User Story: Risk Hunter Risk Signal Generation Website

User story one

User Persona:

- **Name**: Sarah, Financial Analyst
- **Age**: 32
- **Background**: Sarah has a background in economics and finance, with 5 years of experience in analyzing currency markets. She uses various data sources to assess risks and opportunities in foreign exchange trading.

Title:

As a financial analyst, I want to receive timely risk signals for exchange rate fluctuations, so that I can make informed investment decisions.

Description: I am a financial analyst who monitors exchange rate movements to assess potential risks and opportunities in the foreign exchange market. To improve my decision-making, I need a website that leverages machine learning models to generate risk signals based on a combination of economic indicators and external factors such as:

Foreign exchange reserve (to measure a country's ability to stabilize its currency)

Oil prices(since crude oil is closely linked to currency fluctuations, especially for oil-exporting/importing nations)

TED spread (as an indicator of credit market stress, which influences exchange rate stability) US Dollar Index (to gauge overall dollar strength against a basket of major currencies)

Interest rates on government bonds (since interest rate differentials impact capital flows and currency values)

Trade and foreign exchange data (to assess the balance of payments and capital movements)

Latest financial news and geopolitical events (to incorporate real-time market sentiment)

The website should not only generate alerts when significant exchange rate risks are detected but also provide an **explanation** of why these risks arise, incorporating insights from financial news and using **large language models** to analyze trends and sentiments from the latest news sources.

Story:

Sarah, a 32-year-old financial analyst, had always relied on traditional economic models and news sources to assess currency market risks. With five years of experience, she knew that exchange rate fluctuations could be driven by multiple factors—some predictable, others completely unexpected. However, as financial markets

became more complex and geopolitical events sent shockwaves through the global economy, Sarah found it increasingly difficult to keep up with real-time risks.

One evening, as she analyzed foreign exchange trends, she noticed an unusual spike in volatility in several emerging market currencies. The usual data sources—macroeconomic reports, oil price indices, and bond yields—offered conflicting signals. Frustrated, she thought, *If only there was a tool that could instantly analyze all these factors and explain what's really happening.*

That's when she discovered the **Intelligent Exchange Rate Risk Analysis Platform**.

She logged in and was immediately presented with a clean dashboard summarizing key economic indicators. A flashing risk alert caught her attention:

> **High Risk: Foreign exchange reserves in key markets are declining, and oil price fluctuations signal potential currency instability.**

Intrigued, Sarah clicked for more details. The platform, powered by advanced machine learning, had detected correlations between declining foreign exchange reserves, rising TED spreads, and sudden shifts in the US dollar index.

But what truly impressed her was the **explanation module**. Instead of complex technical jargon, the platform used large language models to summarize breaking news.

> "*Recent geopolitical tensions in the Middle East have caused a surge in oil prices, leading to reduced liquidity in emerging market currencies. Investors are seeking safer assets, strengthening the US dollar and weakening local currencies.*"

Sarah nodded. This insight matched her intuition, but the system had provided her with data-backed confirmation within seconds—something that usually took her hours of research.

Armed with this knowledge, she adjusted her forex strategy. Instead of executing a risky trade, she advised her clients to hedge their positions. Later that week, as the market turmoil unfolded just as the platform had predicted, she realized how powerful this tool had become in her decision-making.

Feeling confident, Sarah shared her experience with colleagues, who were equally impressed. Soon, the **Intelligent Exchange Rate Risk Analysis Platform** became an essential part of her daily workflow, allowing her to stay ahead in the fast-moving world of forex trading.

User Story Two

User Persona:

- **Name:** Zhao, University Student & Novice Trader
- **Age:** 22
- **Background:** Zhao is a university student who recently started trading in both virtual currencies and foreign exchange. He finds most trading platforms overwhelming due to their complex charts and technical indicators. He wishes for a tool that provides clear, beginner-friendly risk assessments to help him trade with confidence.

Title:

As a beginner in forex and crypto trading, I want an intelligent assistant that explains exchange rate risks in simple terms so that I can make more confident trading decisions.

