

**TEAM NAME: 404 Error**

**PROJECT NAME: SMART AUTOMATED TELLER MACHINE (ATM)**

**DOMAIN:** Python (OpenCV, NumPy, os, Image, math, random), Flask, Dataset (Face Recognition system, Fingerprint Identification), Machine Learning - Neural Networks and Deep Learning.

**ABSTRACT:** Our project mainly aims in high-security while using ATMs. As the number of ATM units increase, the machines are prone to hacker attacks, fraud, robberies and security breaches. However, ATMs are becoming more complicated, and they serve numerous functions, thus becoming a high priority target to robbers and hackers.

The data processed by ATMs are usually encrypted, but hackers can employ discreet hacking devices to hack accounts and withdraw the account's balance.

As an alternative, we made a high secure smart ATM which ensures the ATM card of the respective individual by using One Time Password (OTP) option, Face Recognition system and Fingerprint detection.

- **One Time Password (OTP) option:** A one-time password (OTP), also known as one-time PIN or dynamic password, is a password that is valid for only one login session or transaction, on a computer system or other digital device.
- **Face Recognition system:** A facial recognition system is a technology capable of identifying or verifying a person from a digital image or a video frame from a video source. There are multiple methods in which facial recognition systems work, but in general, they work by comparing selected facial features from given image with faces within a database.
- **Fingerprint detection:** Fingerprint identification is one of the most well-known and publicized biometrics. Because of their uniqueness and consistency over time, fingerprints have been used for identification for over a century, more recently becoming automated (i.e. a biometric) due to advancements in computing capabilities.

**Key Words:** One Time Password (OTP), Face Recognition system, Fingerprint Identification, Machine Learning - Neural networks (Hidden layers and hidden units) and Deep Learning.