

Microkernel Architecture

CSSE6400

Richard Thomas

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So far...

Simplicity – Monolith, Pipeline

Modularity – Layered, Pipeline

Definition 1. Extensibility

Features or extensions can be easily added to the software over its lifespan.

Question

How easy is it to extend *Monolith*, *Layered* or *Pipeline*?

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Monolith – Everything in one container 😞

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Layered – Typically all layers 😞

Pipeline – Create a new filter 😊

Definition 2. Interoperability

Software can easily share information and exchange data with internal components and other systems.

Question

What about interoperability?

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Answer

Monolith – Everything in one container

- Internal 😊
- External 😞

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Monolith – Everything in one container

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Layered – Nearest Neighbour

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Question

What about interoperability?

Answer

Monolith – Everything in one container

- Internal 😊
- External 😞

Layered – Nearest Neighbour

- Internal 😊
- External 😞

Pipeline – Standard Interface

- Internal 😊
- External 😞

Question

What if I want simplicity, extensibility and interoperability?

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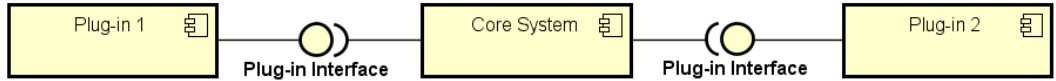
Answer

Microkernel Architecture

Definition 3. Microkernel Architecture

Core system providing interfaces that allow plug-ins to extend its functionality.

Microkernel Architecture



Question

Can you think of a *microkernel architecture*?

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Answer

How about *Intellij*?

References