Description:

Zhao struggles with traditional trading applications that are designed for professional traders. He needs a website that uses **machine learning models** to generate **risk signals for exchange rates** based on a combination of key economic indicators, including:

- **Foreign exchange reserves** (to measure a country's ability to stabilize its currency)
- **Oil prices** (since oil price fluctuations impact currency stability, especially for oil-exporting/importing countries)
- **TED spread** (an indicator of credit market stress that influences exchange rate stability)
- **US Dollar Index** (to gauge overall dollar strength against other major currencies)
- **Government bond interest rates** (as interest rate differences affect capital flows and currency values)
- **Trade and foreign exchange data** (to assess global capital movement and market balance)
- **Latest financial news and geopolitical events** (to factor in real-time market sentiment)

This website should not only generate alerts when significant exchange rate risks arise but also **explain the reasoning behind these risks** by integrating **large language models (LLMs)** that summarize real-time financial news and provide easy-to-understand insights.

Story:

Zhao sat at his dorm room desk, staring at a forex trading app filled with unfamiliar graphs, flickering price changes, and confusing technical indicators. His interest in currency trading had started when he made a small profit trading virtual currencies. Encouraged by his success, he wanted to try forex trading, but every app he used seemed designed for professional traders.

"*These charts make no sense... I just need someone to tell me if it's a bad time to exchange my money!*" he sighed.

While browsing the internet for a beginner-friendly solution, he found the **Intelligent Exchange Rate Risk Analysis Platform**. Curious, he signed up and logged in. The interface was simple—no overwhelming charts, just a **clear dashboard** showing real-time exchange rate trends and risk alerts.

Suddenly, a **risk signal notification** popped up:

> **High Risk: The US dollar is strengthening due to a sharp increase in oil prices and a decline in foreign exchange reserves in emerging markets.**

Zhao clicked for more details. The system **analyzed multiple economic indicators**, detecting a pattern: the TED spread was rising, signaling credit market stress, while the US dollar index surged due to increased global demand for safe assets.

But what really caught his attention was the **news summary module**. The website used an **AI-driven language model** to summarize the latest financial news in simple terms:

> *"Recent geopolitical tensions have led to an oil supply shortage, causing prices to rise. This has strengthened the US dollar while weakening emerging market currencies. As a result, foreign exchange reserves are declining, making short-term forex trading riskier."*

Zhao finally understood what was happening. Instead of making a blind trade, he decided to **hold off on exchanging his money**, waiting for a better opportunity.

A few days later, as he monitored the market, he saw that the platform's prediction had been correct—exchange rates had shifted just as expected. Excited by this new tool, Zhao started using it daily, **learning more about forex trading through AI-powered explanations** rather than struggling with complex charts.

Confident in his decisions, he even introduced the platform to his friends, who were also new to forex trading. With the **Intelligent Exchange Rate Risk Analysis Platform**, Zhao no longer felt lost—he finally had an AI assistant that could "speak his language" and help him trade smarter.

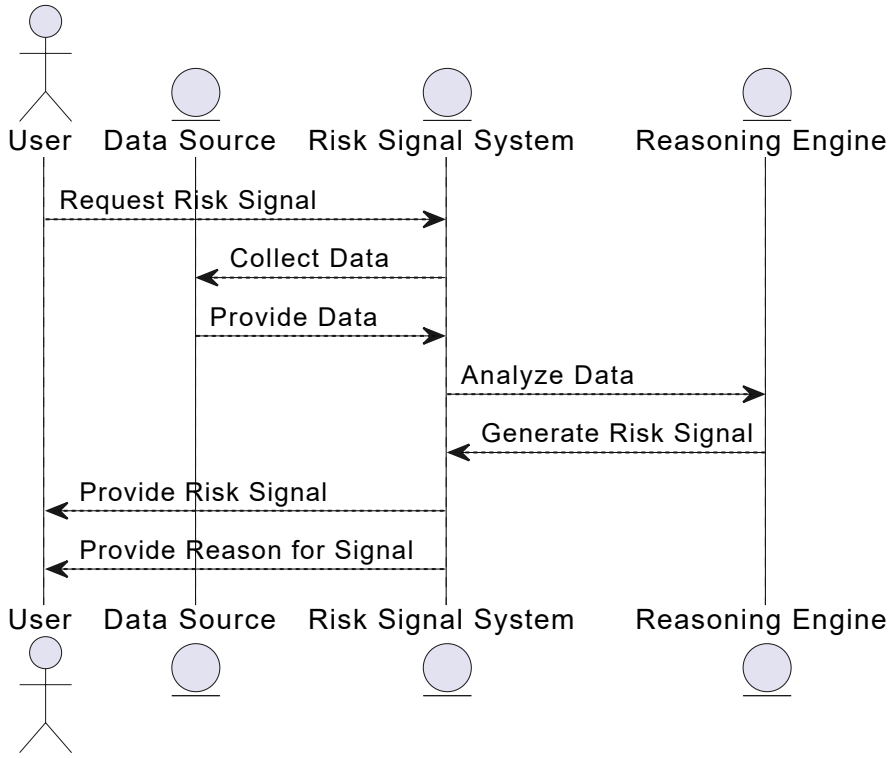
Acceptance Criteria:

