

## 4. Exercises

Let's do a mini ``Vibe Coding'' challenge (use any 2+ tools)

**Task:** Create a Ping-Pong game using Python

Using two tools we learned today, create a simple Ping-Pong game in Python. Compare the results from using each tool (e.g., code quality, speed of generation, ease of use). This lab exercise challenges you to apply the two coding tools introduced today to develop a basic Ping-Pong game in Python. The primary goal is to compare the effectiveness and efficiency of each tool in a practical coding scenario.

- **Analyze the results:** After creating the game with both tools, you should meticulously compare their performance based on several criteria, including:
  - **Code quality:** Assess the readability, maintainability, and efficiency of the generated code. Are there best practices evident? Is the code well-commented?
- Both models produced clean code that's easy to understand, not too lengthy while also making sure there a good amount of functions that demonstrate how each piece of the game actually works
  - **Speed of generation:** How quickly can you go from an idea to a working prototype using each tool?
- Copilot took almost 3 minutes to generate the code, however cursor took just 10 seconds, this may have to do with the fact I had cursor premium while I have the free version of copilot
  - **Ease of use:** How intuitive and user-friendly is each tool? Are there any significant learning curves or complexities?
- Cursor is slightly harder to navigate and use and the UI is too clean to the point where you don't know what any of the small buttons represent. Copilot is easier to navigate and asks questions and explains its throughout process while working
  - **Debugging and error handling:** How easy is it to identify and resolve issues when using each tool?
- Both systems are friendly towards debugging and if it had a confusion it would ask you before it proceeds
  - **Flexibility and customization:** How well does each tool allow for modifications and enhancements to the game?
- Both systems also allow a lot of flexibility and if there is something you want to change for both systems you simply just tell the LLM what to change and it does it for you