

Abstract

Large Language Models (LLMs) have made significant news since the announcement of ChatGPT's release in November 2021. ChatGPT has sparked interest in the adoption and deployment of AI solutions. One particular area is reimagining software development, where an AI provides instruction in software development based on engineered prompts. This work investigated the potential of LLM, in particular ChatGPT, for training a non-programmer to program. More precisely, this investigation curates available tools, videos, and tutorials that utilize ChatGPT for software programming to non-programmers.

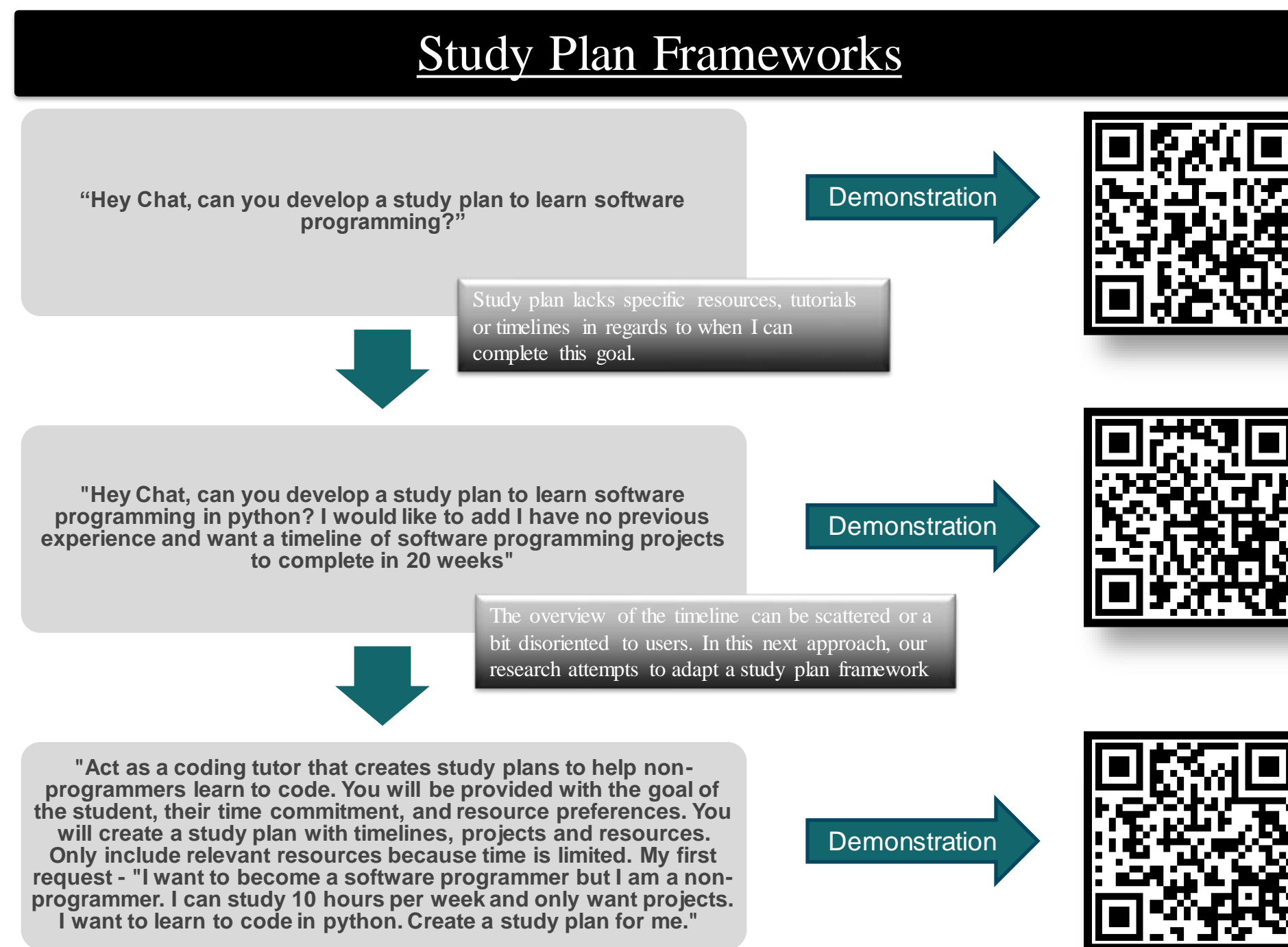
LLM for Teaching Software Programming

LLMs are still in their early stages of being used to help non-programmers learn software programming. However, there is a growing body of research that suggests that LLMs have the potential to be a valuable tool for helping non-programmers learn software programming effectively as compared to self-teaching. With careful planning and implementation, LLMs can help to make software programming education more accessible and inclusive for non-programmers. In this section of this research paper, I will discuss the curation of training and tutorials for teaching software programming to non-programmers.

