**Project 1: Website Traffic Analysis**

**Phase 1: Problem Definition and Design Thinking**

**Project Definition:**The project involves analyzing website traffic data to gain insights into user behavior, popular pages, and traffic sources. The goal is to help website owners enhance the user experience by understanding how visitors interact with the site. This project encompasses defining the analysis objectives, collecting website traffic data, using IBM Cognos for data visualization, and integrating Python code for advanced analysis.

**Design Thinking:**

1. Analysis Objectives: Define the key insights you want to extract from the website traffic data, such as identifying popular pages, traffic trends, and user engagement metrics.
2. Data Collection: Determine the data sources and methods for collecting website traffic data, including page views, unique visitors, referral sources, and more.
3. Visualization: Plan how to visualize the insights using IBM Cognos to create meaningful dashboards and reports.
4. Python Integration: Consider incorporating machine learning models to predict future traffic trends or user behavior patterns.

**Analysis Objectives:**

* Define specific objectives for your analysis. For example, you could aim to identify the top 10 most visited pages on the website, understand the demographic of the visitors, track how traffic changes over time (daily, weekly, or monthly trends), and determine which referral sources drive the most traffic.
* Ensure that your objectives are aligned with the overall goal of enhancing the user experience.

**Data Collection:**

* Identify the data sources you'll tap into. This might include website analytics tools like Google Analytics, server logs, or custom tracking scripts.
* Define the frequency of data collection. Will it be real-time, daily, weekly, or monthly?
* Consider data storage and retention policies. How long will you keep historical data, and what data privacy and security measures will you implement?

**Visualization:**

* Plan how you'll present the insights to stakeholders. This could involve creating interactive dashboards, reports, or data visualizations.
* Choose appropriate visualization tools. You mentioned using IBM Cognos, which is a good choice for creating meaningful reports and dashboards.
* Consider the audience for your visualizations. Tailor your reports to the needs and preferences of different stakeholders.

**Python Integration:**

* Determine which Python libraries and tools you'll use for data analysis. Libraries like Pandas, NumPy, and Matplotlib or Seaborn for data manipulation and visualization can be useful.
* Decide on the machine learning models you want to implement, if applicable. For predicting future traffic trends or user behavior, time series analysis or machine learning algorithms like regression, clustering, or classification might be relevant.
* Ensure that the integration between IBM Cognos and Python is seamless. You might need to export data from one platform to another or use APIs to connect them.

**NEXT STEPS:**

* Document your entire process, including data sources, data cleaning steps, and analysis methodologies.
* Ensure data quality and perform data cleaning as needed.
* Regularly communicate progress and findings to stakeholders.
* Address ethical and privacy considerations, especially if you are dealing with user data.

**TEAMMATES:**

RITHIKA M.S

SHANMITHA R.K

KAMALISRI C

SASANIYA S

ANITHA G