Lesson Plan: MoodToEmoji — Kid-Safe Text Mood Detector

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Live App: https://moodtoemoji.streamlit.app/

■ Objective

The purpose of this project is to help students understand how artificial intelligence can interpret human emotions from text in a safe and educational way. The application, MoodToEmoji, is designed to analyze a typed sentence, identify its emotional tone (happy, sad, angry, etc.), and respond with a corresponding emoji and message. This encourages empathy, communication skills, and AI awareness among learners aged 12–16.

■ Key Concepts Covered

- Natural Language Processing (NLP) and text preprocessing
- Sentiment and emotion detection using Hugging Face Transformers
- Fallback sentiment analysis using TextBlob
- Gibberish and harmful content detection (Kid-Safe AI principles)
- Deployment of AI models using Streamlit on the web

■ Activity Explanation

Students or users enter a sentence into the web app (e.g., “I am feeling great today!”). The AI then performs several checks: whether the sentence is meaningful, safe, or expresses harmful intent. If valid, it uses pre-trained transformer models from Hugging Face to classify emotions and display a kid-friendly emoji. For uncertain or meaningless inputs, it politely responds that it couldn’t understand.

This hands-on project demonstrates how machine learning models understand human language and promotes awareness about responsible AI use. It also helps learners understand model pipelines, safety filters, and ethical implications of emotion recognition systems.

■ Learning Outcomes

- Understand the basics of NLP and emotion detection using transformer models.

- Develop awareness of ethical and safe AI practices for kids and students.
- Gain experience in deploying interactive AI web apps using Streamlit.
- Learn how AI interprets tone, sentiment, and context in human communication.
- Build confidence in presenting AI-based creative projects responsibly.

■ Tools and Libraries Used

- Streamlit — for creating the web-based interactive UI
- Transformers (Hugging Face) — for deep learning-based emotion detection
- TextBlob — for backup sentiment analysis and language understanding
- Python (v3.11+) — for backend logic and model integration

■ Reflection and Discussion Points

After the session, students can discuss questions like: - How accurate was the AI in detecting your emotions? - What could make it misunderstand a sentence? - Why is it important to include safety filters in AI models? - How might emotion detection be used in real-world apps like chatbots or therapy assistants?

■ Conclusion

MoodToEmoji is a fun and educational AI tool that bridges technology with emotional intelligence. By combining machine learning models and ethical design, it inspires young learners to think critically about AI, language, and empathy in the digital world.