

CS 485
Advanced Object Oriented Design

Design Patterns

Strategy Pattern

Spring 2017

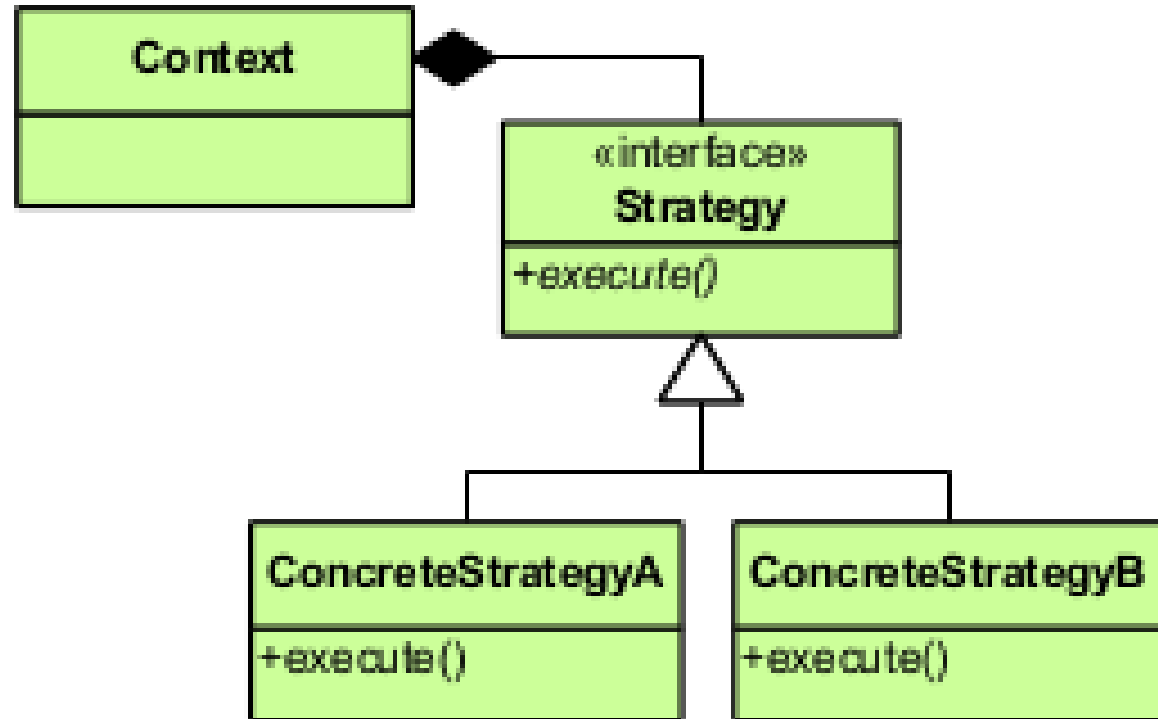
<http://www.netobjectives.com/PatternRepository/index.php?title=PatternsByAlphabet>

