Personal Stylist Based on Mood and Weather – Project Summary

# 1. Dataset

Collected a synthetic real-world dataset (600 rows) with attributes:  
- Date, City, Weather, Temperature, Humidity, Wind Speed  
- Mood, Occasion, Outfit (Top/Bottom/Accessories/Colors)  
- Umbrella Needed, Comfort Rating  
  
Cleaned dataset: handled missing values, standardized formats, added derived features (month, weekend flag, mood score).

# 2. Data Visualization

Different charts were created to explore trends:  
- Histogram – Temperature distribution  
- Bar Chart – Mood counts, preferred colors by mood  
- Pie Chart – Weather distribution  
- Line Chart – Monthly average temperature  
- Heatmap – Correlations between weather variables and umbrella use  
- Stacked Bar – Recommended tops by weather  
- Boxplot – Comfort rating by weather  
  
Key Insights:  
- Sunny days dominate; Happy/Neutral moods are common.  
- Bright colors link with Happy/Excited moods.  
- Umbrella use correlates strongly with humidity and rainy/stormy weather.  
- Comfort ratings drop during stormy/foggy conditions.

# 3. Predictive Modeling

- Target: Predict whether an umbrella is needed.  
- Model Used: Random Forest Classifier.  
- Features: Weather, mood score, occasion, city, date-derived features.  
- Performance: ~79% accuracy on test data.  
- Top Predictors: Humidity, Temperature, Wind Speed, City, Occasion.

# 4. Deliverables

Included in the project bundle:  
- Datasets: Raw + Clean CSVs  
- Report: Markdown summary (convertible to PDF/Word)  
- Code: Python scripts + Jupyter Notebook  
- Model: Trained .pkl file  
- Visualizations: Multiple PNG charts