# Bank Customer Complaint Analysis for Efficient Dispute Resolution

## Leveraging NLP for Enhanced Customer Satisfaction

This presentation outlines the development of an NLP model for bank customer complaint analysis to streamline dispute resolution processes and enhance customer satisfaction.

# Data Description

- Data Components:
  a. Complaint Number: Unique identifier.
  b. Product: Categorized into credit reporting, debt collection, mortgages, credit cards, and retail banking.
  c. Narrative: Textual customer dispute details submitted to the CFPB.
- Importance: Understanding the key elements of the complaint data for effective analysis.

# Background

- Role of CFPB: Acts as mediator between financial institutions and consumers for dispute resolution.
- NLP Requirement: Enhance efficiency and accuracy in handling complaints using NLP models for automatic classification and routing.
- Project Goal: Develop NLP model for bank customer complaint analysis leveraging historical data from CFPB website.

# Objective

- Project Objective: Develop an NLP model for bank customer complaint analysis.
- Key Goal: Automate complaint classification to predefined categories for efficient dispute resolution.
- Expected Impact: Enhancing customer satisfaction through timely and accurate handling of complaints.

# Key Components

Data Collection and Preprocessing:
- Gather historical data, preprocess narratives, and tokenize for analysis.

Classification Model Development:
- Utilize NLP techniques like logistic regression, random forests, or deep learning architectures for classifying complaints.

Model Training and Evaluation:
- Train and evaluate the model using metrics like accuracy, precision, recall, and F1-score.

Routing and Resolution:
- Implement a mechanism to route classified complaints to the relevant teams for resolution.

Feedback Mechanism:
- Establish a feedback loop for iterative model and process improvement.

# Expected Outcomes

- Trained NLP Model: Accurate categorization of complaints.
- Automated Routing: Efficient resolution based on classifications.
- Improved Efficiency: Timely and accurate handling leading to enhanced customer satisfaction.

# Deliverables

- Preprocessed Dataset:
  - Historical complaints with labeled product classes.
- Trained Classification Model:
  - Accompanied by evaluation results.
- Implemented Routing Mechanism:
  - Automation for complaint resolution.
- Report:
  - Summarizing findings, insights, and optimization recommendations.

# Conclusion

- Project Impact: Elevating dispute resolution capabilities using NLP.
- Automation Benefits: Improved efficiency, accuracy, and customer satisfaction.
- Future Recommendations: Ongoing optimization for continual enhancement in the banking sector's customer complaint analysis and resolution processes.