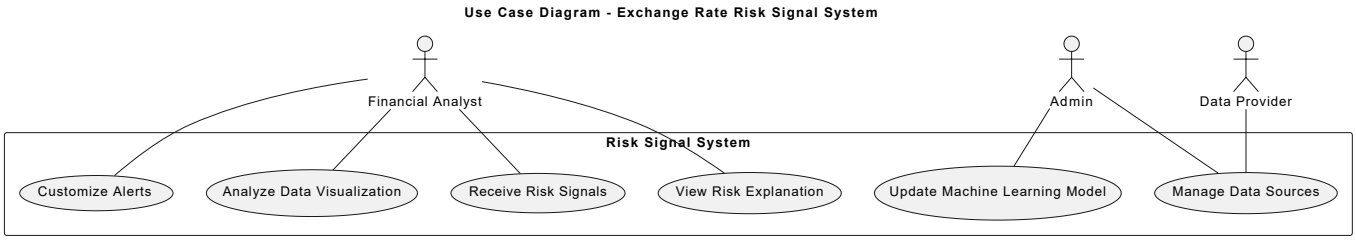
1. **Data Integration**: The website should integrate data from various sources, including foreign exchange reserves, oil prices, and other economic indicators.
    - *Given* that Sarah accesses the website,
    - *When* the data is updated,
    - *Then* she should see real-time information reflecting the current state of these indicators.
2. **Machine Learning Model**: The website should utilize a machine learning model to assess the risk associated with exchange rate fluctuations based on the integrated data.
    - *Given* that the machine learning model has been trained on historical data,
    - *When* new data is processed,
    - *Then* Sarah should receive risk signals (e.g., low, medium, high) indicating the volatility of the exchange rates.
3. **Risk Analysis Reports**: The website should provide detailed reports that explain the risk signals generated, including the contributing factors based on the latest news and trends.
    - *Given* that Sarah clicks on a risk signal,
    - *When* the report is generated,
    - *Then* she should see an analysis that includes data-driven insights and references to relevant news articles.
4. **User-Friendly Interface**: The website should have a user-friendly interface that allows Sarah to easily navigate between different features, such as viewing risk signals, accessing reports, and exploring historical data trends.
    - *Given* that Sarah logs into the website,
    - *When* she navigates through the interface,
    - *Then* she should find it intuitive and easy to access the information she needs.

5. **Notifications & Alerts**: The website should offer an alert system that notifies Sarah of significant changes in risk signals or critical news updates affecting exchange rates.
    - *Given* that Sarah sets her preferences for alerts,
    - *When* a significant change occurs,
    - *Then* she should receive a notification via email or through the website dashboard.
6. **Customization Options**: The website should allow Sarah to customize the parameters of the machine learning model and the data sources she wants to include in her analysis.
    - *Given* that Sarah wants to focus on specific indicators,
    - *When* she adjusts her settings,
    - *Then* the risk signals and analyses should reflect her customized preferences.

