The First Challenge Problem

Design and implement an ArithmeticTester program that will do the following:

- There will be two TextFieldViews that will let the user type in two operands for an arithmetic operation and another TextFieldView that will show the result of the selected arithmetic operation.
- There will be a BooleanView where user selects whether to perform integer arithmetic or floating point arithmetic.
- There will be five action buttons, each representing one of the five arithmetic operations (+, -, *, /, %). When the user selects one of these buttons, the desired arithmetic operation will be performed. If the operation is illegal (there is no % for doubles), the output TextFieldView will so indicate.
- There may be a Clear button that will clear all three TextFieldViews to blanks.

![Arithmetic Tester](image)

The Second Challenge Problem

Design and write a CirclePainter program that will do the following:

- The user selects the radius of a circle by typing a value in a TextFieldView.
- There will be two action buttons: Increase Radius and Decrease Radius that will cause the radius to change by 10, not exceeding 100 and not getting below 10
- The user selects the color in the ColorView.
- The user selects the center with a mouse click.
- The mouse motion is mirrored in a pair of TextFieldViews or in a Point2Dview.
- The mouse click not only selects the center, but also causes the circle to be painted.
- Optionally, the history may be saved to a TextAreaView and the record may be saved to a file.