**Team Number:** 61

**Team Members:** Amisha Singh.
Anushka Vighe.
Pranita Mohite.

**Theme Chosen:** Machine Learning - based fraud detection system

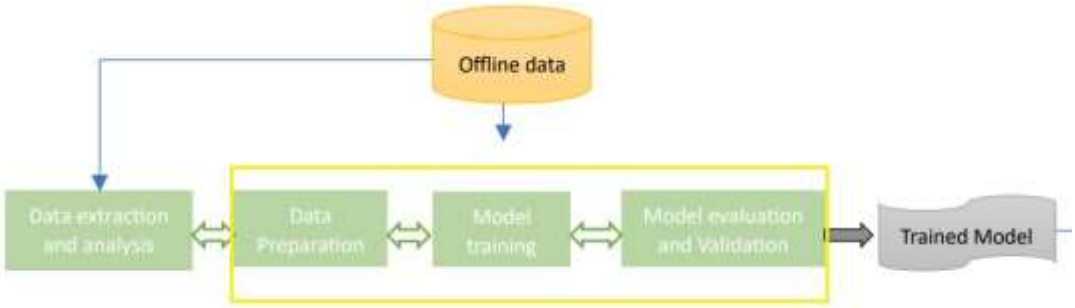
**Problem Statement:** Medicare Provider Fraud Detection using Machine learning

**Abstract:**

The proposed project focuses on developing a machine learning-based fraud detection system for Medicare providers. Healthcare fraud in Medicare involves billing for services not provided, submitting duplicate claims, misrepresenting services, charging for more expensive procedures than performed, and billing for non-covered services. This increases healthcare costs, impacts insurance companies, and raises premiums. Preventing fraud is vital for affordable and accessible healthcare.

The project aims to predict potentially fraudulent providers based on their filed claims and identify key variables that indicate fraudulent behavior. Additionally, it will analyze fraudulent patterns in provider claims to gain insights into future behavior.

**High-Level Architecture:**




**Implementation Plan:**

**Goal:** To develop a machine learning-based fraud detection

1. Data Collection and Exploration
2. Data Analysis (understand the data distribution, missing values, and potential challenges) and Preprocessing (handling missing values, outliers, and data normalization)
3. Feature Engineering (Extract and engineer meaningful features from the datasets to enhance model performance)
4. Create New features (based on domain knowledge and data analysis to capture relevant information that can help identify fraudulent patterns)
5. Model Selection (e.g., logistic regression, random forest, XGBoost) and Training
6. Model Evaluation and Optimization
7. Fraudulent Pattern Analysis

As a team of three members we'll define Team Roles and Responsibilities and regularly monitor time and performance in order to give our best!