

Name:Marjan ikram

Intern ID:TN/IN01/PY/010

Task no:project

Question:none



Internship Project Report

Project Title:

AI-Powered PDF Report Generator using Python

1. Objective:

To design and implement an AI-powered tool using Python that automatically analyzes customer feedback, performs sentiment analysis, and generates a professional PDF report with graphical and textual insights.

2. Tools and Technologies Used:

- **Language:**

- Python

- **Libraries:**

- pandas – for data handling
- textblob – for sentiment analysis (Natural Language Processing)
- matplotlib – for creating charts
- fpdf – for generating PDF files
- os – for file management

3. **Project Description:**

This project focuses on building a Python-based system that:

1. Takes user or system-generated feedback data.
2. Analyzes the sentiment of each feedback using TextBlob (Positive, Negative, or Neutral).
3. Visualizes the result using a bar chart with matplotlib.
4. Generates a PDF report using fpdf, which includes:
 - A summary (total feedback, count by sentiment)
 - A visual chart
 - Detailed feedback with sentiment classification

The PDF is then saved automatically in a specified folder.

4. **Key Features:**

- Uses AI sentiment scoring with Text Blob.
- Produces graphical charts to visualize sentiment distribution.
- Creates clean, formatted PDF reports.
- Automatically cleans up temporary image files after report generation.

5. **Output Example:**

A sample generated report includes:

- **Title:**
- AI-Powered Feedback Report
- **Stats like:**
 - Total Feedback: 5
 - Positive: 2
 - Negative: 2
 - Neutral: 1
- A bar chart showing sentiment count
- A list of all feedbacks with their respective sentiment types.

6. **Challenges Faced:**

- Installing Python packages correctly
- Ensuring correct file paths on Windows (dealing with spaces in folder names)
- Handling missing image issues during PDF creation
- Managing multiple file outputs (chart + PDF)

7. **What I Learned:**

- How to use AI libraries like TextBlob for basic NLP tasks
- Creating dynamic PDF reports using FPDF
- Combining data analysis, visualization, and document generation in one project
- Importance of handling file paths and exceptions properly in Python

8. **Conclusion:**

This project demonstrates how Python can be used to build an intelligent and automated reporting system. It integrates data processing, AI sentiment analysis, visualization, and PDF generation — providing a full workflow from raw input to polished report output.