

## Reflection

Working on this C5 assignment taught me a lot about how AI agents can connect to external tools and services using the Model Context Protocol (MCP). Before this, I had a basic idea of how APIs worked, but this assignment helped me understand how to structure them in a reusable, modular way so that any AI agent can interact with them easily. I also learned how to design custom map servers that follow clear input and output schemas, and how to use the OpenAI Agents SDK to make the agent automatically choose the right tool for the task. Setting up asynchronous requests, managing API limits, and testing endpoints gave me hands-on experience with real-world programming challenges.

Another important lesson I learned was the value of testing and incremental development. Writing small tests for each function before integrating them saved a lot of time and helped me catch mistakes early. This assignment also improved my understanding of how map services like OpenStreetMap and OpenRouteService work behind the scenes.

For next steps, I plan to add a third MCP tool, for example, a weather or elevation server, so that the agent can combine map data with live environmental information. I'd also like to build a simple web interface, so users can ask map questions through a chat-style webpage instead of the terminal. Overall, this assignment gave me a strong foundation in connecting AI with external APIs, and I feel more confident about building practical, real-world AI tools in the future.