

Template Method

Linda Marshall

Department of Computer Science
University of Pretoria

20 August 2021

Steeeeeve is back



Steeeeeve is back, back again
Who is gonna colour him in?

Name and Classification:

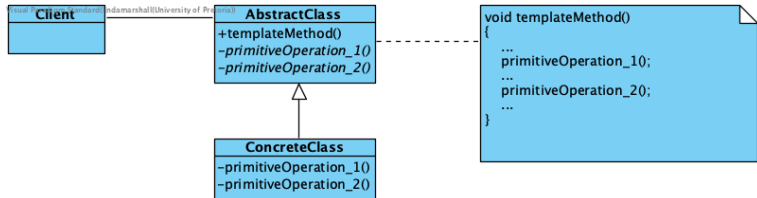
Template Method

(Class Behavioural)

Intent: “Define the skeleton of an algorithm in an operation, deferring some steps to subclasses. Template Method lets subclasses redefine certain steps of an algorithm without changing the algorithm’s structure.”

GoF(325)

“Define the skeleton of an algorithm in an operation, deferring some steps to subclasses. Template Method lets subclasses redefine certain steps of an algorithm without changing the algorithm’s structure.” GoF(325)



AbstractClass

- defines abstract primitive operations that need to be defined by the concrete classes
- implements the template method operation that provides a skeleton of an algorithm

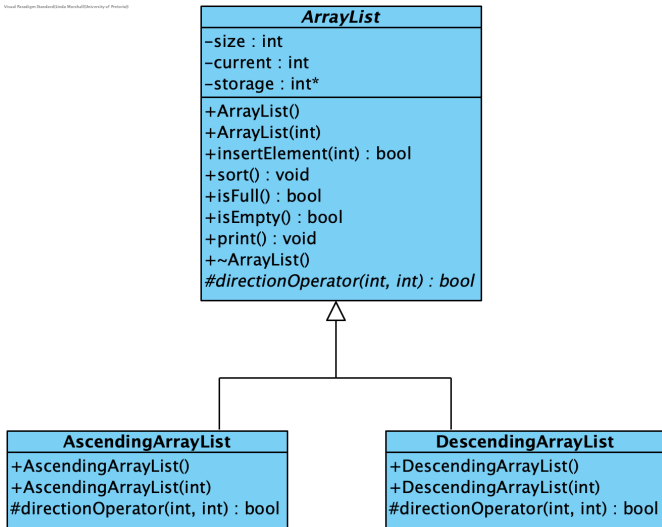
ConcreteClass

- implements the primitive operations defined by the Abstract class

Related Patterns

- **Factory Methods** (107): Often called by template methods.
- **Strategy** (315): Varies the entire algorithm while template method varies part of the algorithm.

Visual Design Standard@Indra Warkah@University of Ponorogo



The Game example comprises 3 classes,
Game an abstract class defining a Template
Method (`void playOneGame();`).
Monopoly and Chess are two games
(concrete classes) inheriting from Game.

The Template Method (function) is defined by:

```
void Game :: playOneGame()
{
    initializeGame();
    int j = 0;
    while (!endOfGame())
    {
        makePlay(j);
        j = (j + 1) % playerCount;
    }
    printWinner();
}
```