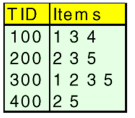
**Lab 6: Association mining**

1. **Given the following transaction set, find the frequent itemset using Apriori Algorithm. Assume Minimum support=2, confidence = 75%. Also, evaluate the Association rules. Write python code to solve this problem.**



pip install mlxtend==0.17

import pandas as pd

from mlxtend.frequent\_patterns import apriori, association\_rules

# Define transactions as a list of lists

transactions = [

    [1, 3, 4],

    [2, 3, 5],

    [1, 2, 3, 5],

    [2, 5]

]

# Convert to a one-hot encoded DataFrame

df = pd.DataFrame([[item in transaction for item in range(1, 6)] for transaction in transactions],

                  columns=[1, 2, 3, 4, 5])

# Step 1: Apply Apriori algorithm to find frequent itemsets

frequent\_itemsets = apriori(df, min\_support=2/4, use\_colnames=True)  # Minimum support = 2 (out of 4 transactions)

# Step 2: Generate association rules with minimum confidence of 75%

rules = association\_rules(frequent\_itemsets, metric="confidence", min\_threshold=0.75)

# Step 3: Drop unwanted columns (lift, leverage, conviction)

rules = rules.drop(columns=['lift', 'leverage', 'conviction', 'antecedent support',  'consequent support',  'support'])

# Step 3: Display the results

print("Frequent Itemsets:")

print(frequent\_itemsets)

print("\nAssociation Rules:")

print(rules)

1. **Given the following transaction set, find the frequent itemset using FP growth algorithm. Assume Minimum support=2, confidence = 75%. Also, evaluate the Association rules. Write python code to solve this problem.**