



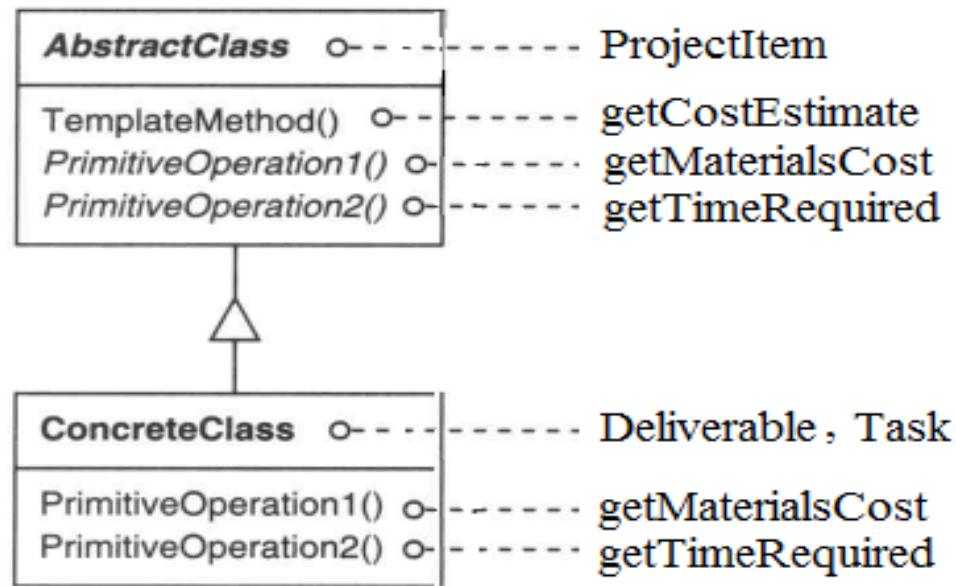
# Design Pattern Detection Lab

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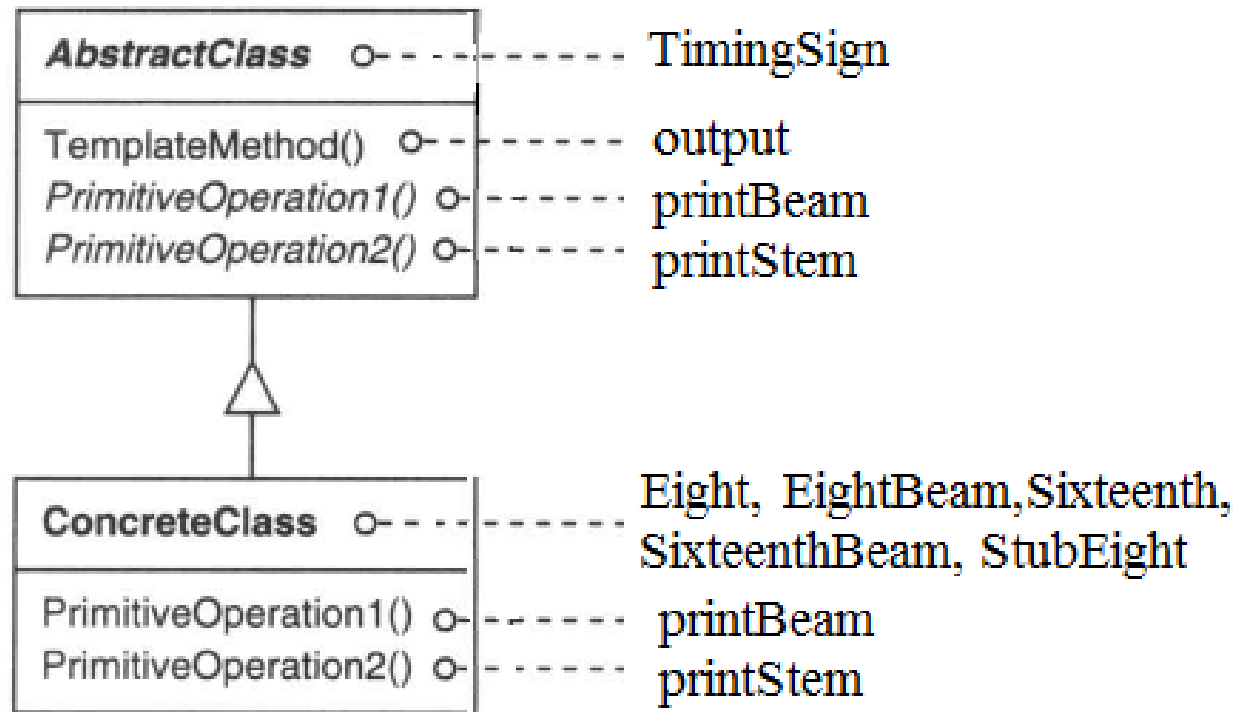
# FINDER

