Operational Specification Design

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| **Student** | Pisit Pisuttipunpong | **Date** | 15/1/2025 |
| **Program** | Program 7 | **Program #** | 7 |
| **Instructor** | Sakasit Ramingwong | **Language** | JavaScript |

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| **Scenario Number** | **1** | **User Objective** | Find significant and prediction interval of given data table | |
| **Scenario Objective** | | Perform significant and prediction interval calculation | | |
| **Source** | **Step** | **Action** | | **Comments** |
| User | 1 | Config data of Table 1 | |  |
| User | 2 | Run Program 7 | |  |
| System | 3 | Perform Significant Calculation | |  |
| System | 4 | Perform Prediction Interval Calculation | |  |
| System | 5 | Output of ,, tail area, *,*, , Range, UPI, LPI | |  |
| User | 6 | Read program output | |  |
| User | 7 | Exit Program | | Thank you Program 7 😊 |
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Functional Specification Design

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| **Program** | | Program 7 | | **Program #** | 7 |
| **Instructor** | | Sakasit Ramingwong | | **Language** | JavaScript |
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| **Variables** | | | | | |
|  | **Declaration** | | **Description** | | |
|  | Let EPS = […] | | Estimated Proxy Size | | |
|  | Let PAMS = […] | | Plan Added and Modified Size | | |
|  | Let AAMS = […] | | Actual Added and Modified Size | | |
|  | Let ADH = […] | | Actual Development Hours | | |
|  | Let n=10 | | The number of datasets | | |
|  | Let dof = n - 2 | | Degree of freedom | | |
|  | Let ,, tail area, *,*, , Range, UPI, LPI | | The output of significant and prediction interval | | |
|  | Let Xk | | Value of X to find estimate and prediction interval | | |
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| **Functions** | | | | | |
|  | **Declaration** | | **Description** | | |
|  | Function calculateB1 | | Calculate B1 | | |
|  | Function calculateB0 | | Calculate B0 | | |
|  | Function calculateR | | Calculate R | | |
|  | Function findTailArea | | Function to find tail area under -x to x | | |
|  | Function t\_distribution\_function | | Find t-distribution | | |
|  | Function simpson\_function | | Find p given x and dof | | |
|  | Function calculateRange | | calculateRange | | |
|  | Function binary\_search | | Find binarySearch of x given p and dof | | |
|  | Function calculateSDfromB | | Calculate standard deviation from B0,B1 | | |

Logic Specification Design

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| Pseudo Code |
| Setting Up the data table |
| Calculate B0,B1, R, R^2 |
| Calculate Tail Area |
| Calculate yk |
| Calculate Range from Binary Search of Simpson Function |
| Calculate UPI |
| Calculate LPI |
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