

Two-Factor Authentication (2FA) Project – Simple Guide

Project Description

This project demonstrates a Two-Factor Authentication (2FA) system using Flask and Email-based OTP. The system improves login security by requiring both password verification and OTP verification.

Required Tools

- Python 3.x
- Flask Framework
- SQLite Database
- Gmail Account with App Password
- Web Browser (Chrome / Firefox)

Installation Instructions

1. Install Python 3 on your system.
2. Open terminal or command prompt.
3. Install Flask using command:
pip install flask
4. Download or clone the project from GitHub.
5. Configure Gmail App Password in the application file.

How to Run the Project

1. Open terminal and navigate to the project directory.
2. Run the command:
python app.py
3. Open a web browser.
4. Visit:
http://127.0.0.1:5000

Project Workflow

1. User registers with username, email, and password.
2. User logs in using username and password.
3. Server verifies login credentials.
4. Server generates a one-time password (OTP).
5. OTP is sent to the user's registered email address.
6. User enters OTP for verification.
7. Server validates OTP and grants access.

GitHub Repository

Project Source Code is available at:
<https://github.com/Madhan-Cs-Study/Madhan.git>

Conclusion

This project provides a clear understanding of authentication, OTP verification, and secure login implementation using Flask. It is suitable for academic and learning purposes.