Task 1: Data Tracking and Collection

1. Key Performance Indicators (KPIs):

User Interaction and Engagement:

- Page Views
- Conversion Rate
- Average Session Duration
- Bounce Rate
- Click-through Rate (CTR)
- Shopping Cart Abandonment Rate
- User Retention Rate
- Average Order Value (AOV)

2. Data Tracking Tools or Platforms:

For data collection, we recommend using a combination of tools:

Google Analytics: For overall website analytics and user behaviour tracking.

Facebook Pixel: If utilising Facebook ads, for tracking conversions and optimising ad delivery.

YouTube Analytics: YouTube Analytics is an integral part of YouTube Studio, providing detailed statistics on video performance, audience demographics, and engagement metrics. It is native to the YouTube platform and offers valuable insights for content creators.

Twitter Analytics: Twitter provides native analytics tools for users to track the performance of their tweets and overall account engagement. It offers insights into tweet impressions, engagement metrics, and audience demographics.

Shopify Analytics: If your e-commerce store is hosted on Shopify, the built-in analytics feature provides valuable information about sales, customer behaviour, and marketing effectiveness. It offers insights tailored to e-commerce businesses.

Adobe Analytics: Adobe Analytics is an enterprise-level analytics solution that provides advanced insights into customer behaviour, conversion tracking, and marketing performance. It is suitable for large e-commerce businesses with complex analytics needs.

Data schema

Users:

- UserID (Primary Key)
- Username
- Email
- RegistrationDate
- LastLoginDate

Products:

- ProductID (Primary Key)
- ProductName
- CategoryID (Foreign Key)
- Price
- StockQuantity

Categories:

- CategoryID (Primary Key)
- CategoryName

Orders:

- OrderID (Primary Key)
- UserID (Foreign Key)
- OrderDate
- TotalAmount

OrderItems:

- OrderItemID (Primary Key)
- OrderID (Foreign Key)
- ProductID (Foreign Key)
- Quantity
- Subtotal

PageViews:

- ViewID (Primary Key)
- UserID (Foreign Key)
- PageName
- Timestamp

Events:

- EventID (Primary Key)
- UserID (Foreign Key)
- EventType
- EventCategory
- Timestamp

Task 2: Data Analysis

PDF of python file is attached with this file.

Task 3: Data Reporting

A PDF Report is attached with this file.

4. Data Schema or Structure:

For storing the collected data, we can use a simple relational database like MySQL with the following schema:

```sql
CREATE TABLE PageViews (
    ID INTEGER PRIMARY KEY,
    UserID TEXT,
    PageName TEXT,
    Timestamp TEXT
);

CREATE TABLE Events (
    ID INTEGER PRIMARY KEY,
    UserID TEXT,
    EventType TEXT,
    EventName TEXT,
    Timestamp TEXT
);

CREATE TABLE Transactions (
    ID INTEGER PRIMARY KEY,
    UserID TEXT,
    Amount REAL,
    Timestamp TEXT
);
```

In the scenario where additional data is required, we can extend the schema by adding more tables or fields. For example, if user demographics are needed, we can create a "UserDetails" table with fields like UserID, Name, Email, Age, DeviceType, etc. This additional data can enhance the analysis by providing insights into the demographics of the user base.

Task 2: Data Analysis