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6.033 Computer System Engineering
Spring 2009

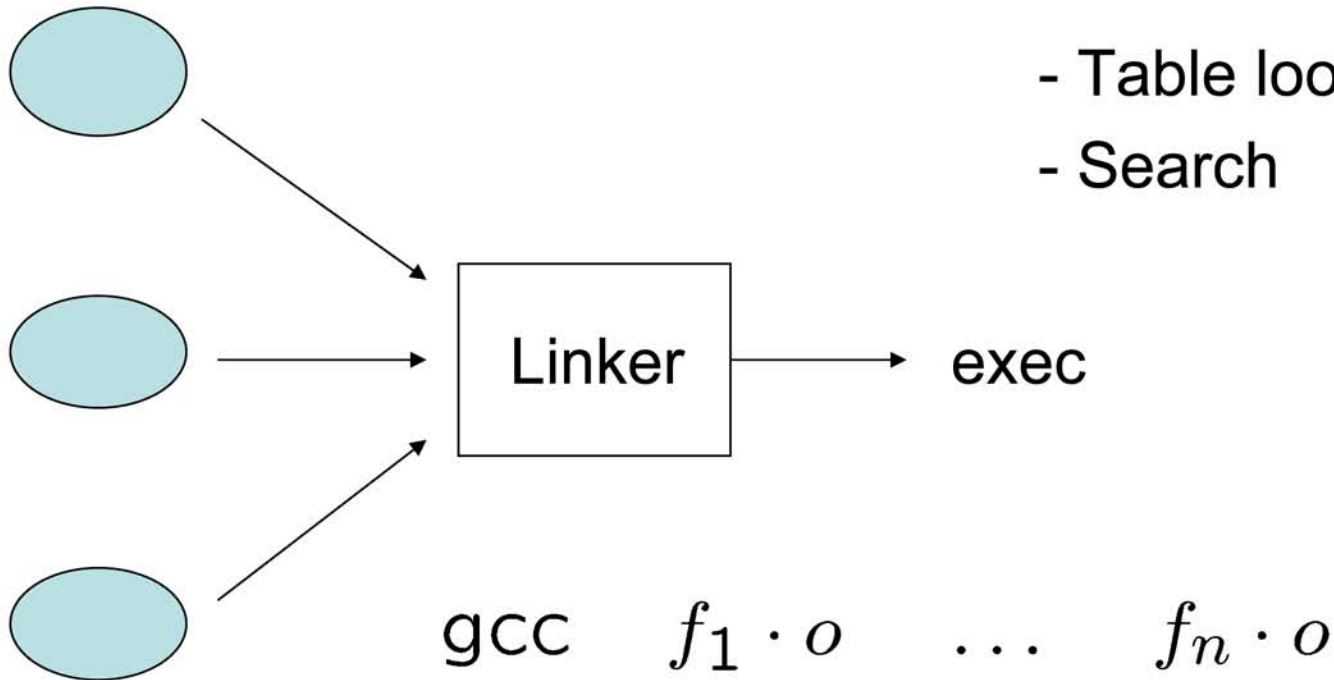
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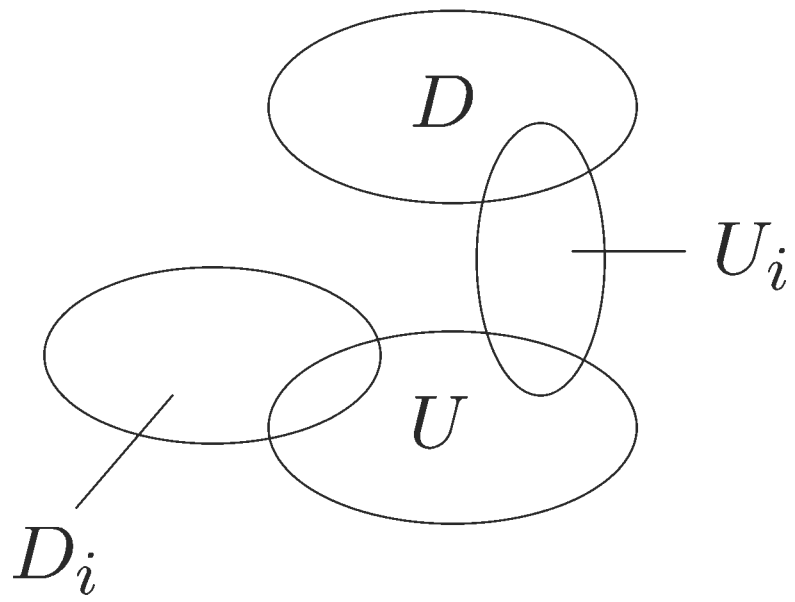
Soft Modularity

