

## ■AI-Driven Development — 30-Day Challenge (Task 4)

Marks: 10 | Deadline: 48 Hours

Class Slot: Friday — 6:00 PM to 9:00 PM

Instructor: Sir Hamzah Syed

Name: Ayaan Ahmed Khan

### 1. What Are MCP Servers?

MCP (Model Context Protocol) servers act as a bridge between your AI model or CLI and the tools you want it to use.

They provide safe access to:

- Files
- APIs
- Local functions
- External systems like GitHub, Firebase, etc.

In simple terms:

An MCP server gives Gemini CLI “tools” so it can perform actions instead of only replying with text.

### 2. Why MCP Servers Are Useful

- Add abilities to an AI model instantly.
- Standard format → plug into multiple systems easily.
- Removes complexity — no need to wire tools manually.
- More modular, more maintainable.
- Students can build advanced tools without deep backend knowledge.

### 3. The Problem

Gemini CLI cannot create full agents by itself.

Its agent-building support is limited.

So creating full agents inside Gemini CLI becomes difficult and frustrating.

### 4. The Solution — Context7

Context7 is a complete MCP server providing powerful tools and updated documentation.

It includes:

- Python docs
- OpenAgents SDK docs
- Supabase docs
- FastAPI docs
- Modern frameworks + auto-updating docs

This ensures:

- Gemini CLI follows correct documentation
- Fewer errors
- Updated workflow support
- Students don't have to constantly check new docs

## 5. Task 4 — Connecting Context7 MCP Server to Gemini CLI

Follow the MCP setup guide below:

<https://www.notion.so/Personalization-Chatbot-with-Chainlit-2b2644e5197680728913dc57ee7df803>

This includes:

- How to add the Context7 MCP server to Gemini CLI
- (Students must complete this before practical work.)

## 6. Practical Task — Study Notes Summarizer & Quiz Generator Agent

Tech Used:

- OpenAgents SDK
- Streamlit (recommended)
- PyPDF
- Gemini CLI
- Context7 MCP

Features:

### A. PDF Summarizer

- Upload PDF → extract text → clean summary.

## B. Quiz Generator

- Uses original PDF text.
- Generates MCQs or mixed-style quizzes.

After completion:

- Upload work to GitHub.
- Add screenshot of the Gemini CLI prompt inside the same GitHub repo.

## 7. Important Links

Context7:

<https://context7.com>

MCP Setup Guide:

<https://www.notion.so/Personalization-Chatbot-with-Chainlit-2b2644e5197680728913dc57ee7df803>

Prepared by Asma Yaseen

Supervised by Sir Hamzah Syed