Prac 5 Design

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**Problem Description**

• Displays the contents of each of the vectors to the screen

• Empties the contents in each of the vectors

• Fills vecData with a user-provided set of random numbers in a user-provided range.

• Prompts the user for a number and fills vecSmall with those values in vecData which were smaller than the number, vecLarge with those values larger than the number and vecSame with those values equal to the number.

• A function which when given the vecData vector returns a vecSum containing the sums of the digits in those numbers

**Input and Output**

Case 1

|  |  |
| --- | --- |
| Input |  |
| Upper bound | Standard input stream |
| Lower bound | Standard input stream |
| Number of random numbers generated | Standard input stream |
| Output |  |
| N/A |  |

Case 2

|  |  |
| --- | --- |
| Input |  |
| Number to be compared to other values | Standard input stream |
| Output |  |
| All values in array smaller than number entered | Standard output stream |

Case 3

|  |  |
| --- | --- |
| Input |  |
| Number to be compared to other values | Standard input stream |
| Output |  |
| All values in array Larger than number entered | Standard output stream |

Case 4

|  |  |
| --- | --- |
| Input |  |
| Number to be compared to other values | Standard input stream |
| Output |  |
| All numbers equal to the input value | Standard output stream |

Case 5

|  |  |
| --- | --- |
| Input |  |
| N/A |  |
| Output |  |
| Sum of digits in array | Standard output stream |

Option 6

|  |  |
| --- | --- |
| Input |  |
| Null |  |
| Output | |
| Exit Application |  |

**Data Format**

|  |  |  |
| --- | --- | --- |
| Identifier | Data type | Description |
| chOption | Char | Select number 1 to 6 |
| vecNum | Integer | Amount of numbers to be generated |
| intLowerbound | Integer | Lower bound to be generated |
| intUpperbound | Integer | Upper bound to be generated |
| vecLarger | integer | Numbers Higher than inputted values |
|  |  | Numbers lower than inputted |
| vecEqual | Integer | Stores and compares values to display values larger and smaller |
| vecSum | Integer | Sum of digits in a random number |

**Pseudo Code**

vecSum 🡨 VecData

Values 🡨 Get digits from each number

For each value in vector

If digit > 0

Value + n

Else

Next value

Return 🡪 value

UML

