About Data:

The Transactions Fraud Dataset from Kaggle contains three CSV files that can be used for fraud detection and analysis in financial transactions.
Here's an overview of what these files typically include:

1. Customer Data:

- Provides details about the customers involved in the transactions.
- May include customer IDs, demographic information, account statuses, and risk scores.
- Users_data dataset contains details about users, focusing on demographics, financial information, and other attributes for analytical purposes.
- Here's a summary of its structure and potential use cases:
- Structure of the Data

1. Demographics:
    - id : Unique identifier for each user.
    - current_age, birth_year, birth_month: Age and birth details.
    - gender: Gender of the user.

2. Location:
    - address, latitude, longitude: Geographic details, useful for mapping or regional analysis.

3. Financial Information:
    - per_capita_income: Average income per person.
    - yearly_income: Total annual income.
    - total_debt: Debt information for assessing financial stability.
    - credit_score: Creditworthiness metric.
    - num_credit_cards: Number of active credit cards.

4. Retirement Planning:
    - retirement_age: Planned retirement age, possibly for evaluating savings adequacy.

2. Cards Data:

- Cards_data dataset contains detailed information about the financial cards issued users.
- This data is highly complementary to your users_data and can be joined via client_id to provide more holistic insights.
- Here's a breakdown of its structure and possible use cases:
- Structure of the Dataset

1. Identifiers:
    - id: Unique identifier for each card record.
    - client_id: Links the card record to a specific user in the users_data table.

2. Card Details:
    - card_brand: Brand of the card (e.g., Visa, Mastercard).
    - card_type: Type of card (Credit, Debit, Debit (Prepaid)).
    - card_number: The card number (masked or anonymized here).

3. Expiration and Security:
    - expires: Card expiry date (e.g., Jun-24).
    - cvv: Security code (e.g., 3-digit CVV).
    - has_chip: Whether the card has a chip (Yes/No).

4. Financial Attributes:
    - num_cards_issued: Total number of cards issued under this account.
    - credit_limit: The credit limit associated with the card.

5. Account History:
    - acct_open_date: The date when the card account was opened.
    - year_pin_last_changed: The year the PIN was last changed.
    - card_on_dark_web: Indicates if the card details have been compromise (Yes/No).

3. Transactions Data:

- Contains detailed transactional records.
- Features might include transaction amounts, timestamps, locations, payment methods, and merchant details.
- A key attribute is often the fraud label, indicating whether a transaction is fraudulent.
- This dataset has approximately 1,048,575 rows, making it suitable for various analyses, such as identifying transaction patterns, fraud detection, merchant analysis, or customer spending behavior.
- Structure of the Dataset

1. id (int): Unique transaction identifier.
    - Example: 7475327

2. date (datetime): Timestamp of the transaction, formatted as DD-MM-YYYY HH:MM.
    - Example: 01-01-2010 00:01

3. client_id (int): Unique identifier for the client associated with the transaction.
    - Example: 1556

4. card_id (int): Unique identifier for the card used in the transaction.
    - Example: 2972

5. amount (float or string): The monetary value of the transaction, including negative values (indicating refunds or reversals).
    - Example: $-77.00 or $14.57

6. use_chip (str): Indicates whether the transaction was a chip transaction or an online transaction.
    - Example: "Swipe Transaction" or "Online Transaction"

7. merchant_id (int): Unique identifier for the merchant where the transaction occurred.
    - Example: 59935

8. merchant_city (str): City where the merchant is located.
    - Example: Beulah

9. merchant_state (str): State where the merchant is located.
    - Example: ND (North Dakota)

10. zip (str): Zip code of the merchant's location.
    - Example: 58523

11. mcc (int): Merchant Category Code, which classifies the type of merchant business (e.g.,retail, restaurants).
    - Example: 5499

12. errors (int): Indicates any errors associated with the transaction.
    - Example: Blank or 5499, depending on the transaction status.

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This dataset is ideal for building machine learning models for fraud detection, exploring patterns in financial behavior, or conducting anomaly detection.
For further details or to download the dataset, visit the [dataset page on Kaggle](https://www.kaggle.com/datasets/computingvictor/transactions-fraud-datasets).