

## Week 1 Quiz 1

1. Which of the following best describes a "design paradigm" as presented in the lectures?

- A structured approach to software architecture and organization that addresses common development challenges
- A set of consistent visual cues presented to the users of an application
- A set of questions asked of either colleagues or an LLM-assistant throughout development to guide a project's design
- A list of tests that a piece of software must pass in order to be considered well-designed

*Design paradigms help structure how software is designed and how teams work on that software to address common challenges*

2. Which of the following is NOT an advantage of Configuration Driven Development (CDD)?

- Flexibility, as software can be easily adapted to changing environments and needs Non-technical colleagues can change an application's behavior by adjusting configuration files but leaving source code alone
- Reduced bugs, as application behavior can be adjusted without editing source code
- More secure applications, as sensitive information can be safely stored in configuration files

*It's not necessarily true that applications built with a CDD approach will be any more secure. Information in configuration files is just as likely to be compromised as if it was stored in source code.*

3. Which of the following best describes how the json and pickle libraries and their associated file formats compare to one another?

- JSON files can only be used in a Python environment, while Pickle files can be used by a wide variety of programming languages
- json can read and write serialized data to both strings and to files, while pickle can only read and write to files.
- The json library is used for managing data written in JSON, while pickle can handle the serialization and deserialization of a wide variety of data types in Python, in particular complex objects.
- json is used exclusively when implementing configuration driven development, while pickle can be used when implementing a wide variety of design paradigms

*The json library manages data written in JSON while pickle can serialize a wide variety of file formats.*

4. What is the primary reason you would choose to serialize a piece of data in a program?
- To cryptographically secure its contents
  - To apply the configuration settings contained in that data
  - To convert it to a format that makes it easier to save to disk, move, and reconstruct later
  - To enable it to be processed by an LLM
5. Which of the following is NOT a use-case an LLM could help with when trying to use a design paradigm like Configuration Driven Development when building an application?
- Brainstorming potential design paradigms that meet your project's needs
  - Suggesting libraries and formats to help apply a given design paradigm
  - Exploring common commands with different libraries and packages
  - Applying a variety of data serialization techniques to provided pieces of data

*Tasks like this one should be handled by a dedicated software library*