

Brisbane .NET UG



Essential MCP Workshop

Medhat Elmasry

Medhat Elmasry

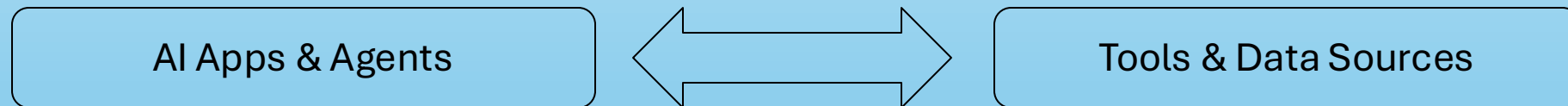
- Greetings!!! From Vancouver, Canada
- Instructor at BCIT
- Independent Contractor
- Microsoft MVP since 2017
- Founded .NET BC User Group in 2003
- Speaker
- <https://blog.medhat.ca>
- medhat@elmasry.ca



What is the Model Context Protocol (MCP)?

Model Context Protocol (MCP) is an open standard developed by Anthropic, the company behind Claude AI models.

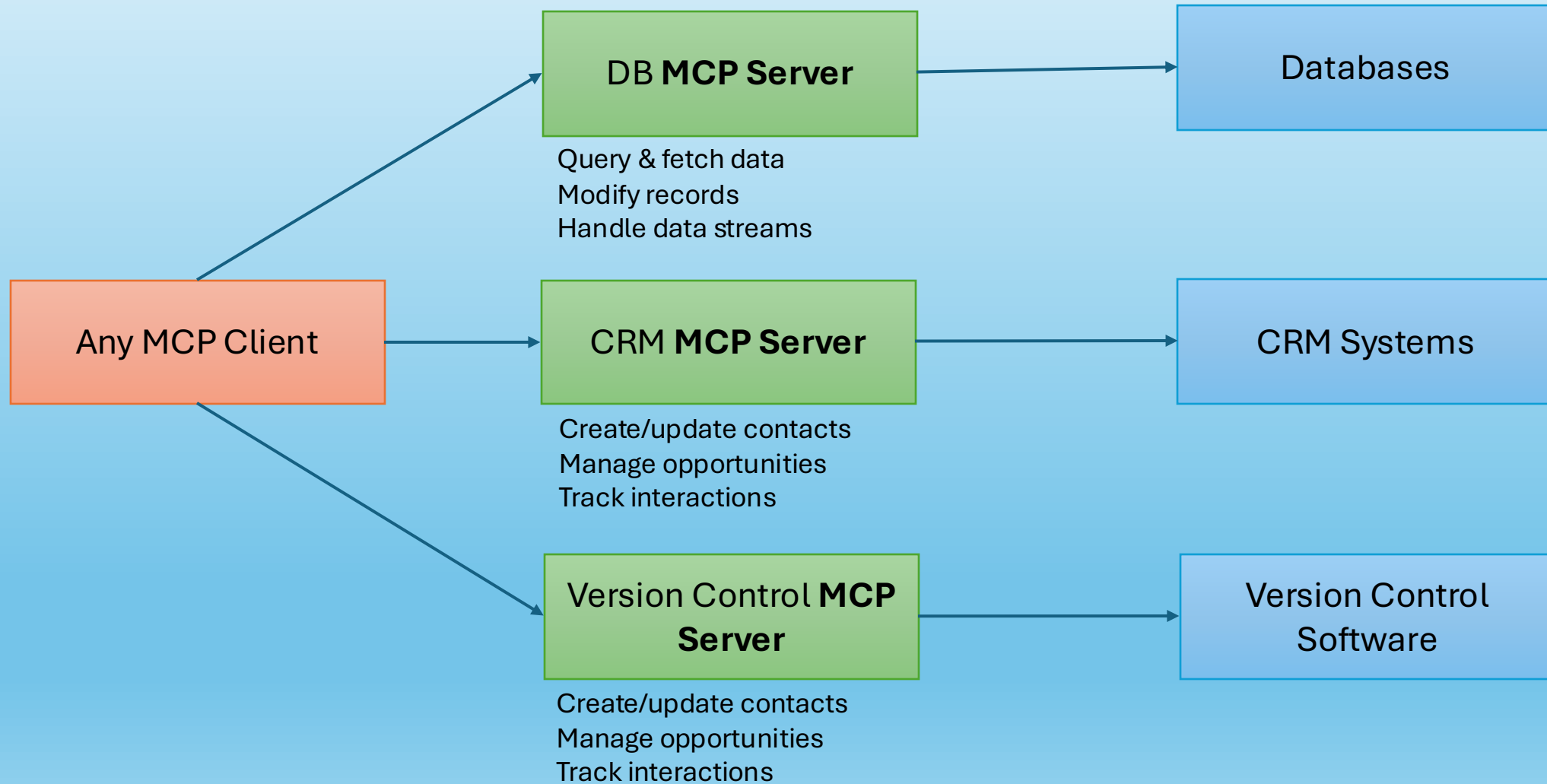
MCP is an open protocol that enables seamless integration between:



MCP standardizes how AI applications interact with external systems:

