

Folder	Class	Class Details	Constructor / Methods	Constructor / Methods Details
n/a	AppRunner.java	*Class Purpose: to start the program *Class Dependency: creates WelcomeWindow class *APIs/Libraries used: n/a	Main()	* Purpose: to create a new WelcomeWindow Object * Dependency: calls and create WelcomeWindow object * Visibility: public * Intake parameters: String[] args * Return type: void
userInterface	WelcomeWindow.java	*Class Purpose: to create the welcome window and direct user to the main page. *Class Dependency: created by AppRunner class and creates MainWindow class *APIs/Libraries used: javax.swing and java.awt *Implements: ActionListener interface	WelcomeWindow(Constructor)	* Purpose: to build welcome window and set window's visibility to true * Dependency: called by AppRunner.class * Visibility: public * Intake parameters - n/a
			buildWelcomePage()	* Purpose: to build welcome window * Dependency: called by WelcomeWindow constructor and calls actionPerformed(e) method * Visibility: private * Intake parameters: n/a * Return type: void
			actionPerformed(ActionEvent)	* Purpose: to create MainWindows object and direct user to main page and implemented from ActionListener interface * Dependency: called by buildWelcomePage() method and calls MainWindows constructor * Visibility: public * Intake parameters: ActionEvent e
	MainWindow.java	*Class Purpose: to create the main window and to receive user input and display the calculation result *Class Dependency: created by WelcomeWindow class, creates CalculatorCentral class object and received calculation result from CalculatorCentral object class; *APIs/Libraries used: javax.swing and java.awt *Implements: ActionListener interface	MainWindow(Constructor)	* Purpose - to build main window and set window's visibility to true * Dependency - called by WelcomeWindow.class * Visibility - public * Intake parameters - n/a
			buildMainWindow()	* Purpose: to build main window, to take user input from text field and to display the calculation result * Dependency: called by MainWindow constructor and calls actionPerformed(e) method * Visibility: private * Intake parameters: n/a * Return type: void
			actionPerformed(ActionEvent)	* Purpose: implemented from ActionListener interface; to create CalculatorCentral object and pass input string; to receive calculation result from CalculatorCentral object, and to clear input field and result field when clicking 'clear'; * Dependency: called by buildWelcomePage() method and calls CalculatorCentral constructor * Visibility: public * Intake parameters: ActionEvent e
coreCalculator	CalculatorCentral.java	*Class Purpose: be the center of passing variables amongst calculation related classes *Class Dependency - created by MainWindow class and receive user input from MainWindowClass' method * - creates GateKeeper class to validate user input * - creates MainCalculatorStringHandler class to break string into a list (infix notation) * - creates MainCalculatorRPNConversion class to convert the list (infix notation) into reverse polish notation * - creates MainCalculatorCalculation class to calculate the result * - return calculation result back to MainWindow class *APIs/Libraries used - java.util.List	CalculatorCentral(Constructor)	* Purpose: create CalculatorCentral and receive input string from MainWindow class * Dependency: called by MainWindow class * Visibility: public * Intake parameters: String inputStringFromMainWindow
			processingCentral()	* Purpose - be the center of passing variables amongst calculation related classes * - implements various "Watch Towers" to monitor intermediate results * Dependency - called by MainWindow class * - creates GateKeeper class to validate user input * - creates MainCalculatorStringHandler class to break string into a list (infix notation) * - creates MainCalculatorRPNConversion class to convert the list (infix notation) into reverse polish notation (RPN) * - creates MainCalculatorCalculation class to calculate the result * - return calculation result back to MainWindow class * Visibility - public * Intake parameters - n/a
