**Project Plan: Telecom Customer Churn Analysis**

**📂 Phase 1: Data Understanding & Preparation**

✅ 1. **Import & Explore Data**

* Load dataset in **Excel** & check column names
* Identify data types & missing values

✅ 2. **Data Cleaning**

* Handle **zero values** (Check if they make sense)
* Format data types properly
* Verify if **Churn** is encoded correctly (0 = No, 1 = Yes)

✅ 3. **Feature Engineering (Optional)**

* Create new columns like **Total Calls, Total Charges per Customer**
* Categorize customers based on usage

**📊 Phase 2: Exploratory Data Analysis (EDA)**

✅ 4. **Analyze Churn Trends in Excel**

* Use **Pivot Tables & Charts** to compare churned vs. non-churned customers
* Identify key patterns (e.g., Do high customer service calls lead to churn?)

✅ 5. **SQL Queries (For Deeper Insights)**

* Find **average call duration** for churned vs. non-churned customers
* Identify **top reasons for churn** based on high/low usage patterns

**🤖 Phase 3: Machine Learning Model (Python)**

✅ 6. **Load Data in Python (Pandas, NumPy, Sklearn)**  
✅ 7. **Preprocess Data** (Encoding categorical values, handling imbalanced data)  
✅ 8. **Build ML Models**

* Logistic Regression (Baseline Model)
* Decision Tree / Random Forest (For better accuracy)  
  ✅ 9. **Evaluate Model Performance**
* Use **Accuracy, Precision, Recall, F1-score**

**📈 Phase 4: Dashboard & Reporting**

✅ 10. **Power BI / Excel Dashboard**

* Visualize key insights
* Create charts for **customer churn trends, high-risk customers**

✅ 11. **Project Documentation & Conclusion**

* Summarize findings
* Suggest business actions to reduce churn