Benjamin Larsen
Brandon Horlacher
CS-2450
Summer 2021

Milestone 2: Library

Class Name: AppComponent

Purpose: Angular component for web page. Listens for instruction input for program and listens for user to press Run button to run program.

Functions:

- runProgram()
    - Arguments: None
    - Precondition: User needs to enter a valid program
    - Post condition: App will instruct Processor to execute the program
- addInstruction()
    - Arguments: Instruction (string)
    - Precondition: User needs to enter a valid program
    - Post condition: App will load program into Processor
- validateInstruction()
    - Arguments: Instruction (string)
    - Precondition: User needs to enter an instruction
    - Post condition: Returns whether or not it is valid
- checkForEnterKey()
    - Arguments: Event
    - Precondition: User Presses Enter Key
    - Post condition: Instruction in input box is read into processor

Class Name: Processor

Purpose: Stores necessary values to process program (memory, accumulator, etc). Loads operations iteratively. Prints memory, other values to GUI.

Functions:

- loadNextInstruction()
  - Arguments: None
  - Precondition: Instructions are in memory
  - Post condition: instruction counter will be set to the correct next place
- getValueAtLocation()
  - Arguments: location(number)
  - Precondition: memory location is given
  - Post condition: returns value at given memory location
- setValueAtLocation()
  - Arguments: value(number, location(number)
  - Precondition: User needs to enter a value and location
  - Post condition: Sets memory at given location to given value
- printMemory()
  - Arguments: none
  - Precondition: none
  - Post condition: returns formatted string representation of memory
- printRegisters()
  - Arguments: none
  - Precondition: none
  - Post condition: returns formatted string representation of registers

Class Name: Operation

Purpose: Interface for all operations. Each operation will perform its stated function.

Functions:

- performOperation()
    - Arguments: operand: number, processor: Processor
    - Precondition: operand and processor are passed in
    - Post condition: defined operation is performed on the processor (ie. add, subtract, load, etc)