DEFINITION:

Consider incorporating machine learning models to predict future traffic trends or user behavior patterns.

DATASETLINK:

HTTPS://WWW.KAGGLE.COM/DATASETS/BOBNAU/DAILY-WEBSITE-VISITORS

OVERVIEW:

Website traffic analysis involves collecting and analyzing data about visitors to your site and their actions once they reach it. This information is vital for marketers to implement effective tactics that optimize website traffic and improve conversion rates. The amount of traffic is no longer the only metric used to verify a business's success. Website traffic analysis tools measure the performance of your website using the aforementioned metrics. The data they gather allows you to compare your performance to your competitors' and make sure you're on the right track. The key measurements, however, are centered around unique visitors (UVs), page views, and traffic curves. Monitoring unique visitors will help you identify the number of individuals who viewed one of your website's pages at least once a month. With traffic views, the duration of every session genuinely matters depending on the type of website you're running. For example, it would be a critical indicator for content-generating websites. As for traffic curves, they help determine peak audience activity times. Consequently, you'd be able to learn at what times you can expect traffic surges so you improve your strategies.

IMPLEMENTATION STEPS:

DATA RETRIEVAL:

Implement scripts, APIs, or tools to retrieve data from your chosen sources. For example, you might use Python libraries like requests for web scraping or APIs provided by analytics services.

DATA SAMPLING:

Depending on the volume of data, consider sampling a subset for initial analysis to speed up processing and minimize resource usage

DATA CONSOLIDATION:

If you're collecting data from multiple sources, consolidate it into a single dataset. Ensure that the data formats are compatible.

DATA TRANSFORMATION:

Convert data into a format suitable for analysis. For time-based analysis, ensure timestamps are in a consistent format and time zones are consistent.

FEATURE EXTRACTION AND ENGINEERING:

Create relevant features from your data. For web traffic analysis, this could include features like:

Time-related features (e.g., day of the week, time of day).

User-related features (e.g., device type, browser, location).

Page-related features (e.g., URL structure, page category).

Interaction features (e.g., click-through rate, session duration).

DATA ENCODING:

Encode categorical variables, such as user agents or page categories, using techniques like one-hot encoding or label encoding.

DATA NORMALIZATION/SCALING:

Normalize numerical features to have a similar scale. Common methods include min-max scaling or standardization (z-score scaling).

UNDERSTAND WHERE TRAFFIC IS COMING FROM:

Whether it's through paid adverts, organic traffic from search or regular social campaigns, knowing where your traffic is coming from is vital to understanding just how the world sees – or finds – your website. Depending on which reporting tool you use, the 'source' and 'source medium' reports will give you all the information you will need to see exactly where people are coming from when they click through to your website. The source of traffic will be labeled in your analytics software, depending on the platform, as 'Google', 'Yahoo Search' etc.

Use this data to analyze the success of previous campaigns you have run, have you recently invested in an email marketing campaign that has performed better than you thought? Or has that recent article on a hot topic brought in an influx of organic traffic from search results pages? Use the historical data to improve campaigns too – don't just measure the success of your campaigns with source traffic reports. If you invest money and time into running a campaign, make sure to analyze whether it's worth the same investment next time round by seeing how much traffic actually came from the campaign content.

If you're a content-generating website, then organic traffic and referral source will be a great metric to use to measure success. If you're running regular paid campaigns, make sure to analyze the different channels you are paying to feature on – be it social, Google Ads or other paid channels. Once you have established which channels are working and which need a bit more investment, you can really start to measure true success as well as applying a smarter way of analyzing your web traffic.

TOOLS FOR WEBSITE TRAFFIC ANALYSIS:

Tools for website traffic analysis look at important statistics that show the areas where your site is productive and where you need to make improvements.

These checkers scrutinize user behavior on your web pages and show calculated details about important key performance indicators (KPIs).

These KPIs include:

TRAFFIC VOLUME: The number of new and returning visitors to your website along with their demographic info.

TRAFFIC SOURCES: How users reached your site (e.g., organic search, sponsored ads, email, social media posts).

PAGE VIEWS: The number of times people visit specific pages on the site.

SESSION DURATION: THE total amount of time a visitor spends on your website.

BOUNCE RATE: The proportion of visitors who landed at any of your webpages and then left without further interacting with the site.

CONVERSION RATE: The percentage of visitors that interact with a call to action on the website (such as submitting a form or purchasing a product). This interaction is known as a conversion.

UNIQUE VISITS: Counts only a person's first visit, allowing you to separate potential clients from loyal users.

EXIT PAGES: Identifies the pages from which each visitor leaves your website.

KEY TAKEAWAYS:

When it comes to analyzing your website traffic, there are a few key metrics that will give you a great indication of what's working

and what isn't. Get to know your analytics software and start by finding the reports we mentioned above. Then set some achievable targets for the metrics that matter most to your business, whether it's increasing the number of unique visitors, decreasing the bounce rate or simply trying to increase the time spent on page – these are all great metrics to use for measuring the continual success of your website.

By taking an interest and regularly checking in on the analytics, businesses are able to keep on top of what works well and what doesn't as well as understanding what visitors experience when they interact with your website. Understanding data – even just the reports we mention, is imperative for any business looking to improve their online presence and develop their digital marketing.

REVIEW YOUR BOUNCE RATE:

Another smart way to work out just how well your website is performing is by measuring the bounce rate. This is a great metric to use to understand the pages visitors like and dislike on your website, as bounce rate is the percentage of people who have viewed a page then literally 'bounced' off or left the site.

If you're wondering what a good bounce rate looks like, generally speaking, it's between 26- 40%, but this, of course, varies from page to page and of course, website and industry. Your analytics will give you an overall bounce rate for the performance of your whole website as well as individual pages. Use the individual bounce rate attributed to each page to understand which are

performing well and which may need improving. By addressing the pages that have a high bounce rate, your overall bounce rate figure should start to reduce. Keep track of the figure to measure if your efforts are having a positive impact on this metric- after all, it's working on user experience which will have a more positive impact on your web performance as a whole.