Operational Specification Design

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| **Student** | Pisit Pisuttipunpong | **Date** | 11/12/2024 |
| **Program** | Program 4 | **Program #** | 4 |
| **Instructor** | Sakasit Ramingwong | **Language** | JavaScript |

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| **Scenario Number** | **1** | **User Objective** | Get the Relative size of their datasets | |
| **Scenario Objective** | | Calculate Relative Size of two datasets | | |
| **Source** | **Step** | **Action** | | **Comments** |
| User | 1 | Add data into Program 4 in JSON | |  |
| User | 2 | Run Program 4 | |  |
| System | 3 | Calculating Relative Size | |  |
| System | 4 | Output dataset relative size | |  |
| User | 5 | Read program output | |  |
| User | 6 | Exit Program | | Thank you Program 4 😊 |
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Functional Specification Design

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| **Student** | | | Pisit Pisuttipunpong | | **Date** | 11/12/2024 |
| **Program** | | | Program 4 | | **Program #** | 4 |
| **Instructor** | | | Sakasit Ramingwong | | **Language** | JavaScript |
|  | | | | | | |
| **Class Name** | | Main | | | | |
| **Parent Class** | | - | | | | |
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| **Variables** | | | | | | |
|  | **Declaration** | | | **Description** | | |
|  | Let data = [] | | | Data to store two datasets | | |
|  | Let currentData = [] | | | The current dataset to process | | |
|  | Let currentDataLn = [] | | | The natural log of current data | | |
|  | Let currentDataAvg | | | The average of current dataset | | |
|  | Let currentDataVariance | | | The variance of current dataset | | |
|  | Let currentDataSD | | | The standard deviation of current dataset | | |
|  | Let logRange = [] | | | The logarithmic ranges list of current dataset | | |
|  | Let relativeSize = [] | | | The list of relative size of current dataset | | |
|  | | | | | | |
| **Functions** | | | | | | |
|  | **Declaration** | | | **Description** | | |
|  | Function calculateMean | | | Calculate mean from numbers | | |
|  | Function calculateSD | | | Calculate standard deviation from numbers and mean | | |
|  | Function calculateLogRange | | | To calculate the logarithmic range from avg and SD | | |
|  | Function antiLogarithm | | | To convert the natural log back to their original form | | |
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Logic Specification Design

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| **Program** | Program 4 | **Program #** | 4 |
| **Instructor** | Sakasit Ramingwong | **Language** | JavaScript |

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| Pseudo Code |
| Divide Class LOC by Number of Methods to get LOC/Method Data |
| Separate data into each dataset |
| Each dataset |
| Take Natural Log from dataset |
| Calculating for average |
| Calculation for Standard Deviation |
| Get variance from Standard Deviation |
| Calculate Logarithmic Range |
| Convert anti-logarithm |
| Output Relative Size Ranges each dataset |
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