Project Objectives

This project aims to develop a machine learning model capable of predicting whether an e-commerce order will reach the customer on time (Yes/No) based on various features. The model will utilize historical order data containing information such as warehouse location, shipping method, customer history, product details, and past delivery performance.

The successful completion of this project will:

- Improve customer satisfaction: By accurately predicting on-time delivery, companies can set realistic customer expectations and take proactive measures to avoid delays.
- Optimize logistics: The model can inform decisions about resource allocation, route planning, and priority handling for time-sensitive orders.
- Reduce operational costs: By identifying potential delays early, companies can take corrective actions to minimize costs associated with missed delivery windows.
- Enhance data-driven decision making: The project will provide valuable insights into factors impacting on-time delivery, allowing for evidence-based decision making.

This report will detail the development process of the machine learning model, including:

- Data exploration and pre-processing
- Feature engineering and selection
- Model training and evaluation with different algorithms
- Model performance analysis and selection of the best performing model
- Interpretation of the model's results for identifying key drivers of on-time delivery

This project will ultimately contribute to a more efficient and customer-centric e-commerce delivery experience.