Minggu ke-11

Praktikum Association Rule

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Eksperimen dengan Data Pembelian

No_Kwitansi,Nama_Barang,Jumlah
1, cpu, 7
1, monitor, 20
1, mouse, 4
2, monitor, 9
2, meja, 4
2, cpu, 5
2, mic, 12
2, speaker, 12
3, mic, 5
3, speaker, 5
3, ram, 3
4, ram, 2
4, harddisk, 2
4, flashdisk, 8

5, speaker, 1
5, flashdisk, 5
5, cpu, 2
6, speaker, 3
6, mic, 5
6, monitor, 2
6, flashdisk, 3
7, cpu, 2
7, monitor, 5
7, meja, 2
8, monitor, 9
8, cpu, 6
8, ram, 4

Association Rule

```
import pandas as pd
from mlxtend.frequent_patterns import apriori
from mlxtend.frequent_patterns import association_rules

dataset = pd.read_csv('pembelian.csv')
transaksi = dataset.groupby(['No_Kwitansi','Nama_Barang'])['Jumlah'].sum()

transaksi = transaksi.unstack().reset_index().fillna(0).set_index('No_Kwitansi')
transaksi[transaksi>0]=1

print('Tabel Transaksi:\n', transaksi)

frequent_itemsets=apriori(transaksi, min_support=0.3, use_colnames=True)
rules=association_rules(frequent_itemsets, metric="confidence", min_threshold=0.7)

print('\nAssociation Rules:\n', rules[['antecedents', 'consequents', 'confidence']])
```

```
Tabel Transaksi:
 Nama_Barang    cpu   flashdisk   harddisk  ...   mouse   ram   speaker
No_Kwitansi                                ...
1              1.0         0.0        0.0  ...     1.0   0.0       0.0
2              1.0         0.0        0.0  ...     0.0   0.0       1.0
3              0.0         0.0        0.0  ...     0.0   1.0       1.0
4              0.0         1.0        1.0  ...     0.0   1.0       0.0
5              1.0         1.0        0.0  ...     0.0   0.0       1.0
6              0.0         1.0        0.0  ...     0.0   0.0       1.0
7              1.0         0.0        0.0  ...     0.0   0.0       0.0
8              1.0         0.0        0.0  ...     0.0   1.0       0.0

[8 rows x 9 columns]

Association Rules:
   antecedents consequents  confidence
0      ( cpu)  ( monitor)        0.80
1  ( monitor)      ( cpu)        0.80
2  ( speaker)      ( mic)        0.75
3      ( mic)  ( speaker)        1.00
```

Mlxtend (http://rasbt.github.io/mlxtend):

- conda **install** mlxtend
- conda **install** mlxtend --channel conda-forge
- pip install mlxtend
- pip install mlxtend --upgrade --no-deps

Transaction Dataset

InvoiceNo	StockCode	Qty	InvoiceDate	CustomerID	Country
537626	22725	830	12/7/10 14:57	12347	Iceland
537626	22729	948	12/7/10 14:57	12347	Iceland
537626	22195	695	12/7/10 14:57	12347	Iceland
542237	22725	636	1/26/11 14:30	12347	Iceland
542237	22729	536	1/26/11 14:30	12347	Iceland
542237	47559	919	1/26/11 14:30	12347	Iceland
542237	21154	803	1/26/11 14:30	12347	Iceland
542237	21035	532	1/26/11 14:30	12347	Iceland
…	…		…	…	…

Assignment

1. **dataset** ← transaction.csv, dan tampilkan
2. **data** ← ambillah data pada **dataset** untuk negara “Portugal”
3. **transaksi** ← ambillah kode StockCode dari **data** pada setiap transaksi (1 kode InvoiceNo = 1 transaksi), dan tampilkan
4. Carilah association rule pada **transaksi** dengan minimum support=0.2 dan minimum confidence=0.7, dan tampilkan

Pengumpulan Tugas

- Buatlah coding dengan Bahasa pemrograman/tools apapun untuk semua assignment
- Buatlah laporan dalam slide ppt. Laporan terdiri dari screenshot coding dan hasil running untuk setiap assignment.
- Simpan laporan dalam file pdf dengan format penamaan:
  DM_M11_NRP_namadepan.pdf
- Upload file tersebut di alamat ini:
  http://ridho.lecturer.pens.ac.id/lecture.php
  (Pilih Mata Kuliah : Data Mining)
- Deadline upload: Minggu, 30 Mei 2021