**REQUIREMENTS FILE**

**The project requires the following Python libraries, which should be installed automatically from requirements.txt:**

* **numpy==1.24.3 –** Essential for numerical computing and handling arrays.
* **pandas==1.5.3 –** Provides data structures and analysis tools, especially useful for handling datasets.
* **scikit-learn==1.2.2 –** A machine learning library for data preprocessing, classification, regression, and clustering.
* **imblearn==0.11.0 –** Used for handling imbalanced datasets, particularly for oversampling and undersampling techniques**.**
* **nltk==3.8.1 –** A natural language processing toolkit useful for text-based data analysis.
* **matplotlib==3.7.1 –** A plotting library for visualizing data trends and relationships.
* **seaborn==0.12.2 –** A statistical data visualization library built on top of Matplotlib.
* **xgboost==1.7.6 –** An optimized gradient boosting library for structured data problems.
* **lightgbm==4.1.0 –** A gradient boosting framework that is highly efficient for large datasets.
* **tensorflow==2.12.0 –** Used for deep learning applications, including neural networks (optional, if deep learning is required).
* **torch==2.0.1 –** PyTorch, another deep learning framework for flexible model building (optional, if deep learning is required).