Hail Casear

A Robust Roman Numberal Calculator

User Interface

Layout

Drop down menus	
Input/Output Screen	
Calculator Buttons	Calculate Button
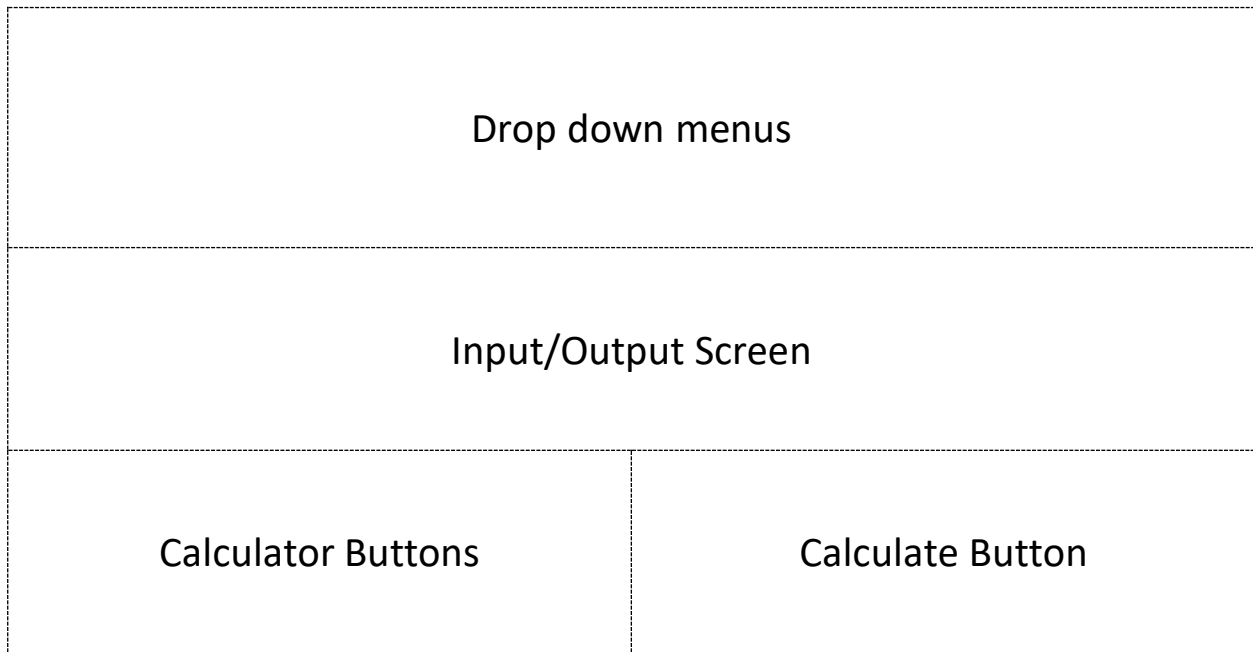
RN_Calc_UI(rnc)

Font: Times New Roman, Plain 16pt

Drop Down Menu

Help Caesar

- Roman Numeral Explanation
- Calculator Guide

About Us

- Photo and Credits of the team

Guide

- Guide for how to use the calculator

String expressionBuilder(String s)

- Switch cases
- Keeps track of the number of parentheses within expression
- Keeps track of the last non numeral within the expression
- Adds characters to the string
- Checks to see if it can do a backspace

JMenuItem guideMenu = new JMenuItem("Guide");

- Displays image of the guide

JPanel contentPanel = new JPanel():

- Displays a new JPanel with a grid layout (4,4)
- Appends all the buttons to a container so you could add functions to them

JLabel inputLabel = new JLabel("");

- Where user input is displayed
- Where final result of the calculation is displayed

JScrollPane jsp = new JScrollPane(inputLabel, veritcal, horizontal);

- Allows user to scroll through the label if their expression is longer than the label's x-axis
- Scrollbar only appears when necessary

Button Action Listeners:

- Adds functions to the buttons
- Displays the button onto the calculator

void display(JLabel l, String s) Method:

- Calls isValid method to verify the input
- Checks if the input was the '=' button to send the expression to the Core's calc method
- Calls expressionBuilder method
- Sets inputLabel's text to the valid expression

boolean isValid(String s) Method:

- Checks if an operator is being added to the beginning of the expression
- Allows backspace
- Checks if a parenthesis is valid
- Checks if the '$' variable exists within the expression
- Prevents an operator being put in front of another operator
- Prevents the '$' variable from being put within a Roman numeral
- Uses a while loop to find the last operator in the expression
- Uses that location to verify the current Roman numeral with the Core's checkNumeralOrder method

boolean isOperator(String s) Method:

- Returns true if the string is one of the four operators, ^ * - +

boolean isNumeral(String s) Method:

- Returns true if the string is one of the seven Roman numerals, I V X L C D M

void findLastNonNumeral() Method:

- Searches through the StringBuilder from the end within a while loop to find the latest non-numeral