

2306aml133-kritika-assignment11

August 27, 2023

```
[18]: import pandas as pd

data = {
    'Tx': [i for i in range(20)],
    'products': [
        "MILK,BREAD,BISCUIT",
        "BREAD,MILK,BISCUIT,CORNFLAKES",
        "BREAD,TEA,BOURNVITA",
        "JAM,MAGGI,BREAD,MILK",
        "MAGGI,TEA,BISCUIT",
        "BREAD,TEA,BOURNVITA",
        "MAGGI,TEA,CORNFLAKES",
        "MAGGI,BREAD,TEA,BISCUIT",
        "JAM,MAGGI,BREAD,TEA",
        "BREAD,MILK",
        "COFFEE,COCK,BISCUIT,CORNFLAKES",
        "COFFEE,COCK,BISCUIT,CORNFLAKES",
        "COFFEE,SUGER,BOURNVITA",
        "BREAD,COFFEE,COCK",
        "BREAD,SUGER,BISCUIT",
        "COFFEE,SUGER,CORNFLAKES",
        "BREAD,SUGER,BOURNVITA",
        "BREAD,COFFEE,SUGER",
        "BREAD,COFFEE,SUGER",
        "TEA,MILK,COFFEE,CORNFLAKES"
    ]
}

df = pd.DataFrame(data)

print(df)

total_transactions = df['Tx'].nunique()
print("Total number of transactions:", total_transactions)

df['product_list'] = df['products'].str.split(',')
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unique_products = df['product_list'].explode().nunique()
print("Total number of unique products:", unique_products)

df['num_products'] = df['product_list'].apply(len)
avg_products_per_transaction = df['num_products'].mean()
print("Average products per transaction:", avg_products_per_transaction)

most_common_products = df['product_list'].explode().value_counts().head(10)
print("Most common products:")
print(most_common_products)

product_combinations = df['products'].value_counts()
print("Product combinations:")
print(product_combinations)

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Tx	products
0	0 MILK,BREAD,BISCUIT
1	1 BREAD,MILK,BISCUIT,CORNFLAKES
2	2 BREAD,TEA,BOURNVITA
3	3 JAM,MAGGI,BREAD,MILK
4	4 MAGGI,TEA,BISCUIT
5	5 BREAD,TEA,BOURNVITA
6	6 MAGGI,TEA,CORNFLAKES
7	7 MAGGI,BREAD,TEA,BISCUIT
8	8 JAM,MAGGI,BREAD,TEA
9	9 BREAD,MILK
10	10 COFFEE,COCK,BISCUIT,CORNFLAKES
11	11 COFFEE,COCK,BISCUIT,CORNFLAKES
12	12 COFFEE,SUGER,BOURNVITA
13	13 BREAD,COFFEE,COCK
14	14 BREAD,SUGER,BISCUIT
15	15 COFFEE,SUGER,CORNFLAKES
16	16 BREAD,SUGER,BOURNVITA
17	17 BREAD,COFFEE,SUGER
18	18 BREAD,COFFEE,SUGER
19	19 TEA,MILK,COFFEE,CORNFLAKES

Total number of transactions: 20
Total number of unique products: 11
Average products per transaction: 3.3
Most common products:

BREAD	13
COFFEE	8
BISCUIT	7
TEA	7
CORNFLAKES	6
SUGER	6
MILK	5

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MAGGI          5
BOURNVITA     4
COCK          3
Name: product_list, dtype: int64
Product combinations:
COFFEE,COCK,BISCUIT,CORNFLAKES    2
BREAD,TEA,BOURNVITA                2
BREAD,COFFEE,SUGER                 2
MILK,BREAD,BISCUIT                 1
BREAD,SUGER,BOURNVITA              1
COFFEE,SUGER,CORNFLAKES           1
BREAD,SUGER,BISCUIT               1
BREAD,COFFEE,COCK                  1
COFFEE,SUGER,BOURNVITA            1
BREAD,MILK                          1
BREAD,MILK,BISCUIT,CORNFLAKES     1
JAM,MAGGI,BREAD,TEA                1
MAGGI,BREAD,TEA,BISCUIT            1
MAGGI,TEA,CORNFLAKES               1
MAGGI,TEA,BISCUIT                 1
JAM,MAGGI,BREAD,MILK               1
TEA,MILK,COFFEE,CORNFLAKES        1
Name: products, dtype: int64

```