

Practical Project: AI Concept Chatbot (EduBot)

Project Documentation

Group Name: Cyber Ninjas

Link to EduBot :

<https://cdn.botpress.cloud/webchat/v3.2/shareable.html?configUrl=https://files.bpcontent.cloud/2025/08/19/08/20250819083637-AL7IL6ST.json>

1. Implementation Approach and Platform Selection

We built an interactive AI educational chatbot named EduBot to make AI fundamentals accessible to beginners.

Platform Selection: Botpress

- Chosen for its no-code approach, ease of deployment, and strong support for knowledge base integration.
- Allowed direct upload of module notes (Modules 1–4 from the bootcamp), enabling the chatbot to provide contextual answers.
- Offers quiz functionality through conversation nodes and supports multimedia elements such as diagrams.

Implementation Steps:

1. Knowledge Base Setup: Uploaded bootcamp modules.
2. Q/A Training: Added 15+ curated Q&A pairs covering terminology, distinctions, applications, and ethics.
3. Conversation Flows: Designed flows for 'Learn about NLP' and 'Explore AI Ethics'.
4. Interactive Features: Implemented quiz functionality with dynamic question length (not limited to 3).
5. Follow-up Handling: Configured to handle at least 3 follow-up queries per topic.
6. Further Learning Links: Integrated module references for deeper study.
7. Error Handling: Added fallback messages such as 'I don't understand, please try rephrasing'.

2. Implemented Q&A Pairs

1. What is Artificial Intelligence (AI)?
2. What is Machine Learning (ML)?
3. What is Deep Learning (DL)?
4. What is Natural Language Processing (NLP)?
5. What are Large Language Models (LLMs)?
6. What is a Neural Network?

7. What is Computer Vision?
8. Difference between AI, ML, and Deep Learning
9. Difference between Neural Networks and Deep Learning
10. Applications of AI in healthcare
11. Applications of AI in finance
12. Applications of AI in transportation
13. Applications of NLP
14. Applications of Computer Vision
15. What are AI ethics?
16. What is bias in AI?
17. How does AI impact privacy?

3. Conversation Flows

Flow 1: Learn about NLP

- User: 'Learn about NLP'
- Bot: Defines NLP → Provides examples → Explains challenges
- Supports follow-up questions like 'What is sentiment analysis?' or 'How do chatbots use NLP?'

Flow 2: Explore AI Ethics

- User: 'Explore AI Ethics'
- Bot: Ethics overview → Bias in AI → Privacy → Suggests topic for further reading

Interactive Quiz Flow

- User: 'Give me a quiz'
- Bot: Asks unlimited questions on AI fundamentals
- Feedback: Correct/Incorrect with explanations

4. Screenshot Examples

- Screenshot 1: Greeting & topic selection

The screenshot shows a conversational AI interface with the following elements:

- User Input:** "E Hello! 🤖 I'm EduBot, your assistant for all things AI fundamentals—Machine Learning, NLP, Neural Networks, Computer Vision, and LLMs. How can I help you today?"
- Bot Response:** "What is NLP" (Delivered)
- Bot Response Content:** "Natural Language Processing (NLP) is a field of artificial intelligence that helps computers understand, interpret, and generate human language. Common applications include chatbots, translators, sentiment analysis, and voice assistants."
- User Input:** "Ask me anything about AI"
- Bot Footer:** "Activate Windows" (Go to Settings to activate Windows.)
- Bot Footer:** "⚡ by Botpress"

- Screenshot 2: NLP conversation flow

A screenshot of a conversational AI interface. The user has asked for examples of NLP, and the AI has provided a list of applications. The AI then discusses challenges in NLP, such as sarcasm detection and language ambiguity. The interface includes buttons for 'give me examples of nlp', 'explain challenges', and 'Activate Wir'.

give me examples of nlp

Here are some common examples of Natural Language Processing (NLP) applications:

- **Chatbots** (like customer support bots)
- **Machine translation** (e.g., Google Translate)
- **Sentiment analysis** (detecting positive or negative opinions in text)
- **Voice assistants** (such as Alexa, Siri, Google Home)
- **Text classification** (like spam detection in emails)
- **Named entity recognition** (identifying names, places, etc. in text)
- **Information retrieval** (e.g., web search engines)

These examples show how NLP helps computers understand and work with human language in real-world tasks.

E

explain challenges

Delivered

Some of the main challenges in Natural Language Processing (NLP) include:

- **Sarcasm detection:** Understanding when someone is being sarcastic is difficult for computers.
- **Language ambiguity:** Words and sentences can have multiple meanings depending on context.
- **Cultural context:** Language use varies by culture, making it hard for models to generalize across regions and groups.

E These challenges make it complex for computers to fully understand and process human language.

Activate Wir

- Screenshot 3: Quiz interaction

A screenshot of a quiz interaction. The user asks if they can do a quiz, and the AI responds positively. The AI then starts an NLP quiz, asking a question about common NLP applications. The user selects the correct answer, 'B. Sentiment analysis'. The AI confirms the answer is correct and provides feedback for the next question.

can i do a quiz

Great! Would you like to take a quiz on Natural Language Processing (NLP), or is there another AI topic you're interested in?

E NLP Quiz Other AI Topic

NLP Quiz

Let's start the NLP Quiz!

Question 1:
Which of the following is a common application of Natural Language Processing (NLP)?

