10 Days of Python

📝 **Day 1–2: Data Handling Basics**
- Importing libraries & datasets (pandas, numpy)
- DataFrames: head(), tail(), info(), describe()
- Data cleaning: handling missing values

📝 **Day 3–4: Aggregation & Analysis**
- Grouping & sorting data (groupby(), sort_values())
- Statistical summaries (mean(), sum(), count())
- Simple predictions & percentage growth

📝 **Day 5: Formula Recall**
- Practiced 70+ Python formulas & syntax
- Covered essentials from import → cleaning → stats → visualization → modeling
- Created a one-stop reference for analytics work

📝 **Day 6: Advanced Visualizations**
- Matplotlib & Seaborn charts
- Interactive plots with Plotly
- Subplots, regression plots, pairplots
- Comparing multiple metrics in one view

📝 **Day 7: Statistical Analysis**
- Descriptive statistics (mean, median, std)
- Correlation analysis
- Hypothesis testing: t-test, ANOVA, Chi-Square
- Normality check (Shapiro-Wilk test)

📝**Day 8: Time Series Analysis**
- Date handling (to_datetime, resampling)
- Daily/weekly/monthly trends
- Rolling averages & exponential smoothing
- Trend & seasonality decomposition
- Forecasting with ARIMA
- Seasonal heatmaps

📝 **Day 9: Predictive Modeling**
- Regression Models: Linear, Multiple, Polynomial, Ridge, Lasso
- Classification Models: Logistic Regression, Decision Tree, Random Forest, KNN, SVM
- Metrics: R^2, RMSE, Accuracy, Confusion Matrix
- Cross-validation for stability

📝 **Day 10: Recap & Reflection**
- Connected the dots: Raw Data → Cleaning → Summarization → Visualization → Statistical Testing → Time Series → Predictive Modeling
- Built a complete analytics workflow