* **PPT Presentation Preparation:**

1. Scope of the project:

* **Predictive Analytics**: Develop a model to predict accurate delivery times based on historical data and external factors (e.g., weather, traffic).
* **Optimization**: Improve the efficiency of delivery routes and scheduling, reducing delays and optimizing logistics.
* **Real-Time Monitoring**: Integrate real-time data (e.g., traffic, weather) to update delivery predictions dynamically.
* **Customer Satisfaction**: Enhance customer experience by providing reliable delivery estimates and notifications.
* **Data Integration**: Combine multiple data sources like order details, geographical information, and third-party logistics data for a comprehensive prediction system.
* **Scalability**: Ensure the model can scale to handle large e-commerce platforms with various product types and delivery scenarios.
* **Impact on Business**: Contribute to cost reduction in logistics, improved delivery performance, and increased customer retention.

1. Objectives:

* **Objective:** Develop machine learning models to predict product delivery timeliness.
* **Goals:**
  + Enhance **customer satisfaction** by ensuring timely deliveries.
  + Optimize **logistics processes** to reduce delays and improve efficiency.
  + Analyze factors influencing delivery times and customer behavior.
* **Focus Areas:**
  + Build predictive models to determine on-time delivery probability.
  + Study key factors affecting delivery performance.
  + Understand customer preferences and behavior patterns related to delivery.

1. Steps to follow

* Define Objectives: Clearly outline the goals and deliverables of the project.
* Data Collection: Gather historical delivery data, order details, and external factors like weather and traffic.
* Requirement Analysis: Identify technical and operational requirements for model development and integration.
* Model Selection: Choose appropriate algorithms and tools for predictive analysis.
* Data Preprocessing: Clean, organize, and transform data for training and testing the model.
* Model Development: Build and train the predictive model using machine learning techniques.
* Testing & Validation: Evaluate the model's accuracy and performance with test datasets.
* Integration: Deploy the model within the e-commerce platform or logistics system.
* Monitoring & Updates: Continuously monitor performance and update the model with new data.
* Documentation & Reporting: Prepare detailed project reports and documentation for stakeholders.

1. Dataset Overview

* ID:ID Number of Customers
* Warehouse\_block:The Company have big Warehouse which is divided into block such as A,B,C,D,E
* Mode\_of\_Shipment:The Company Ships the products in multiple way such as Ship, Flight and Road
* Customer\_care\_calls:The number of calls made from enquiry for enquiry of the shipment
* Customer\_rating:The company has rated from every customer. 1 is the lowest (Worst), 5 is the highest (Best)
* Cost\_of\_the\_Product:Cost of the Product in US Dollars
* Prior\_purchases:The Number of Prior Purchase
* Product\_importance:The company has categorized the product in the various parameter such as low, medium, high
* Gender:Male and Female
* Discount\_offered:Discount offered on that specific product
* Weight\_in\_gms:It is the weight in grams
* Reached.on.Time\_Y.N:It is the target variable, where 1 Indicates that the product has NOT reached on time and 0 indicates it has reached on time

1. Data Preprocessing
2. Exploratory Data Analysis
3. Model Selection
4. Model Training and Testing
5. Deployment
6. Results and Insights
7. User Interface
8. Power BI Dashboard
9. Challenges and Future Work
10. Conclusion