

## Problem Statement: Ferns N Petals Sales Analysis

**Project Title:** End-to-End Sales Analysis Dashboard for Ferns N Petals in Excel

### 1. Background

Ferns N Petals (FNP) is a prominent online gifting company, specializing in delivering gifts for various occasions such as anniversaries, Diwali, Holi, Rakshabandhan, birthdays, and Valentine's Day. As an online platform, FNP generates substantial sales data across its product categories, customer base, and order transactions. To maintain competitive advantage and optimize business strategies, it is crucial for FNP to thoroughly analyze its operational and sales performance.

### 2. The Challenge

FNP possesses raw sales data distributed across multiple tables, including **products**, **orders**, and **customers**, along with relevant date information. While this data exists, it is in a disparate and unstructured format, making it challenging to derive meaningful business insights efficiently. Without a consolidated and interactive analytical tool, FNP struggles to:

- Gain a clear, real-time understanding of overall sales performance and total revenue.
- Assess operational efficiency by determining average order and delivery times.
- Identify sales trends and fluctuations across different months or occasions.
- Pinpoint top-performing products, categories, and geographical markets.
- Understand customer spending patterns and preferences.
- Make data-driven decisions regarding marketing strategies, inventory management, and operational improvements.

### 3. Project Objective

The primary objective of this project is to analyze the provided Ferns N Petals sales dataset and develop a comprehensive, interactive sales dashboard within Microsoft Excel. This dashboard will serve as a powerful analytical tool, transforming raw data into actionable intelligence and empowering stakeholders with quick access to key performance indicators and insights.

### 4. Key Questions to be Addressed

The analysis and dashboard will specifically address the following business questions:

- What is the **total revenue** generated?
- What are the **average order and delivery times** for products?

- How does **monthly sales performance** fluctuate throughout the year?
- Which are the **top products by revenue**?
- What is the **average customer spending** (average order value)?
- How do **sales perform across different product categories**?
- Which are the **top 10 cities by number of orders**?
- Is there a **correlation between order quantity and delivery times**?
- What is the **revenue comparison between different occasions** (e.g., Diwali, Anniversary, Holy, Rakshabandhan)?
- Which **products are most popular during specific occasions**?
- What are the **preferred ordering patterns by hour of the day**?

## 5. Proposed Solution & Scope

The solution will involve an end-to-end data analysis process utilizing advanced Excel functionalities:

- **Data Extraction & Pre-processing:** Use **Power Query Editor** to extract data from multiple CSV files (customers, orders, products) , perform initial data cleaning (e.g., removing irrelevant columns, handling data types), and essential transformations (e.g., extracting date/time components, calculating delivery durations, merging price data from products into orders).
- **Data Modeling:** Construct a robust data model using **Power Pivot**, defining relationships between the extracted tables (Star Schema).
- **Data Analysis & Metrics:** Drive analysis using **Pivot Tables** and **DAX (Data Analysis Expressions)** within Power Pivot to create necessary calculated columns (e.g., Revenue, Day Name) and measures.
- **Interactive Dashboard:** Design a dynamic and visually appealing dashboard using **Pivot Charts**, **Slicers**, and **Timelines** to present the key insights and enable interactive data exploration.
- **Executive Summary:** Generate a concise executive summary based on the dashboard's findings, potentially leveraging AI tools.

This project aims to provide FNP with a powerful, accessible, and interactive tool for continuous sales performance monitoring and strategic decision-making.