# Session 4: AI Guessing Game — Instructor Guide

This guide supports instructors delivering the Newegg AI Workshop – Session 4 (AI Guessing Game). It includes session flow, key concepts, teaching notes, and challenge solutions. This session is the capstone of the workshop, combining image generation, image classification, and sentiment chatbot components.

## Session Overview

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| Session Title | Session 4: AI Guessing Game |
| Duration | 90 minutes |
| Objective | Students will integrate all previously learned AI components into a single interactive project. By building an AI Guessing Game, they will apply skills in image generation, image classification, and sentiment analysis, and learn how to make AI respond interactively to user inputs. |
| Materials | Jupyter Notebook (Session\_4\_AI\_Guessing\_Game\_Beginner\_Final.ipynb), Internet access, GPU-enabled environment (e.g., NiceGPU), PPT slides. |

## Teaching Flow

* 1. Introduction (10 min): Recap previous sessions and explain the final project objective.
* 2. Concept Overview (10 min): Describe how the AI Guessing Game combines visual and language models.
* 3. Guided Coding (30 min): Walk students through the starter notebook structure and AI responses.
* 4. Integration & Play (25 min): Students test the chatbot and image components together to play the guessing game.
* 5. Creative Challenge (10 min): Let students customize the game with personality, images, or scoring.
* 6. Wrap-Up & Reflection (5 min): Celebrate completion and discuss how AI systems combine multiple skills in real-world applications.

## Key Concepts

• Integration of AI systems: combining visual, textual, and emotional analysis.

• Game logic and interactivity: applying condition-based responses and loops.

• Sentiment-driven responses: adjusting chatbot tone based on emotional input.

• Creativity in AI: blending code and storytelling to create interactive experiences.

• Real-world AI systems: multimodal learning (e.g., Siri, Alexa, or Google Assistant).

## Instructor Notes

⚙️ Encourage creativity: There’s no single correct solution — focus on how students combine ideas.

💡 Keep the session light and playful: Let students experiment with responses and imagery.

🧠 Reinforce previous knowledge: Prompt students to recall techniques from Sessions 1–3.

🌍 Connect to real-world applications: Highlight AI that can 'see, understand, and speak' like personal assistants.

⚠️ Monitor time: The integration phase can take longer; help students debug import or syntax errors quickly.

## Challenge Questions (Student Version)

1. 🎨 Add Personality – Give your AI a fun name and personality (e.g., 'NeweggBot the Detective').

2. 🧠 Smarter Guesses – Use CIFAR-10 object categories for your AI’s guesses.

3. 💬 Chat History – Store and display all clues and guesses at the end of the game.

4. 🎯 Scoring System – Award points for correct guesses within limited attempts.

5. 🚀 Bonus – Combine image display, sentiment analysis, and logic for a fully integrated AI experience.

## Challenge Solutions (Instructor Reference)

1. 🎨 Students can define an AI name variable and personalize greeting messages.

2. 🧠 Use the CIFAR-10 class names list instead of random objects for more realism.

3. 💬 Maintain a Python list (e.g., 'history') to store clues and guesses; display at game end.

4. 🎯 Add variables for score and attempts; increment score when the AI guesses correctly.

5. 🚀 Encourage advanced students to link their image generation and chatbot systems for dynamic, multimodal interaction.

## Wrap-Up & Reflection

🎯 Reinforce the concept that real AI systems often combine different models (vision, text, emotion). Encourage students to see how creativity and teamwork between models lead to powerful results.

🎉 Celebrate completion: Have each student or team demo their AI Guessing Game and share their funniest or most surprising AI guesses. Award certificates or small prizes for creativity and effort.