

# Lab Assignment 3: Implementation of FP-Growth Algorithm

Date: 01-03-2025

Duration: 2 hours

**Objective:** Implement the FP-Growth algorithm to mine frequent itemsets from a real-world dataset.

**Dataset:**  Groceries\_dataset

## Part 1: Theory

- **Task:** Explain the FP-Growth algorithm in 250–300 words.
- **Focus:** Define FP-Growth, compare it with Apriori, and describe its efficiency.

## Part 2: Practical Implementation

1. **Dataset:**
  - Download the dataset: Groceries Dataset.
2. **Preprocessing:**
  - Clean and transform the dataset into a transactional format.
3. **FP-Growth Algorithm:**
  - Implement the FP-Growth algorithm **from scratch**.
  - Set a minimum support threshold and extract frequent itemsets.
4. **Visualization:**
  - Identify the top 5 frequent itemsets and visualize them using a bar chart or graph.
  - Include a short report (1 page) summarizing your observations and results.

**Note:** Comment your code to explain the logic behind each step.