



# Diwali Sales Data Analysis

Uncovering customer behavior and spending patterns during India's biggest festive shopping season

## Project Overview

# Understanding Festive Shopping Behavior

India witnesses massive sales spikes during Diwali. This analysis explores customer demographics, state-wise contributions, and product performance using Python-based EDA.

### Key Focus Areas:

- Customer demographics & behavior
- Geographic sales distribution
- Product category performance
- Age, gender & marital status patterns



# Analysis Objectives



## Analyze Sales Data

Perform comprehensive EDA using Python techniques



## Study Demographics

Understand customer buying behavior patterns



## Identify Top Performers

Find revenue-generating categories and locations



## Generate Insights

Create visual reports for business decisions

# Technical Stack

1

Python

Core programming language

2

Pandas & NumPy

Data manipulation & numerical operations

3

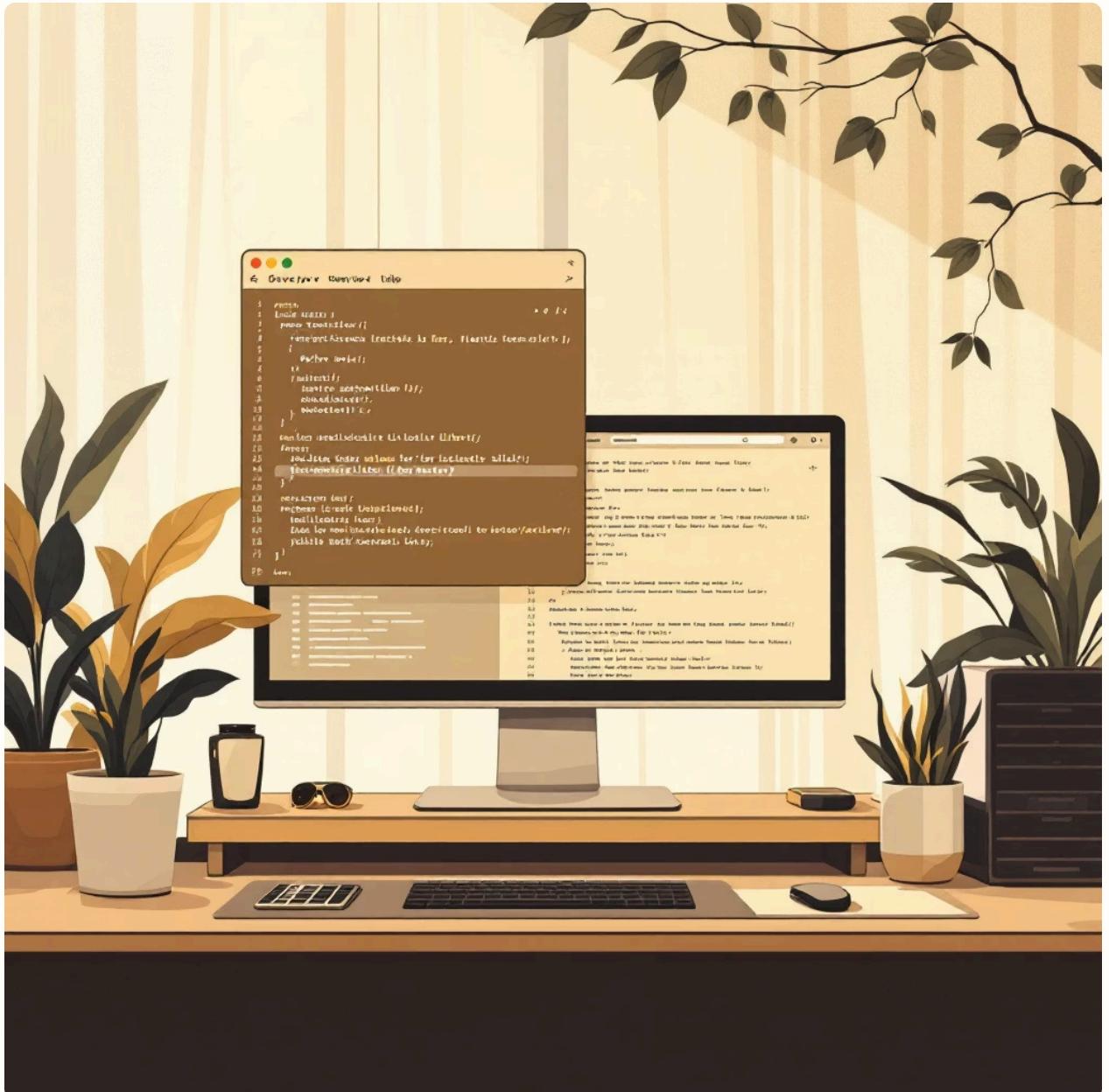
Matplotlib & Seaborn

Data visualization

4

Jupyter & ReportLab

Development & PDF automation



# Analysis Methodology



## Data Loading

Import dataset using Pandas



## Data Cleaning

Remove nulls, duplicates & irrelevant columns



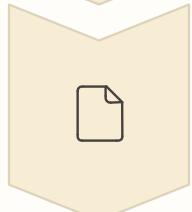
## EDA

Visual analysis by demographics & categories



## Visualization

Create charts for insights



## Report

Compile findings into PDF



# Key Findings: Customer Demographics

26-35

Age Group

Highest spending demographic during  
