

## DEVELOPING A CHAT BOT USING AN INFORMATION TECHNOLOGY KNOWLEDGE BASE

**Bohomolov K.R., Burdaiev V.P.**

*National Technical University «Kharkiv Polytechnic Institute», Kharkiv*

Chatbots based on artificial intelligence are widely used in digital services to automate communications, improve customer service efficiency and provide prompt information support. Recently, one of the key areas of chatbot development has been the combination of large language models (LLM) with subject-oriented knowledge bases, which improves the quality, accuracy and relevance of the generated responses.

The chatbot is developed based on the OpenAI language model [1] and uses a knowledge base that contains inference rules and information from the field of information technology. The chatbot is implemented on the Telegram platform and allows you to provide assistance to the user when studying information technology.

The chatbot is implemented using the Python programming language and the Aioogram library, which allows developing bots on the Telegram platform. PostgreSQL is used to store and manage the knowledge base.

The interaction between the chatbot and the user occurs according to the following scenario: the incoming message is processed, analyzed using NLP [2], a search for relevant information is performed in the knowledge base, a request is generated to the OpenAI API, and the response is returned to the user in a convenient format (Fig. 1).

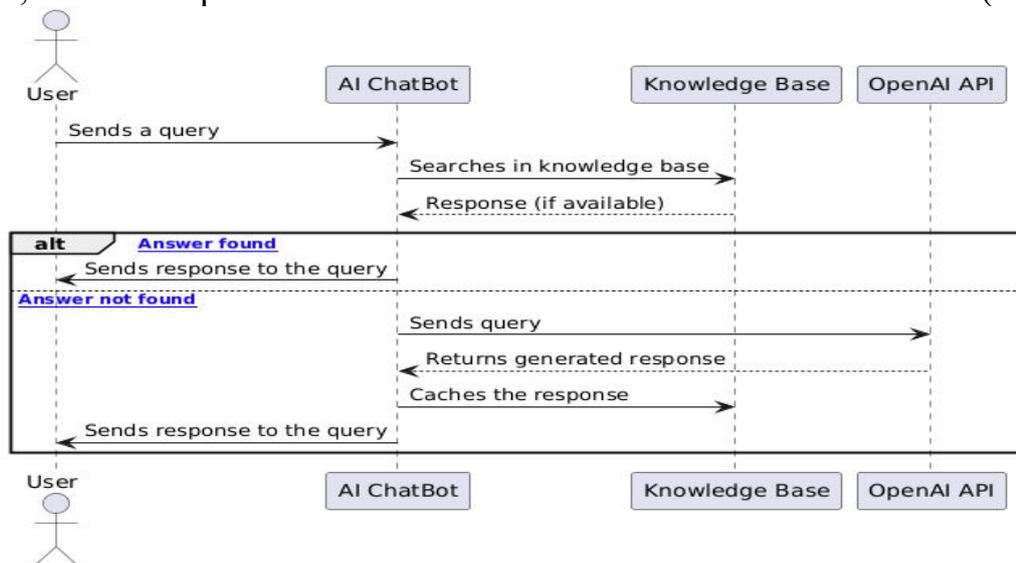


Fig. 1. – General architecture of the chatbot system

The development of a chatbot has potential for implementation in the field of educational technologies, technical support and IT consulting.

**References:**

- 1.Radford, A., et al. (2019). Language Models are Unsupervised Multitask Learners. URL: <https://surl.li/vngjae>
- 2.Brown, T. et al. (2020). Language Models are Few-Shot Learners. URL: <https://arxiv.org/abs/2005.14165>