

The Command Pattern



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Overview



Classification: Behavioral

Encapsulate a request as an object

Parameterize objects

Queues and log operations

Undoable operations and macros

Also know as

Action pattern

Transaction pattern



Demo



Motivating Example:

Command line order processing program

Three operations:

- CreateOrder
- UpdateQuantity
- ShipOrder

Parse the command line arguments

Execute the command

Notify user and log the results



Notes for Demo 1



Notes for Demo 1 (continued)



Problems Discovered

Violates Single Responsibility Principle

Violates Open/Closed Principle

Violates Dependency Inversion Principle

Long list of if/elif clauses



Command Pattern Structure

12





Encapsulate the commands

Information is hidden

Open/Closed principle



Demo



Reimplement the Order Processing System

Use Command Pattern

Rebuild the main program to use it



Notes for demo 2



Notes for demo 2, continued



Summary



Encapsulate behavior

Separate command logic from the client

Command line programs

Add additional capabilities

- Validation
- Undo

Building menus

Assignment has another variant

- Multi-level undo!