Project Design Phase-I
Proposed Solution

Date	30 October 2023
Team ID	7.6
Team Members	Saloni Ghule-21BCE1967 Shreya Singh-21BPS1435 Kreet Rout-21BCE1482 Nitin Kumar-21BCE1792
Project Name	AI system that verifies user identities based on their online behaviour patterns, adding an extra layer of security.
Maximum Marks	2 Marks

Project Title:

Behavioural Biometrics-Based User Identity Verification System

Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Traditional methods of user identity verification, such as passwords, PINs, and security questions, are vulnerable to various forms of cyberattacks and identity theft. The rise in online security breaches and the increasing sophistication of cybercriminals necessitate the development of a more robust and user-friendly authentication system. The current identity verification methods also inconvenience users and often lead to password fatigue and account lockouts.
		Our proposed solution is to develop an AI-based system that verifies user identities based on their online

2.	Idea / Solution description	behaviour patterns. This system will analyse and recognize unique behavioural biometrics, including typing patterns, mouse movements, touch gestures, and mobile device usage, to verify the user's identity. The core elements of our solution include: • **Behavioural Biometric Data Collection:** The system will collect and analyse user behavioural data over time, creating a unique biometric profile for each user. • **Machine Learning and AI Algorithms:** Machine learning algorithms will process the behavioural data to establish a baseline for each user, allowing for real-time verification. • **Multi-Factor Authentication:** Users will have the option to combine behavioural biometrics with other authentication methods, like passwords or facial recognition, for added security. • **Continuous Monitoring:** The system will continuously monitor user behaviour during a session to detect any unusual activities or deviations from the established baseline.

3.	Novelty / Uniqueness	Our solution stands out due to the following unique features: • **Passive Authentication:** Unlike traditional methods, users will not need to actively input authentication credentials. This makes the verification process seamless and less prone to phishing attacks. • **Behavioural Adaptability:** The system will adapt to users' changing behaviours and account for variations due to factors like age, health, and device preferences. • **Real-Time Verification:** The system will provide instant verification, reducing user friction and improving security.
4.	Social Impact / Customer Satisfaction	Our solution offers several benefits: • **Enhanced Security:** Users will experience higher security levels, reducing the likelihood of identity theft and unauthorized access to their accounts. • **User Convenience:** The system simplifies the verification process, reducing the need for complex passwords and lengthy authentication steps,

		leading to improved customer satisfaction. • **Reduced Account Lockouts:** By continuously monitoring behaviour, the system can prevent account lockouts due to forgotten passwords.
5.	Business Model (Revenue Model)	We propose a flexible business model: • **Subscription Model:** Offer monthly or annual subscription plans for businesses, websites, and apps to integrate our identity verification system. • **Pay-Per-Use Model:** Charge businesses on a per-verification basis, making it cost-effective for smaller companies. • **Licensing Model:** License the technology to other security solution providers, generating revenue through licensing fees.
6.	Scalability of the Solution	Our solution is highly scalable: • **API Integration:** Can be easily integrated into existing web and mobile applications. • **Cloud-Based Infrastructure:** The system can leverage cloud resources to scale up based on demand.

		• **Global Reach:** Can be deployed worldwide, catering to a wide range of industries, including finance, healthcare, and e-commerce. • **Continuous Improvement:** Ongoing development and machine learning model updates ensure adaptability and long-term scalability.

In conclusion, our Behavioral Biometrics-Based User Identity Verification System offers a groundbreaking solution to the growing security challenges in the digital world. It combines advanced technology with user convenience, making it a valuable proposition for businesses and users alike.