- Prompts
- Tools
- Resources

With MCP: Standardized AI Development



With MCP: Standardized Development

For AI application
developers

- Connect your app to any MCP server with 0 additional work

For tool or API
developers

- Build an MCP server once, see adoption everywhere

For end users

- More powerful and context-rich AI application

For enterprises

- Clear separation of concerns between AI product teams

The MCP Ecosystem is Growing Fast

AI Applications, from IDEs to Agents

Server Builders (1,000+ and counting)

Enterprises, for internal and external use cases

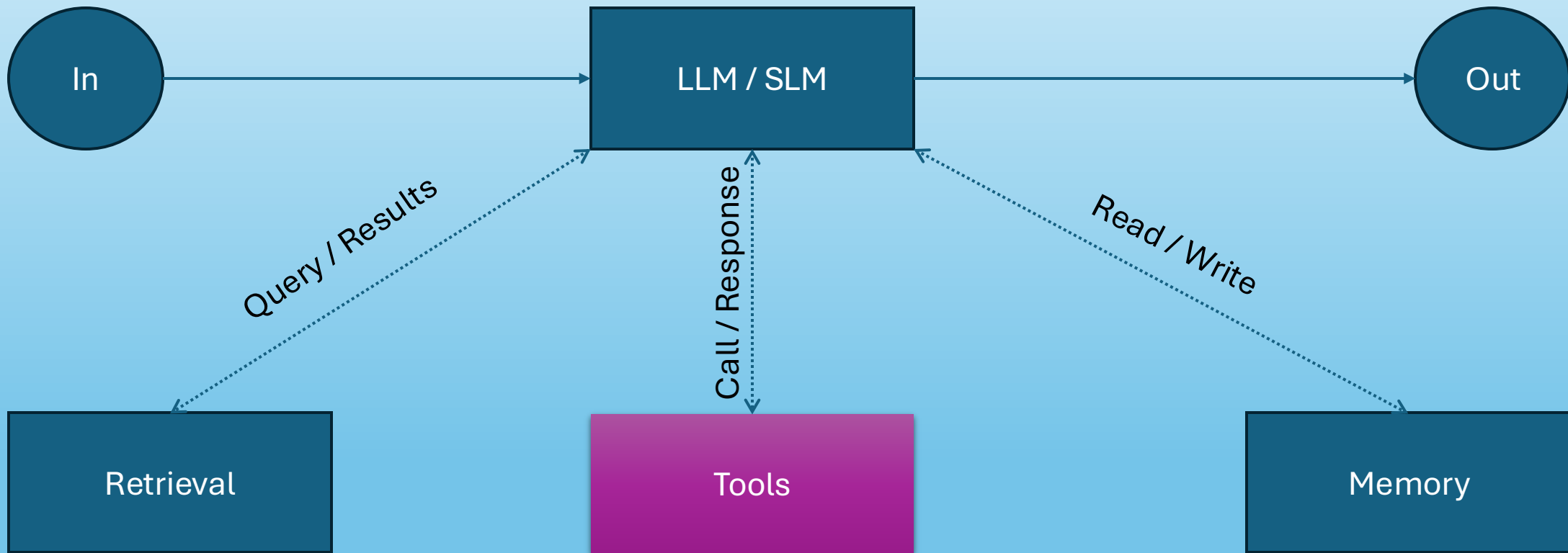
Open Source Contributors

And a lot more...

VISIT >> <https://github.com/modelcontextprotocol/servers>

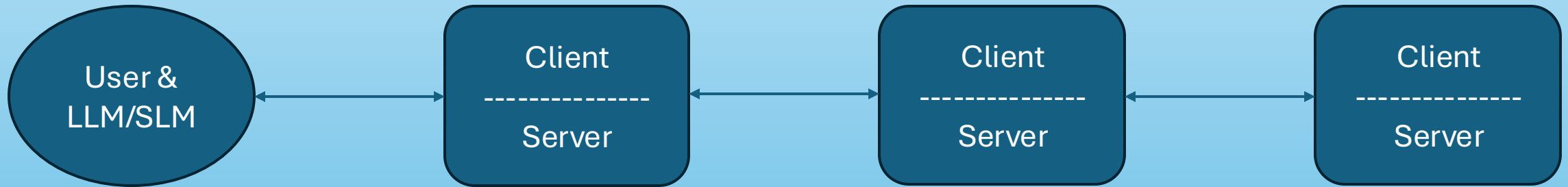
MCP will be the
foundational protocol for
agents

Building Effective Agents with MCP



Building Effective Agents with MCP

Composability → An MCP client can be a server and vice-versa (AKA Chaining)



Official MCP SDKs



.NET NuGet Packages

ModelContextProtocol

ModelContextProtocol.AspNetCore



Currently in
preview

MCP vs RAG

Retrieval-Augmented Generation (RAG) and Model Context Protocol (MCP) are two distinct approaches for enhancing the capabilities of Large Language Models (LLMs)

RAG	MCP (AKA USB for AI)
<ul style="list-style-type: none">• Limited to text (semantic search)• Search vector DB with every prompt	<ul style="list-style-type: none">• Protocol for connecting tool with any external data like databases, file systems, API, etc.....• Retrieve data and take actions
<ul style="list-style-type: none">• Clean up data• Chunk data• Create embeddings• Store in vector database• Convert prompt into embeddings• Search for relevant records	<ul style="list-style-type: none">• Configure server in config file• MCP client judges whether to contact MCP server• Client / Server model
Dictates how	Does not dictate how

What's next for MCP?

