IBM Assistnace Hackathon Project Proposal

Project Title: RiskGPT

1. Objective:

To create an AI-powered conversational assistant that analyzes real-time weather, economic, and operational risks to inform businesses about potential supply chain disruptions in a simple and actionable manner.

2. Why It's Important for Supply Chains and Businesses

Proactive Risk Management:

Helps businesses predict and prepare for delays in transportation, production, and delivery caused by adverse weather, economic volatility, or operational challenges.

Minimizes Financial Loss:

Supply chain disruptions can lead to lost revenue and increased costs. RiskGPT provides early warnings, enabling businesses to adjust their operations.

Improved Decision-Making:

Converts complex data into actionable insights, allowing managers to make informed decisions quickly.

Real-Time Adaptability:

Businesses can respond dynamically to real-time events (e.g., storms, inflation surges, strikes).

Saves Time and Resources:

Automates risk analysis, eliminating the need for manual monitoring of weather, news, and economic reports.

3. How It's Built Using Existing Models

Weather Risks:

Threshold-based rules for severe weather (e.g., rainfall > 100 mm).

Integration with APIs like OpenWeather for geospatial and forecasted weather data.

Economic Risks:

Time-Series Models:

Facebook Prophet or ARIMA for GDP and inflation volatility predictions.

Prebuilt Economic APIs:

World Bank, IMF, or Bloomberg for real-time data.

Operational Risks:

Sentiment Analysis:

Hugging Face models like RoBERTa or DistilBERT for news sentiment scoring.

Pretrained models for keyword detection (e.g., "strike," "protest," "industrial accident").

DialoGPT for Conversational AI:

Fine-tuned to respond in a user-friendly way, using output from the risk analysis pipeline.

4. Core Features:

Weather Risk Analysis:

Assesses weather data for disruptions like heavy rain, hurricanes, or extreme heat.

Real-time alerts for transportation and production risks.

Economic Risk Monitoring:

Analyzes GDP trends, inflation data, and currency fluctuations.

Detects anomalies in economic data affecting supplier pricing or availability.

Operational Risk Sentiment:

Processes news articles to detect potential operational risks (e.g., strikes, industrial accidents).

Uses sentiment analysis to classify risks as "high," "medium," or "low."

Conversational Explanations:

Risk predictions are summarized and explained by a conversational AI, enabling easy understanding for non-technical users.