Design Pattern Lab Final

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Code Smells:

1. Multiple if statement in class calculator , method calculateBiImpl (Switch Statement smell)

2. Multiple if statement in class calculator , method calculateMono (Switch Statement smell)

3. Multiple if statement in class UI , method actionPerformed (Switch Statement smell)

4. Long method public void init in class UI.

5. Large class Calculator

6. Large class UI

7. Data clumps in UI class (all the Jpanels can be always seen together)

Violated Design Principles:

1. Class Calulator violates SOLID(Single responsibility) principle.

Applied Design Patterns:

1.**Strategy pattern** for calculateBiImpl

New Files created:

      a.CalculateBiImplStrategy Interface

      b. addOperator class

      c. minusOperator class

      d. multiplyOperator class

      e. powerOperator class

2. **Strategy pattern** for calculateMono

New Files created:

       a.CalculateMonoStrategy Interface

       b. squareOperator class

       c. squareRootOperator class

       d. devideByOneOperator class

       e. sinOperator class

       f. cosOperator class

       g. tanOperator class

       h. logOperator class

       I. lnOperator class

       j. rateOperator class

       k. abdOperator class

3. **Extarct 2 classes** from claculator class:

       a. CalculateBilmp class

       b. CalculateMonoOperatorMode class

4. **Builder pattern** can be applied to UI class

5. Strategy pattern can be used in ActionPerformed mathod of UI class