ChickenContenders/*designDocumentation*

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Problem:

- Can make your own coding standards or follow premade standards
- Problem 1: Using Recursion (NF) take two numbers from user and add them together. Then separate the LSD and separate the remainder until you get to one digit. 529 = 61 = 7
    - Can be whole, int, or float. (Document as an assumption)
    - Must be clear on instructions

Design:

Requirements:

1. Using recursion (NF) – Mandatory
2. Must add two numbers together (F) – Mandatory
3. Find the LSD from the sum (F) – Mandatory
4. Continue to find the LSD until you have a single digit. (F) – Mandatory
5. Validate user input (F) – Optional
6. Output the LSD division in a single line (F)– Optional
7. Using positive integer – Assumption

Input Algorithm:

1. Takes user input (userInput)
2. Validate userInput
3. If valid store in valid
    a) Check valid if positive
        - If positive add to user total userTotal
        - count++;
    b) else
        - prompt user for positive integer
4. else
    a) prompt user for positive integer

LSD Algorithm:

1. Check if tempUserTotal.Length > 1
2. Store userTotal as string in tempUserTotal
3. Store LSD in leastSig
4. Remove LSD from tempUserTotal
5. Add LSD & tempUserTotal to tempTotal
6. Store tempTotal in userTotal

Variables

- var userTotal --- is the added user inputs
- var userInput --- raw input from user before validation
- var tempVar --- temp value of the the popped number
- var valid --- if userInput is an int, it stores it here
- int count --- counts the number of digits in userTotal
- var tempUserTotal --- what stores userTotal as a string
- var leastSig --- stores LSD from tempUserTotal
- var tempTotal --- holds the new total that adds leastSig + tempUserTotal

Test Cases:

- TC01: User inputs a non-integer value (Wrong path)
    - User inputs “hello” into the prompt
    - userInput fails Try/Catch
        - prompts user to enter positive integer

- TC02: User inputs a negative integer (Wrong path)
    - User inputs “-1” into the prompt
    - userInput passes Try/Catch
    - fails valid conditional
        - tells user to enter **POSITIVE INTEGER**
    - User inputs “hello” into the prompt
    - userInput fails Try/Catch
        - prompts user to enter positive integer

- TC03: User inputs valid and invalid
    - User inputs “216”
    - Passes try/catch and valid conditional
    - Prompts for next input
    - User inputs “hello”
        - Fails try/catch
        - Prompts user to enter positive integer

- TC04: User inputs a valid integer (Right path)
    - User inputs: “216”
    - Passes try/catch and valid conditional
    - Prompts for input:
    - User inputs “216”
    - Passes try/catch and valid conditional
    - Adds both numbers to userTotal
    - Continues to LSD algorithm…
    - Displays “9”
    - Exit.

Requirement Traceability Matrix

Requirement Number:	Requirement Description:	Alg Step (line #)
RN:01	Using Recurrsion	#12, #46
RN:02	Must add two numbers	#24
RN:03	Find LSD	#51
RN:04	Continue algorithm until single digit	#46-61
RN:05	Validate User Input	#18-35