Enforced modularity – Client /
Service

Name mapping:

- Table lookup
- Search



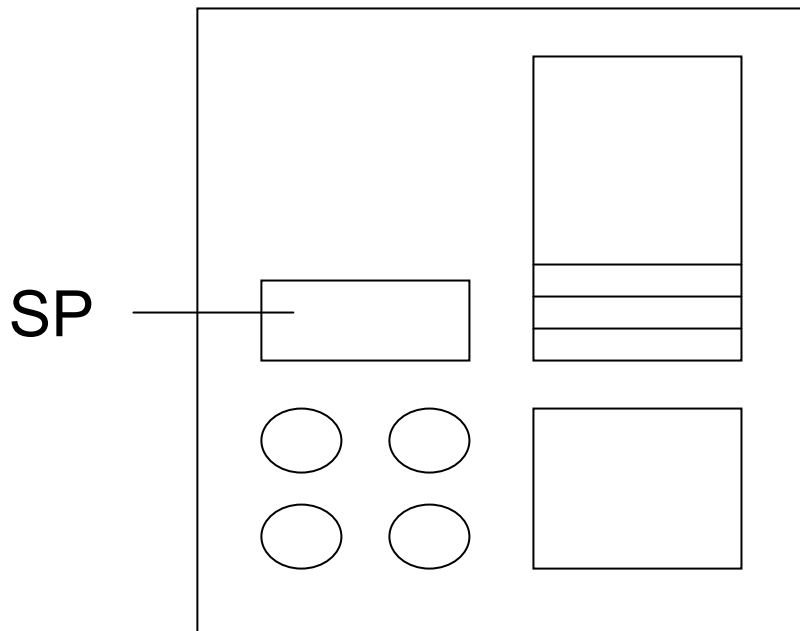


$$D \leftarrow D \cup D_i$$

$$U \leftarrow (U \cup U_i) - D$$

Procedure Contract

Stack Discipline



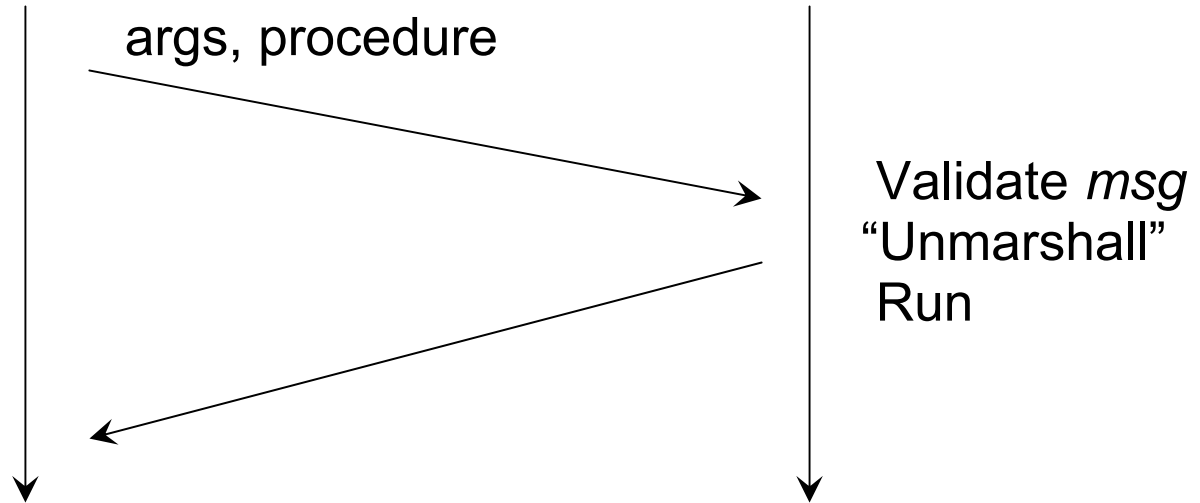
- 1) Callee corrupts stack.
- 2) Callee crashes

→ Fate sharing

Solution 1: Client / Service

Client

Service



- Modular
- Enforced
- Comm. Path → messages

→ Watchdog Timer

- Trusted intermediary
- Clients get enforce modularity

Implementing c/s org:

- Remote Procedure Call (RPC)
 - Sun RPC
 - XML RPC → SOAP

RPC ≠ Procedure Call

- No fate sharing
- Failure vs. extremely slow
 - 1) Exactly-once
 - 2) At-least once → idem-potent
 - 3) At-most once

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- Asynchrony
 - Intermediary