Diwali

♀

Gender

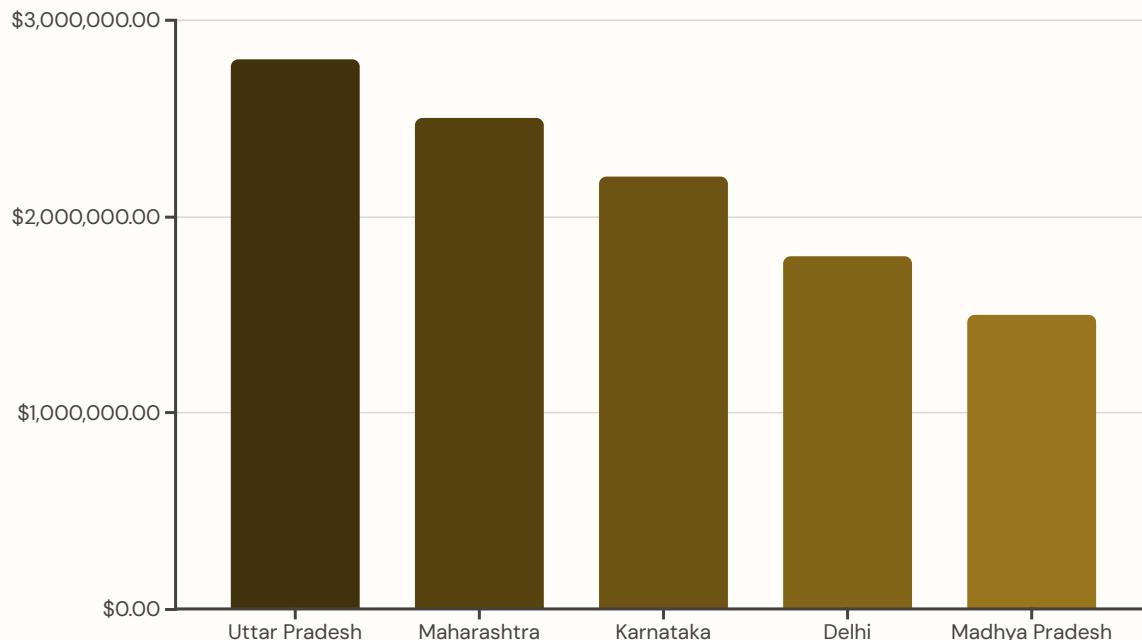
Female customers placed more orders &  
contributed higher sales



Marital Status

Married individuals bought significantly  
more

# Geographic Performance



## Top Performing States

Three states dominate Diwali sales:

- **Uttar Pradesh** — Highest revenue
- **Maharashtra** — Strong urban markets
- **Karnataka** — Tech-savvy consumers

These regions show large customer base and higher purchasing capability.

# Product Category Performance



■ Food

■ Clothing

■ Electronics

■ Home Decor

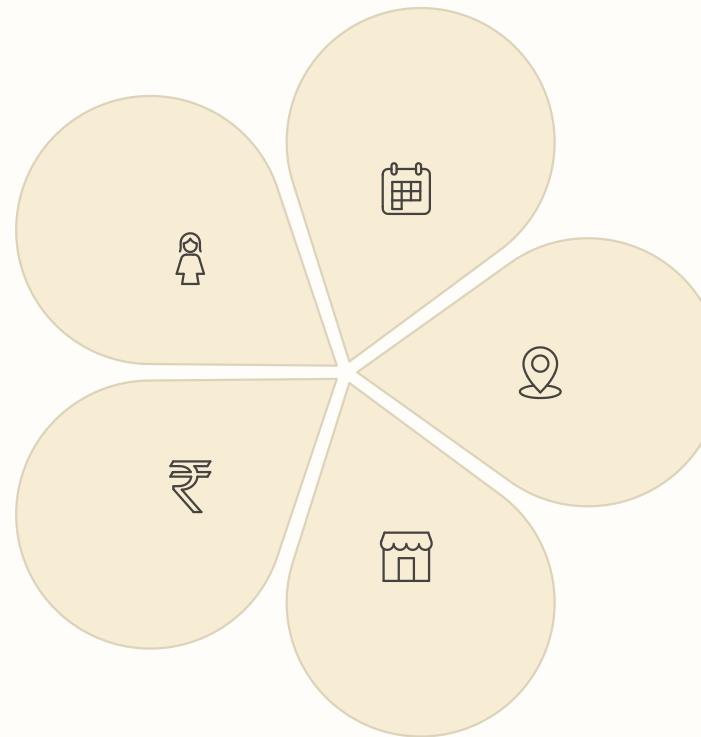
■ Others

Food leads purchases, followed by Clothing and Electronics — indicating where inventory and marketing focus should be applied.

# Primary Target Segment

**Married Women**  
Dominant consumer group

**High Spending Power**  
Maximum purchase amounts



**Age 26-35**  
Young adult demographic

**UP, Maharashtra,  
Karnataka**  
Geographic concentration

**Food & Clothing**  
Top purchase categories

# Business Implications & Recommendations

## 🎯 Marketing Focus

Target married women aged 26-35 with personalized campaigns

## 📦 Inventory Planning

Stock more Food & Clothing items for Diwali offers

## 🌐 Regional Strategy

Concentrate marketing efforts in UP, Maharashtra & Karnataka

**Conclusion:** Analysis successfully extracted purchasing trends showing married women aged 26-35 as major buyers. These insights enable businesses to design targeted strategies and improve revenue generation during festive seasons.