	GateKeeper.java	*Class Purpose - to perform a sanity check on user's input string *Class Dependency - created by CalculatorCentral.java class * - return the sanity check result back to CalculatorCentral class *APIs/Libraries used - java.util.HashSet and Stack	sanityCheck(String)	* Purpose - to perform a sanity check on user's string input * - to perform 5 types (9 cases) of checks (case details are below.) * Dependency - called by CalculatorCentral class * - return calculation result back to CalculatorCentral class * Visibility - public * Intake parameters - inputString from CalculatorCentral class * Return type - sanity check results (either an error message or a pass stamp)
			isAOperator(char)	* Purpose - to check if a character is an operator * Dependency - called by sanityCheck method * Visibility - private * Intake parameters - one character from sanityCheck method * Return type - boolean
	MainCalculatorStringHandler.java	*Class Purpose - to break string into a list (infix notation) *Class Dependency - created by CalculatorCentral.java class * - receive strings that passed Gate Keeper class * - return the infix notation array back to CalculatorCentral class *APIs/Libraries used - java.util.ArrayList *Interface used - java.util.List	inputStringToList(String)	* Purpose - to break string into a list (infix notation) * Dependency - called by CalculatorCentral class * - return list back to CalculatorCentral class * Visibility - public * Intake parameters - inputString from CalculatorCentral class (NOTE: string passed Gate Keeper. * Return type - infix notation in List format
			Group of Helper Methods isAOperator(int) isARightParenthesis(int) isANumber(int) isADecimal(int)	* Purpose - to check if a character is an operator/ right parenthesis / number / decimal * Dependency - called by inputStringToList method * Visibility - private * Intake parameters - index * Return type - boolean
	MainCalculatorRPNConversion.java	*Class Purpose - to convert the list (infix notation) into reverse polish notation (RPN) *Class Dependency - created by CalculatorCentral.java class * - receive ArrayList processed by MainCalculatorStringHandler * - return the RPN array back to CalculatorCentral class *APIs/Libraries used - java.util.HashMap, LinkedList, Stack *Interface used - java.util.List, Map	convertInfixToRPN(List)	* Purpose - to convert the list (infix notation) into reverse polish notation (RPN) * Dependency - called by CalculatorCentral class * - receive ArrayList processed by MainCalculatorStringHandler * - return RPN list (LinkedList) back to CalculatorCentral class * Visibility - public * Intake parameters - infix array processed by MainCalculatorStringHandler * Return type - Linked List in RPN format
			isANumber(String)	* Purpose - to check if a character is a number * Dependency - called by convertInfixToRPN method * Visibility - private * Intake parameters - String * Return type - boolean

	MainCalculatorCalculation.java	<div><div><div><div>*Class Purpose</div><div>- to calculate the result based on RPN from MainCalculatorRPNConversion</div></div><div><div>*Class Dependency</div><div>- created by CalculatorCentral.javaclass</div></div><div><div>*</div><div>- receive RPN List processed by MainCalculatorRPNConversion</div></div><div><div>*</div><div>- return the final result back to CalculatorCentral class</div></div><div><div>*APIs/Libraries used</div><div>- java.util.Stack</div></div><div><div>*Interface used</div><div>- java.util.List</div></div></div></div>	<div><div><div><div>calculateRPN(List)</div><div><div>* Purpose</div><div>- to calculate the final result</div></div><div><div>* Dependency</div><div>- called by CalculatorCentral class</div></div><div><div>*</div><div>- receive RPN List processed by MainCalculatorRPNConversion</div></div><div><div>*</div><div>- return final result back to CalculatorCentral class</div></div><div><div>* Visibility</div><div>- public</div></div><div><div>* Intake parameters</div><div>- RPN List processed by MainCalculatorRPNConversion</div></div><div><div>* Return type</div><div>- Double</div></div></div></div></div> <div><div><div><div>isANumber (String)</div><div><div>* Purpose</div><div>- to calculate the final result</div></div><div><div>* Dependency</div><div>- called by CalculatorCentral class</div></div><div><div>*</div><div>- receive RPN List processed by MainCalculatorRPNConversion</div></div><div><div>*</div><div>- return final result back to CalculatorCentral class</div></div><div><div>* Visibility</div><div>- public</div></div><div><div>* Intake parameters</div><div>- RPN List processed by MainCalculatorRPNConversion</div></div><div><div>* Return type</div><div>- Double</div></div></div></div></div>
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