**OneBharat: Assignment for DS Interns hiring**

Based on the provided datasets ( Bank Statements, Office Supplies Data and Churn Modelling Data), Answer the list of questions:

**Bank Statements (P1- BankStatements.json) – 50 Marks**

**1.  Transaction Analysis:**

   - What is the total number of transactions made over the year?

   - What is the distribution of transaction amounts (e.g., small vs. large transactions)?(define small and large transactions by yourself)

   - Analyze the frequency of different transaction types (debit vs. credit).

**2.  Balance Analysis:**

   - What is the trend of the account balance over time?

   - Identify any periods with significant changes in the account balance.

**3.  Spending Patterns:**

   - What are the main categories of expenses (e.g., fuel, Ecommerce, food, shopping, ATM withdrawals, UPI transactions)?

   - Analyze the frequency and amount of spending in each category.

**4.  Income Analysis:**

   - What are the main sources of income (e.g., salary, UPI credits)?

   - Identify any patterns in the timing and amount of income received.

**5.  Alert Generation:**

   - Identify any unusual or suspicious transactions.

   - Generate alerts for low balance or high expenditure periods.

**Office Supplies Data (P2- OfficeSupplies Data.csv) – 20 marks**

**1. Sales Analysis:**

   - What are the total sales for each product category?

   - Which product category has the highest sales?

   - Identify the top 10 best-selling products.

**2.  Customer Analysis:**

   - Who are the top 10 customers by sales?

   - What is the total number of unique customers?

   - Analyze customer purchase frequency.

**3.  Time Series Analysis:**

   - What are the monthly sales trends over the past year?

   - Identify any seasonal patterns in the sales data.

**4.  Geographical Analysis:**

   - Which regions generate the most sales?

   - What are the sales trends across different regions?

**5.  Profit Analysis: - No data for Profit Analysis**

   - What is the total profit for each product category?

   - Identify the top 10 most profitable products.

**Churn Modelling Data (P3- Churn-Modelling Data.xlsx) – 30 Marks**

**1.  Customer Demographics:**

   - What is the distribution of customers across different age groups?

   - Analyze the gender distribution of customers.

**2.  Churn Analysis:**

   - What percentage of customers have churned?

   - What are the main reasons for customer churn?

   - Identify any patterns or trends among customers who have churned.

**3.  Product Usage:**

   - What are the most commonly used products or services?

   - Analyze the usage patterns of different customer segments.

**4.  Financial Analysis:**

   - What is the average account balance of customers?

   - Compare the financial characteristics of churned vs. non-churned customers.

**5.  Predictive Modeling:**

   - Which factors are the most significant predictors of customer churn?

   - Develop a predictive model to identify at-risk customers.

Prepare a comprehensive report on all the questions and share by 10th July 2024.