E A. Image classification B. Sentiment analysis C. Object detection D. Path planning

B. Sentiment analysis

Delivered

Correct! **Sentiment analysis** is a common application of NLP.

Question 2:
Which of the following tasks is NOT typically handled by NLP?

A. Image recognition
B. Machine translation
C. Text summarization
D. Named entity recognition

E Please reply with the letter of your answer.

Ask me anything about AI

5. Diagrams

Diagram 1: Chatbot System Architecture

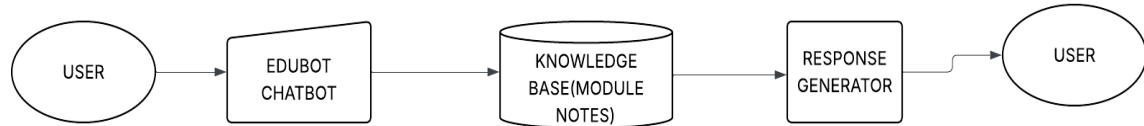


Diagram 2: Conversation Flow (NLP Example)

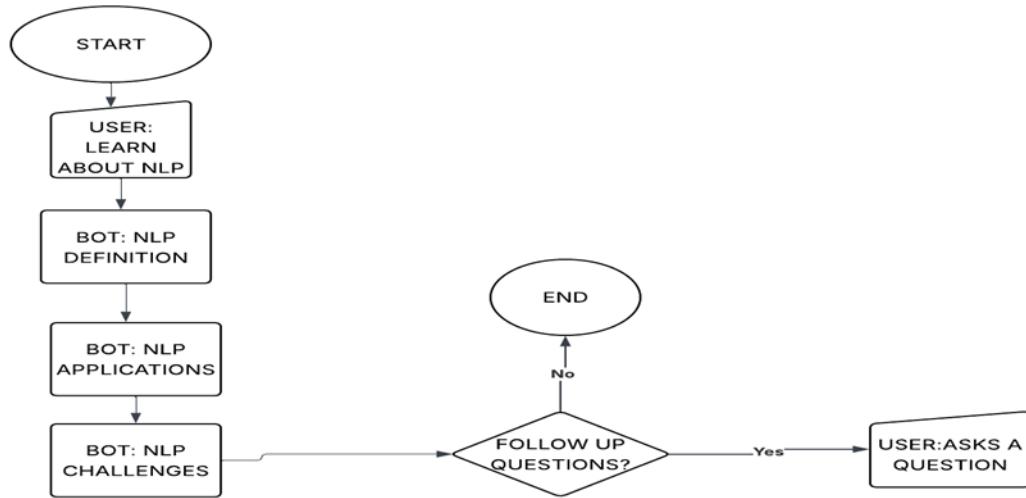
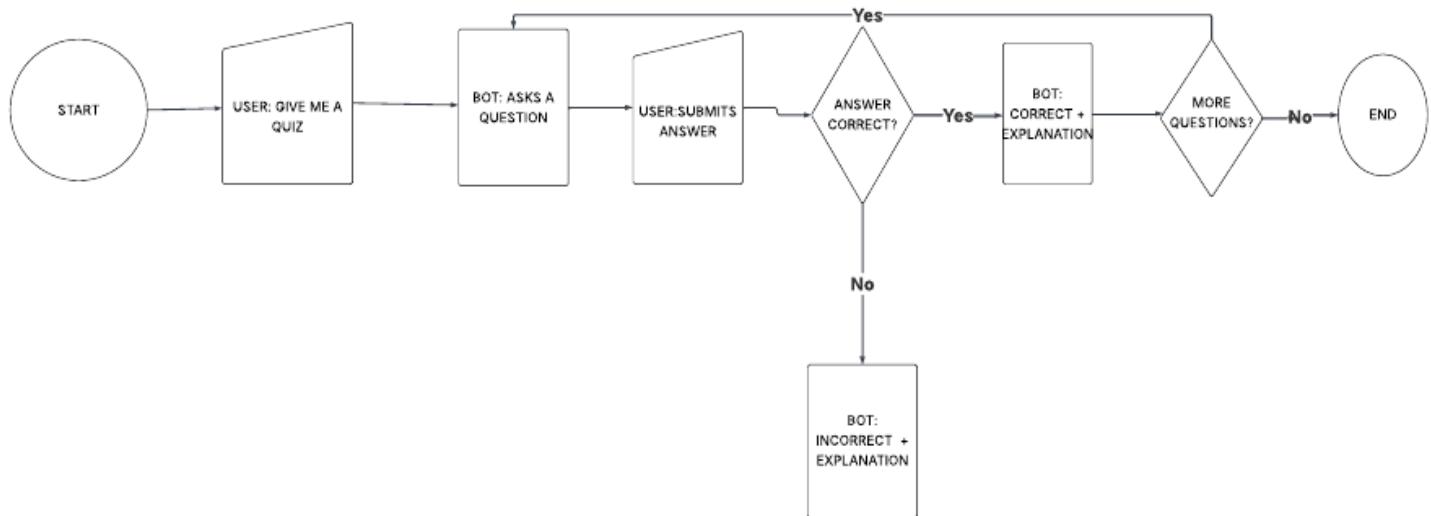


Diagram 3: Quiz Interaction Flow



6. Further Learning Feature

At the end of each topic, the chatbot recommends relevant AI topics:

- NLP
- Neural Networks
- Ethics

7. Error Handling

If user input is unclear:

'I don't understand. Could you rephrase or would you like to ask about something related to AI, machine learning, or technology?'