<http://www.netobjectives.com/files/books/dpe/design-patterns-matrix.pdf>

Log in to GitHub

Open Shapes in Visual Studio

Chapter 9



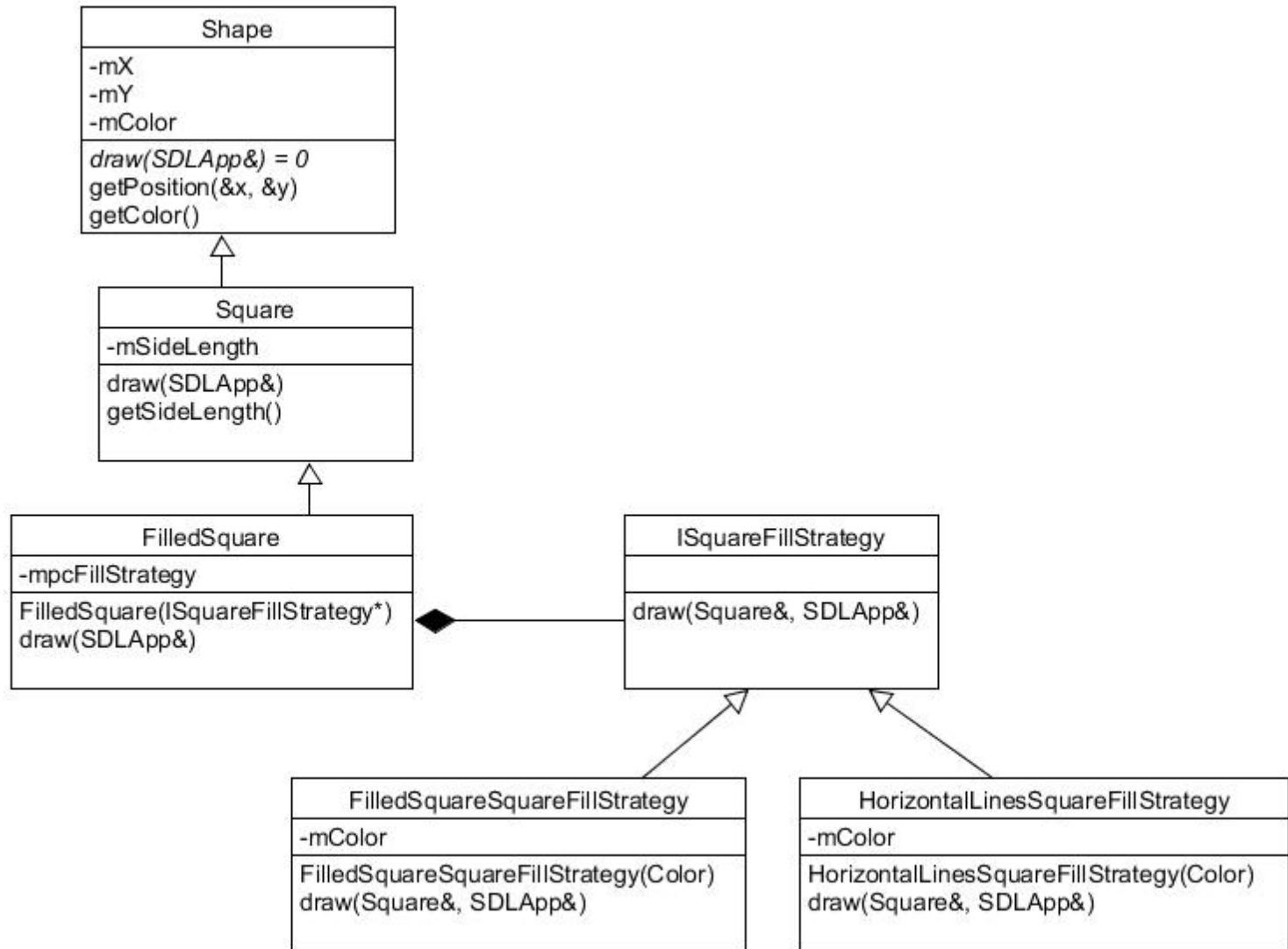
https://en.wikipedia.org/wiki/File:Strategy_Pattern_in_UML.png

Workflow

- Instantiate Context
- Instantiate Concrete Strategy
- Send Concrete Strategy to Context

```
Context cContextObj;  
ConcreteStrategy cConcreteStrat;  
  
cContextObj.setStrategy(cConcreteStrat);  
  
cContextObj.doWork(); // relies on cConcreteStrat's behavior
```

Example



Code

```
void FilledSquare::draw (SDLApp& rcTheDisplay)
{
    mpcFillStrategy->draw (rcTheDisplay, *this);
    Square::draw (rcTheDisplay);
}
```

```
class ISquareFillStrategy
{
public:
    virtual void draw (SDLApp& rcTheDisplay, Square &rcSquare) = 0;

private:
};
```

Code

```
void HorizontalLinesSquareFillStrategy::draw (SDLApp& rcTheDisplay,
Square &rcSquare)
{
    int x, y, sideLen = rcSquare.getSideLength ();

    rcSquare.getPosition (x, y);

    rcTheDisplay.setColor (mcColor);
    for (int newy = y; newy < y + sideLen; newy += 6)
    {
        rcTheDisplay.drawLine (x, newy, x + sideLen, newy);
    }
}
```

C++ example code for lectures and labs <http://zeus.cs.pacificu.edu/chadd/cs4...>

Edit

New Add topics

31 commits

3 branches

1 release

1 contributor

GPL-3.0

- Go to your private Shapes repository
- Click release
- Create a New Release or Draft New Release
- Tag version: Shapes_Simple
 - top left under releases
- Publish release

Release

- Makes a tag in Git for the latest commit
- Can easily go back to that state via the tag
 - visible in Visual Studio (Team Explorer | Branches | Actions | View History) after next Pull
 - Team Explorer | Sync | Pull

Lab

ISquareFillStrategy.h
FilledSquare.h/.cpp
HorizontalLinesSquareFillStrategy.h/.cpp

- Download Shapes_02_Strategy.zip and add the .cpp and .h files to your Shapes project
 - drop files in project folder, Add Existing Item

- In main()

```
cTheCollection.addShape (  
    new FilledSquare (100, 400, 400,  
        new HorizontalLinesSquareFillStrategy ({ 255,0,0,255 })));
```

- Read the new files
- Write VerticalLinesSquareFillStrategy class (.h/.cpp)
- Add new FilledSquare in main() as above.