# Software′s used in the project

• Python**:** The primary programming language used for building the predictive maintenance system and its applications. It is used for developing the logic of the system, handling data, and implementing machine learning algorithms.

• Pandas**:** A library used for data processing. It provides data structures and functions to efficiently manipulate and analyze structured data.

• NumPy**:** Another library used for data processing, particularly for numerical operations. It is essential for handling arrays and performing mathematical calculations on data.

• Joblib**:** Joblib is generally used in Python for pipelining tasks and caching, which can be useful for optimizing the machine learning processes.

• Streamlit**:** This framework is used for deploying the predictive maintenance system by creating interactive web applications and dashboards. It allows for easy visualization of data and model predictions, providing a user-friendly interface for interacting with the system.

• Random**:** In Python, it is typically used for generating random numbers, which might be used for tasks like initializing parameters or shuffling data.

• Time**:** Similar to `Random`, the document doesn't detail the use of the `time` library. This library is generally used for working with time-related functions, such as measuring execution time or handling time series data.

• VS **Code:** This is used as the primary Integrated Development Environment (IDE) or workbench for writing, editing, and debugging the Python code of the project.

• Python **3.8:** This specific version of Python is mentioned as the technology used for the project, indicating the development environment's Python version.

• Scikit**-learn:** This library is employed for implementing various machine learning algorithms used in the predictive maintenance system. It provides tools for tasks such as classification, regression, and model selection.

• MLflow**:** This platform is integrated into the system for tracking the performance of machine learning models and monitoring their behavior over time. It helps in managing the machine learning lifecycle, including experimentation, reproducibility, and deployment.

• PyCharm**:** This IDE is used for developing, uploading, and debugging the code specifically for the Aircraft Maintenance and Predictive System.