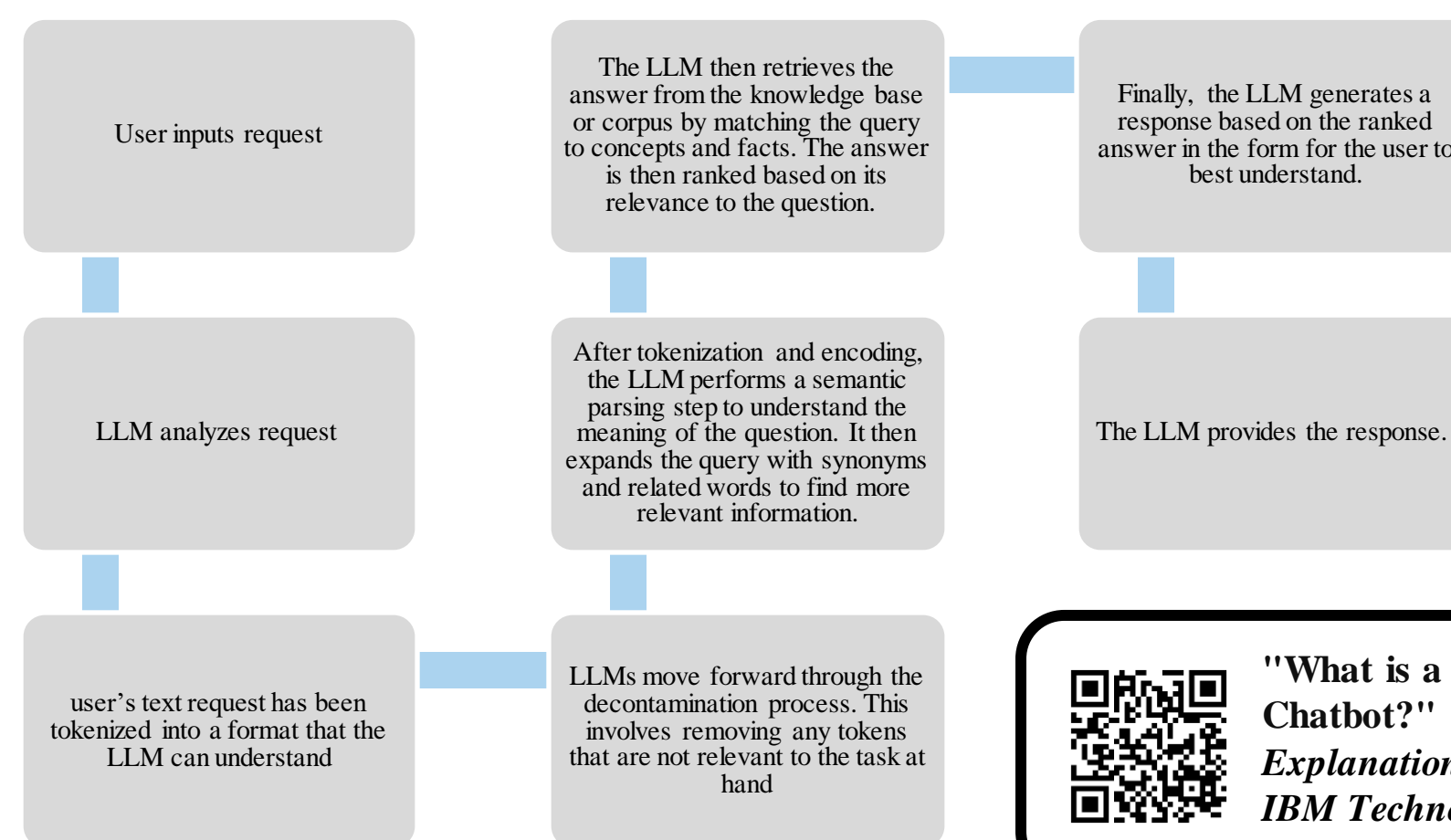
Reflection

Overall, the utilization of LLMs for educating nonprogrammers offers substantial potential benefits. By taking steps to address the challenges, educators can create a supportive learning environment that maximizes the advantages of LLMs while safeguarding students' privacy and data security. It is important to keep in mind that LLMs are software agents, not human instructors, so therefore to complete this research, I had to approach ChatGPT in a specific way to design a study plan that a nonprogrammer could follow and accomplish the goal of learning software programming.

Developing a Study Plan Frameworks



LLM Processing



"What is a Chatbot?"
Explanation by
IBM Technology

Other LLM Training Material



*How to learn to code
FAST using ChatGPT (it's
a game changer seriously)*

*GPT-4 - How does it work,
and how do I build apps
with it? - CS50 Tech Talk*



*Automatically Generating
CS Learning Materials
with Large Language
Models*

*From "Ban It Till We Understand It" to
"Resistance is Futile": How University
Programming Instructors
Plan to Adapt as More
Students Use AI Code
Generation and Explanation
Tools such as ChatGPT and
GitHub Copilot*



References

- [8] Rickard, M. (2023, June 5). The Problem with Tokenization in LLMs. <https://matt-rickard.com/the-problem-with-tokenization-in-llms>