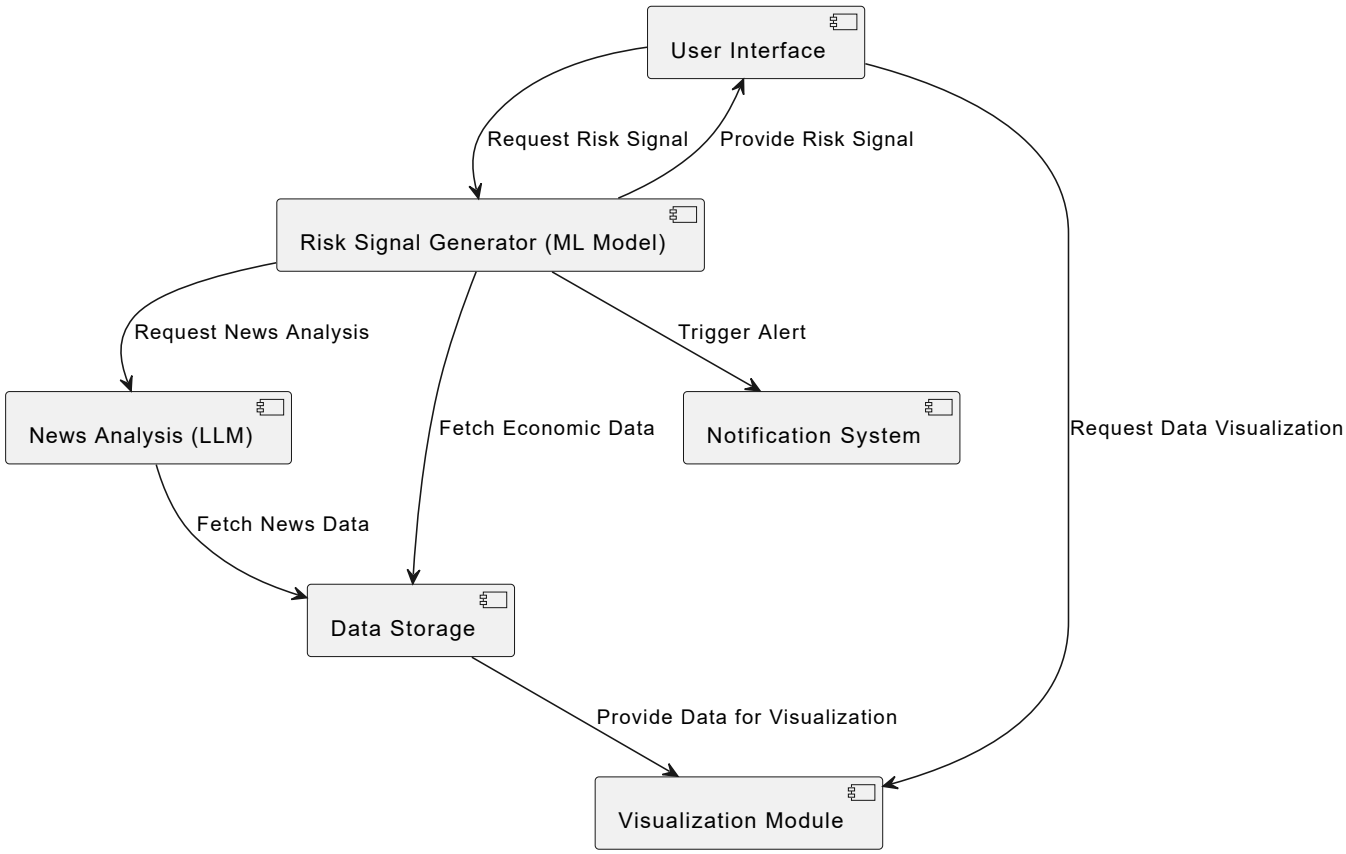
Conclusion:

This user story highlights the essential features of a website designed to generate risk signals about exchange rates using a machine learning model. By addressing the needs of financial analysts like Sarah, the platform aims to provide valuable insights and foster informed decision-making in the dynamic world of currency trading.





Component Diagram - Exchange Rate Risk Signal System



Activity Diagram - Risk Signal Generation