## Lab 6

### Task

The calculator application in [the demomvc project](http://cs.utsa.edu/~cs3443/notes/demomvc/demomvc.zip) could use more buttons for various functions. Expand the current 4x4 grid into a 5x5 grid. This means you will need to create code for 9 more buttons.

If you need some ideas for buttons, here are some:

* Clear
* Binary Operators: exponentiation, mod
* Unary Operators: exponential (base 2, base *e*, base 10), factorial, logarithm (base 2, base *e*, base 10), plus/minus, reciprocal, square root, squared, trigonometric (sine, cosine, etc.)
* Memory store, memory recall

You might like the behavior of the calculator with this modification. The first if condition (start) in CalculatorModel's update method could also check that the user has entered a digit or a period.

The name of your Eclipse project should be abc123-lab6, where you replace abc123 with your abc123 id. The name of the file that contains the main method should remain Calculator.java. The remaining Java files should also keep their original names. All of them should still be part of the calculator package. To submit the project, export the project and upload the zip file to Blackboard.

### Comments

Add javadoc comments as needed for any additions or changes.

### UML Class Diagram

Create a UML class diagram using Violet.

### Rubric

* An incorrect submission will possibly get zero points. A project that does not compile will receive at most 50 points total.
* (80 pts.) Each additional working button is worth 10 points up to a maximum of 80 points.
* (10 pts.) There are javadoc comments: at least one for each class and comments for each method, constructor and constant.
* (10 pts.) A UML class diagram is included that has all the classes (including the Calculator class) and all the constructors, methods, variables and constants of each class.