Project is made by group: Metin Dumandağ - 2015400048, Fatih Iver - 2016400264

<p align="center">SWEET CALCULATOR</p>

Sweet Calculator is a calculator which supports following operations:

- Addition
- Subtraction
- Multiplication
- Division

These operations both are supported in base 10 and 16. Default number system is base 10. Modes can be changed by using "Dec" and "Hex" buttons. When decimal number system is active, "A", "B", "C", "D", "E", "F" buttons are not active and cannot be pressed. They will not respond to clicks and their colors are like dim gray. After "Hex" is activated to return to decimal number system back, simply press the "Dec" button. Hexadecimal base related buttons will be deactivated.

Division does integer division and floating-point numbers are not supported. Division by zero will result in an error which is prompted in the calculator screen.

Multiplication and division has precedence over addition and subtraction. Multiplication and division has same precedence and will be evaluated from left to right. This is same for addition and subtraction.

For any reason, "Clr" button can be used to reset the calculator. It simply clears the screen.

After an operator is present to the screen, all operator buttons including "=" button will be deactivated to prevent user to enter to operator next to each other without having number between operators. One decimal or hexadecimal digit is enough to activate operators button including equality button.

If user changes the mode at a time after some inputs, user will have lost what s/he has been entering. In the calculator's screen, user will be informed about system which will be used after this point of time. Operators buttons are deactivated since no operators are allowed before presenting at least one digit. No need to clear the screen to get rid of the info screen, pressing a digit button is enough.

Implementation

Sweet calculator has horizontal layouts which are inside a vertical layout. Each horizontal layout but not the first one includes 4 buttons. First layout is consisted of a label to inform user about the current state of the calculator. After user inputs what she/he wants, then press "=" equal button to see the result. Sweet calculator will take the input as a string, then tokenize it. Then sweet calculator does two passes. In the first pass, calculator iterates through tokenized input from left to right and calculate results of multiplication and division since they have precedence over addition and subtraction. In the second pass, calculator iterates through updated tokens and calculates for addition and subtraction. Two passes are just enough since parenthesis are not supported, there is no need for parsing or a parsing grammar.