AI Mood Tracker – Full Project Documentation

# 🔍 Project Overview

The AI Mood Tracker is a real-time facial expression analysis tool that uses computer vision and artificial intelligence to detect a user’s mood from a live webcam feed.

It maps your facial expressions into emoji-based mood categories like happy, neutral, shocked, or sad/tired. It also provides real-time voice feedback, and logs all mood activity for the day to create a daily mood trend graph.

This project combines facial landmark detection, emotion logic, voice synthesis, and data visualization — creating a complete AI-based emotional intelligence system.

# ⚙️ How It Works – Step-by-Step

1. Webcam Activation – Starts reading the user's face in real-time using OpenCV.

2. Facial Landmark Detection – Detects 3D landmarks on the face via MediaPipe.

3. Mood Analysis Logic:

- Mouth + Eyes open = Shocked 😲

- Mouth open only = Happy 😄

- Eyes open only = Neutral 😐

- Mouth closed + eyes half/closed = Tired/Sad 😴

4. Voice Feedback – Uses pyttsx3 to speak detected emotion aloud.

5. Emoji Display + Mood Score – Shows emoji & mood score with bold black overlay.

6. CSV Logging – Logs timestamp, mood, emoji, and score.

7. Daily Mood Graph – Auto-generates a daily average mood score bar chart.

# 🎯 Use Cases

- Mental Health: Understand your emotional trends.

- Productivity: Track how emotions impact your day.

- AI Wellness: Integrate into games, apps, or assistants.

- Research: Great for HCI, facial emotion recognition projects.

# 👤 Who Can Benefit

| User Type | Benefit |

|----------------|-----------------------------------------------|

| 🔬 Students | Learn real-time AI and Python integration |

| 💼 Job Seekers | Showcase hands-on AI project skills |

| 🧘 Self-trackers | Discover mood patterns throughout the day |

| 👩‍🏫 Educators | Teach computer vision and emotion systems |

| 📈 Analysts | Analyze emotional well-being data |

# 🧰 Technologies Used

- Python 3.10+

- OpenCV

- MediaPipe

- pyttsx3

- Matplotlib

- Pandas

- CSV for logging

# 🔧 Future Enhancements

- Web app version (Streamlit/Flask)

- Add more emotions (angry, excited, etc.)

- Convert to mobile app

- Export graphs/reports to PDF

- Dynamic voice tones or LLM-based response

# 📌 Summary

A full-stack AI-powered real-time system that:

- Sees you 👀

- Understands you 🧠

- Talks to you 🎙️

- Logs your day 📊

Built by Sai Keerthan as a showcase of AI skill + practical impact. Open to AI roles and collaborations!