

Software Requirements

- **Programming Language:** Python 3.8 or higher
- **Libraries:** Pandas, NumPy, scikit-learn (for ML), NLTK (for preprocessing), Matplotlib & Seaborn (for visualization), TensorFlow / PyTorch, Transformers (for BERT)
- **IDE:** Jupyter Notebook or Google Colab for interactive development
- **OS:** Cross-platform (Windows, Linux, macOS)

Hardware Requirements

- **Processor** – Minimum Intel i5 or equivalent (recommended: Intel i7 or better for deep learning).
- **RAM** – At least 8 GB (recommended: 16 GB+ for efficient model training).
- **Storage** – 2 GB of free space for datasets and dependencies.
- **GPU (Optional but recommended)** – NVIDIA GPU with CUDA support for training deep learning models faster (especially when using BERT).

System Architecture

