Message Encryption

A pointcut (pc) may designate that:

all modules whose name begins with “send” must have their messages encrypted.

Fragile Pointcut Problem

What if a new module is made that sends messages but whose name begins with “transfer”?

• pc is fragile since it fails to capture the new module.
• Fragile pointcuts can cause software to malfunction.

Fixing Broken Pointcuts

• Requires manually identifying all broken pointcuts.
• Manually identifying all broken pointcuts is:
  • tedious,
  • time-consuming,
  • error-prone, and
  • omission-prone when there are many pointcuts!

Extract commonality between currently selected join points.

Apply extracted patterns to new evolved version.

Hypothesis:

Program elements corresponding to join points selected by a pointcut in a particular version typically share structural commonality that persists throughout subsequent versions.

pc is highlighted in the user-interface (UI) workbench as the developer is typing!

ByHighlights