Problem Statement 1: Green Finance Optimization Platform

Track: Sustainability, Finance, and Technology

Objective:
Create an AI-powered platform that evaluates, prioritizes, and optimizes green finance investments, helping banks and financial institutions allocate capital to the most impactful and sustainable projects.

Description:
Green finance has become essential for achieving sustainability goals, but financial institutions face challenges in assessing which projects will have the highest environmental, social, and governance (ESG) impact. This platform will use AI and data-driven insights to:

1. Score projects based on their sustainability impact Optimize resource allocation across multiple projects to maximize ESG outcomes while staying within budget constraints.
2. Predict future risks associated with green investments

Tasks:

1. **Data Collection and Processing:**
    - Aggregate ESG data from government sources, NGOs, and financial institutions.
    - Include climate data (e.g., rainfall, emissions), economic metrics, and project-specific KPIs.
2. **Project Scoring and Analysis:**
    - Develop an AI model to evaluate projects based on predefined ESG metrics.
    - Use techniques like Natural Language Processing (NLP) to extract insights from unstructured reports.
3. **Optimization Engine:**
    - Use linear programming or mixed-integer programming to maximize ESG impact under constraints like budget and risk tolerance.
    - Incorporate portfolio theory to diversify green finance investments.
4. **Dashboard for Stakeholders:**
    - Provide visualizations of project rankings, potential ROI, and ESG scores.
    - Enable scenario analysis to explore the impact of different investment strategies.

Problem Statement 2: Real-Time Credit Risk Assessment Using Alternative Data

Track: Analytics, Finance

Objective:
Develop a system that assesses credit risk in real time by analyzing traditional financial data and alternative data sources like social media, utility payments, and spending habits.

Description:
Many individuals lack sufficient credit history to access traditional lending products, despite having steady income or positive financial behavior. This solution will:

1. Aggregate and process alternative data sources alongside traditional credit information.
2. Use machine learning models to predict creditworthiness.
3. Provide lenders with transparent, explainable credit risk scores.

Tasks:

1. Build a pipeline to collect and integrate alternative data sources, such as social media sentiment, geolocation data, and utility payment records.
2. Train a machine learning model to predict default risk using a combination of traditional and alternative features.
3. Ensure explainability.

Problem Statement 3: Secure Cloud-Native Solutions for Financial Institutions

Track: Cloud-Native Security Frameworks

Challenge:
Develop innovative and secure cloud-native solutions tailored to the evolving needs of financial institutions. The goal is to ensure robust data privacy, integrity, and compliance within the dynamic cloud environment while enabling scalability and flexibility.

Key Areas of Focus:

- Data Security
- Compliance
- Threat Mitigation
- Resilience and Scalability
- Ease of Implementation
- Flexibility