Lesson Plan: Build a Mood2Emoji App (Ages 12–16)

Duration: 60 minutes

Goals

- Understand that computers can estimate mood from text using simple rules
- Build a tiny app that maps a sentence to 😀 😐 ☹️ with a short message
- Learn responsible design: safety filters and neutral fallbacks
- Practice thinking in steps: input → check → score → output

Topics Introduced

- Inputs/outputs and simple data flow
- Sentiment polarity (basic idea only)
- Thresholds and rules (e.g., > 0.2 = happy)
- Safety filters (bad words/links → neutral)
- User interface basics with Streamlit

Materials

- Computer with Python 3.9+ and internet
- The provided repository and requirements.txt

Lesson Outline (60 minutes)

0–10 min: Warm-up and motivation

- Show three example sentences and ask students to vote on the mood
- Ask: How could a computer guess the mood? What could go wrong?

10–20 min: Concept check (no code)

- Draw the flow on the board:

1. Student sentence → 2) Safety check → 3) Sentiment score → 4) Emoji

- Explain: TextBlob gives a polarity score from negative to positive (like -1 to +1)
- Set simple thresholds: > +0.2 = 😀, < -0.2 = ☹️, else 😐
- Safety rule: if unkind/inappropriate/unknown → 😐 with a kind message

20–35 min: Demo the app (teacher-led)

- Run the Streamlit app and try some examples together
- Turn on Teacher Mode to show the diagram and walk through each step
- Discuss edge cases: sarcasm, very short text, mixed feelings

35–50 min: Hands-on practice (students)

- Students try their own sentences and predict the emoji first.
- Mini-challenge ideas:
  - Adjust thresholds (e.g., ±0.15 or ±0.25) and see changes.
  - Extend the safety list with one polite rule (e.g., school slang).
  - Write three sentences that each yield a different emoji.

50–60 min: Reflection and share-out

- What felt fair or unfair about the model?
- When should we choose neutral on purpose?
- What would make this smarter while staying safe for kids?

Activity Explanation (for students)

- You will type short, school-friendly sentences.
- The app checks for kindness/links first. Unsafe/unknown → neutral.
- If safe, the app estimates mood using a simple score.
- The app shows an emoji and a short explanation.

Learning Outcomes

By the end, students can:

- Describe and sketch the flow of a simple text classifier
- Explain why safety checks come before predictions
- Interpret simple thresholds and their trade-offs
- Suggest one improvement to make the app more fair or clear
