

# TASK 2

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## **Nine Pillars Understanding**

Why using AI Development Agents (like Gemini CLI) is better for your growth as a system architect:

- Automates repetitive setup tasks, saving time.
- Lets you focus on system-level thinking instead of boilerplate work.
- Reduces cognitive load so you can design better architectures.
- Helps you learn faster by removing technical friction.
- Improves productivity, letting you study patterns, flows, and scalability.

How the Nine Pillars of AIDD help a developer grow into an M-Shaped Developer:

- AI-assisted coding improves depth in programming.
- Automated environments build speed and reliability.
- Intelligent debugging develops stronger problem-solving.
- Documentation and reviews strengthen communication and code quality.
- Architecture guidance grows system-design skills.
- Testing automation builds reliability expertise.
- DevOps help expands cross-domain skills.
- Continuous learning builds multiple specializations.
- Combined, these create a developer with broad + deep skills (M-shaped).

## **Architecture Thinking**

How architecture-first thinking changes the role of a developer in AIDD:

- Developer shifts from just writing code to designing systems.
- Focus becomes structure first, code second.
- Developer thinks about flows, interactions, and components.
- Becomes a system designer and problem solver.
- Creates scalable and maintainable systems.

Why developers must think in layers and systems instead of raw code:

- Prevents spaghetti code.
- Each layer has clear responsibility.
- Easier debugging, testing, and scaling.
- Large systems become manageable.
- Software becomes modular, clean, and future-proof.
- Enables better team collaboration.

## Vibe Coding vs Specification-Driven Development (SDD)

1. Why Vibe Coding creates problems after one week:

- No clear plan leads to messy code.
- Hard to maintain and scale.
- Requirements keep shifting.
- Debugging becomes time-consuming.
- Team collaboration suffers.

2. How SDD prevents those problems:

- Clear written specs before coding.
- Predictable and structured development.
- Easier debugging and scaling.
- Everyone follows the same roadmap.
- Final system becomes cleaner and reliable.

## MCQs with Options and Correct Answers

1. What is the main purpose of Spec-Driven Development?

- A. Make coding faster
- B. Clear requirements before coding begins
- C. Remove developers
- D. Avoid documentation

✓ Correct Answer: B. Clear requirements before coding begins

2. What is the biggest mindset shift in AI-Driven Development?

- A. Writing more code manually
- B. Thinking in systems and clear instructions
- C. Memorizing more syntax
- D. Working without any tools

✓ Correct Answer: B. Thinking in systems and clear instructions

3. Biggest failure of Vibe Coding?

- A. AI stops responding
- B. Architecture becomes hard to extend
- C. Code runs slow
- D. Fewer comments written

✓ Correct Answer: B. Architecture becomes hard to extend

4. Main advantage of using AI CLI agents (like Gemini CLI)?

- A. They replace the developer completely
- B. Handle repetitive tasks so dev focuses on design & problem-solving
- C. Make coding faster but less reliable
- D. Make coding optional

✓ Correct Answer: B. Handle repetitive tasks so dev focuses on design & problem-solving

5. What defines an M-Shaped Developer?

- A. Knows little about everything

- B. Deep in only one field
- C. Deep skills in multiple related domains
- D. Works without AI tools

✓ Correct Answer: C. Deep skills in multiple related domains