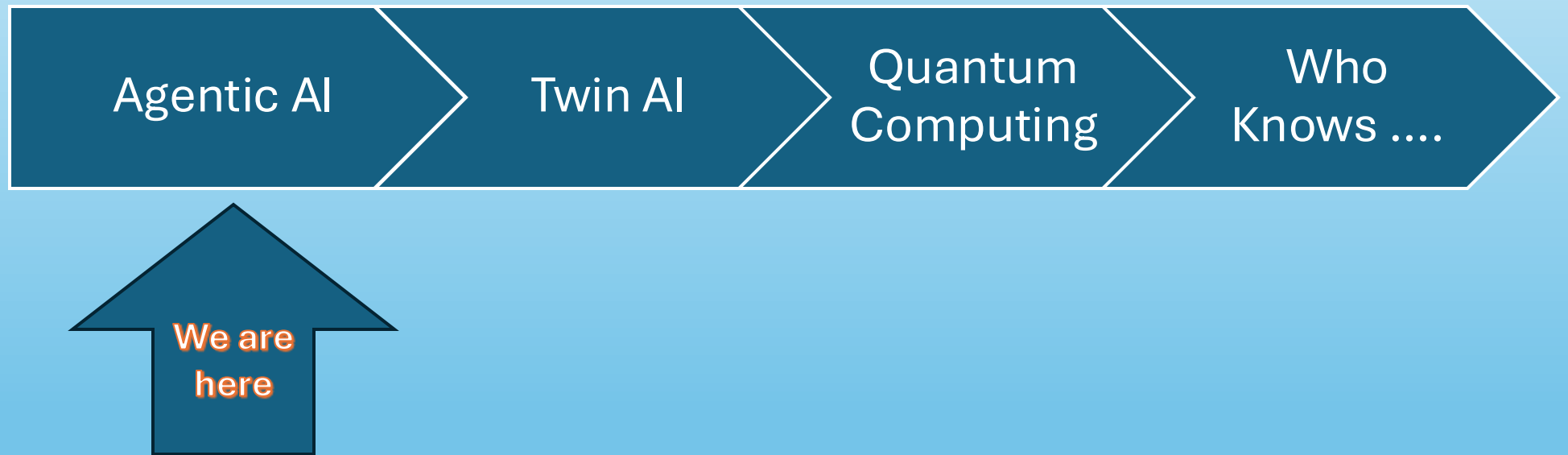


REMOTE SERVERS + AUTH



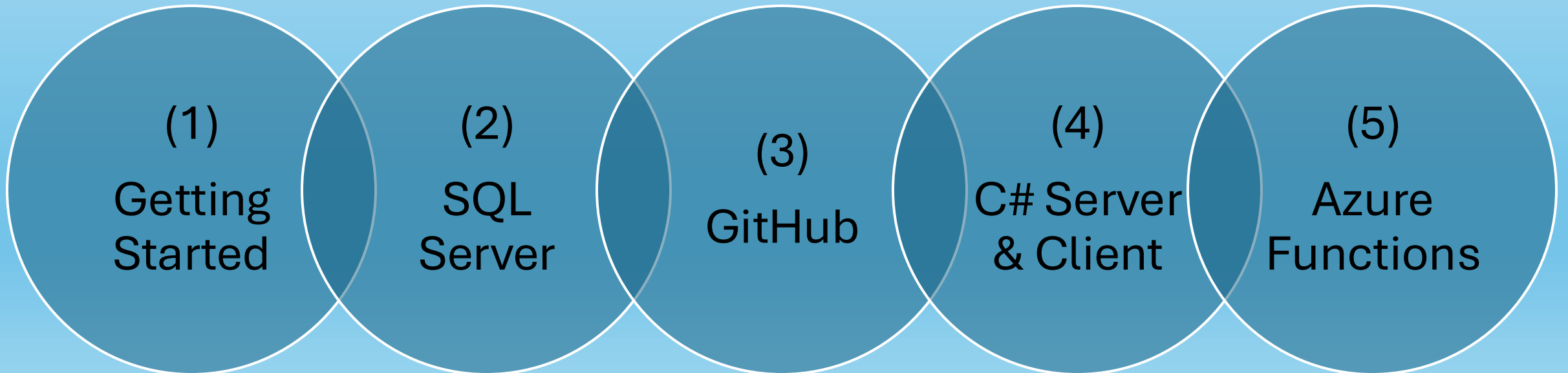
OFFICIAL MCP REGISTRY API

Where are we?



Workshop

- Wet your fingers by going through five tutorials at <https://medhat.ca/mcp.html>
- Best go through 1 ... 5 in sequence
- Ask others (or myself) if you are stuck and we will get through any bumps together.



Thank you

