**Hackathon Problem Statement: AI-Powered CIBIL Score System for Macro Finance Businesses**

## **Problem Context:**

In the macro-finance industry, credit risk assessment is crucial for making informed lending decisions. Traditional CIBIL score systems primarily cater to individual borrowers and large businesses, often overlooking emerging enterprises, MSMEs, and startups that lack extensive credit history. This creates challenges for financial institutions, NBFCs, and fintech companies in assessing the creditworthiness of these businesses.

With advancements in AI and machine learning, an intelligent **CIBIL-like credit scoring system** tailored for macro-finance businesses can enhance risk assessment, expand financial inclusion, and improve lending efficiency

## **Problem Statement:**

Develop an **AI-powered CIBIL Score System** that evaluates the creditworthiness of macro-finance businesses, including MSMEs, startups, and high-risk enterprises, by leveraging alternative financial data, transaction patterns, and predictive analytics. The system should:

1. **Enhance Credit Scoring Accuracy** – Move beyond traditional CIBIL score methodologies by integrating AI/ML techniques to analyse financial transactions, cash flows, business growth, and external economic factors.
2. **Leverage Alternative Data Sources** – Utilize banking transaction history, GST filings, e-commerce sales, supplier payments, digital invoices, and even social media business activity to build a comprehensive credit score.
3. **Enable Real-time Credit Scoring** – Provide instant, AI-generated credit scores based on real-time financial behavior and macroeconomic indicators.
4. **Improve Financial Inclusion** – Ensure that creditworthy businesses without traditional credit history still receive fair financial assessment and access to loans.
5. **Predict Loan Default Risks** – Implement risk prediction models that analyze past patterns and forecast the likelihood of loan defaults for macro-finance businesses.
6. **Ensure Regulatory Compliance** – Align with financial regulations, including RBI, SEBI, and global best practices, ensuring ethical and transparent AI-driven decision-making.
7. **Provide an Explainable AI Model** – Allow financial institutions to understand the decision-making process, ensuring trust and compliance in lending operations.

## **Expected Features & Functionalities:**

**1. Data Ingestion & Processing:**

* Collect financial data from sources like bank statements, tax returns, transaction logs, and supply chain records.
* Integrate AI-based Natural Language Processing (NLP) to extract insights from business contracts, social media, and online reviews.

**2. AI-Powered Credit Scoring Engine:**

* Use ML models like **Random Forest, XGBoost, and Neural Networks** to calculate credit scores dynamically.
* Apply clustering techniques to classify businesses into **low-risk, medium-risk, and high-risk** categories.

**3. Risk Assessment Dashboard:**

* Provide a **visual representation** of financial health, creditworthiness trends, and risk factors.
* Generate **real-time credit reports** with justifications for score changes.

**4. Explainable AI (XAI) Module:**

* Ensure **transparency** by explaining why a business was assigned a particular credit score.
* Highlight **key financial indicators** influencing the score.

**5. API for Integration with Banks & FinTechs:**

* Offer **APIs** that financial institutions can integrate into their existing systems for **instant credit assessment**

## **Impact & Benefits:**

1. **Faster Loan Approvals** – Automates credit evaluation, reducing manual effort and processing time.
2. **More Inclusive Financing** – Supports businesses that lack traditional credit history but have strong financial performance.
3. **Reduced Default Rates** – Predicts potential risks early, allowing financial institutions to take preventive actions.
4. **Scalability & Adaptability** – Can be used by banks, NBFCs, fintech startups, and alternative lenders.

**Judging Criteria for Hackathon:**

* **Innovation & Technical Feasibility** – Unique AI approaches to enhance credit scoring
* **Business Impact** – How well the solution addresses the problem for macro-finance businesses.
* **Data Utilization** – Efficient use of structured and unstructured financial data.
* **Scalability & Practical Implementation** – Potential to integrate with real-world financial systems.
* **User Experience & Dashboard Design** – Ease of use for financial institutions and businesses.

## **Final Deliverables:**

🔹 AI-powered CIBIL score system prototype  
🔹 Model training & evaluation metrics (e.g., **ROC-AUC, MAE, F1-score**)  
🔹 Risk assessment dashboard UI  
🔹 API documentation for integration  
🔹 Presentation of solution with demo

## **References:**

1. **CIBIL Scoring System:** [TransUnion CIBIL](https://www.cibil.com/)
2. **Alternative Credit Scoring:** [World Bank Report on Credit Scoring](https://www.worldbank.org/en/publication/gfdr/gfdr-2016/background/credit-scoring)
3. **AI in Financial Risk Management:** [**MIT Sloan**](https://mitsloan.mit.edu/ideas-made-to-matter/topics/risk-management)
4. **India’s Digital Lending Guidelines:** Reserve Bank of India (RBI)
5. **Open Banking & Credit Models:** [Financial Stability Board (FSB)](https://www.fsb.org/)

## **Sample Dataset**