- AJP
  - Template Method



# FINDER

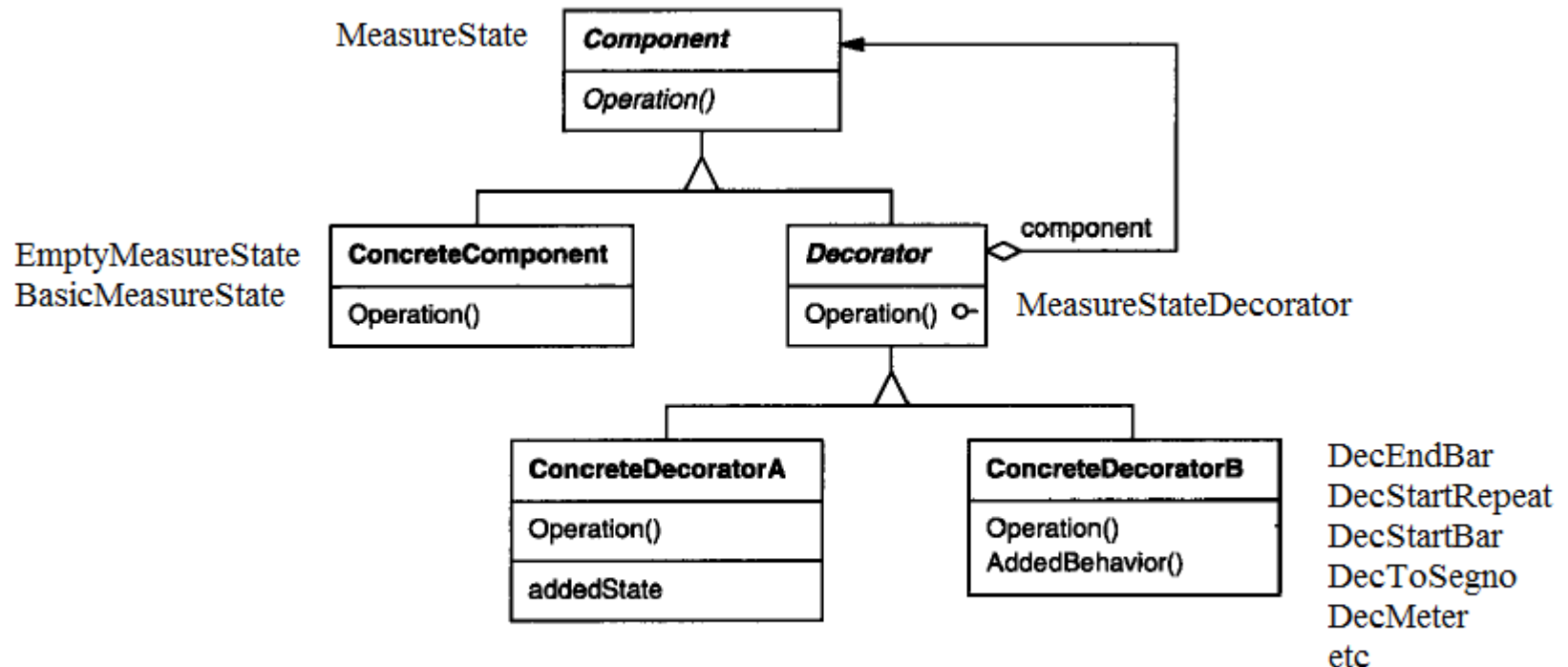
- TAB2PS
  - Template Method



# FINDER

## ■ TAB2PS

### ■ Decorator





# PINOT

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- Process multiple files from different directories in one command.
  - Navigate to source code directory of the system.
  - Type: `find `pwd` -name '*.java' > filelist`
  - Usage: `pinot @filelist`
- Solve the “cannot redirection output problem”.
  - `pinot @filelist >& output`



# Terms

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- True Positive, True Negatives, False Positives, and False Negatives

**tp**

(true positive)

Correct result

**fp**

(false positive)

Unexpected result

**fn**

(false negative)

Missing result

**tn**

(true negative)

Correct absence of result



# Terms

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- Precision:

The fraction of detected instances that are accurate.

$$\text{Precision} = \frac{|\{\text{Accurate Instance}\} \cap \{\text{Detected Instance}\}|}{|\{\text{Detected Instance}\}|}$$

$$\text{Precision} = \frac{tp}{tp + fp}$$

- Recall:

The fraction of accurate instances that are detected.

$$\text{Recall} = \frac{|\{\text{Accurate Instance}\} \cap \{\text{Detected Instance}\}|}{|\{\text{Accurate Instance}\}|}$$

$$\text{Recall} = \frac{tp}{tp + fn}$$



# Discussion

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- Identify true positives, false positives from the results.
- Compare results of the three tools.



# My Recent Work

## ■ General Idea