- [9] Maeda, J., & Bolanos, M. (n.d.). What are Tokens?. LLM AI Tokens | Microsoft Learn. <https://learn.microsoft.com/en-us/semantic-kernel/prompt-engineering/tokens>
- [10] Abramson, A. (n.d.). How to use ChatGPT as a learning tool. Monitor on Psychology. <https://www.apa.org/monitor/2023/06/chatgpt-learning-tool>
- [13] How to learn to code FAST using ChatGPT (it's a game changer seriously). (2023). YouTube. Retrieved August 9, 2023, from <https://youtu.be/VznoKyh6AXs>.
- Lau, S., & Guo, P. J. (n.d.). From "ban it till we understand it" to "resistance is futile": How ... From "Ban It Till We Understand It" to "Resistance is Futile": How University Programming Instructors Plan to Adapt as More Students Use AI Code Generation and Explanation T. https://pg.ucsd.edu/publications/cs-instructors-adapting-to-chatgpt-copilot-ai-tools_ICER-2023.pdf
- MacNeil, S., Tran, A., Leinonen, J., Denny, P., Kim, J., Hellas, A., Bernstein, S., & Sarsa, S. (2022, December 9). Automatically generating CS Learning Materials with large language models. Automatically Generating CS Learning Materials with Large Language Models. <https://arxiv.org/abs/2212.05113>
- YouTube. (2023b). GPT-4 - How does it work, and how do I build apps with it? - CS50 Tech Talk. YouTube. Retrieved August 12, 2023, from https://www.youtube.com/watch?v=vw-KWfKwTQ&t=861s&ab_channel=CS50.