Reflection (5 points)

Q1: What was the most challenging part of the workflow? Why?
The most challenging part of the AI development workflow was the **data preprocessing and feature engineering** stage. This step required cleaning and structuring raw data into a usable format while ensuring that it retained meaningful information for training the model. It was difficult because the data often contained missing values, inconsistencies, and irrelevant features that affected the model's performance. Identifying and applying the right preprocessing techniques—such as normalization, encoding, and outlier removal—demanded careful analysis and experimentation.

Q2: How would you improve your approach with more time/resources?
With more time and resources, I would improve the workflow by **automating data preprocessing** using scalable tools (like pandas profiling or AutoML pipelines). I would also allocate more time to **hyperparameter tuning** and use advanced optimization methods (like Bayesian optimization) to boost model accuracy. Additionally, I would implement **continuous model monitoring** to detect performance drift and maintain reliability over time.

AI Development Workflow Flowchart

AI Development Workflow