Operational Specification Template

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| **Student** | 阙俊杰；任兵兵 | **Date** | 7/14/2015 |
| **Program** | Assignment6 | **Program #** | 6 |
| **Instructor** | 荣国平 | **Language** | Java |

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| **Scenario Number** | **1** | **User Objective** | To find out x of a certain p | |
| **Scenario Objective** | | To illustrate x-finding operation | | |
| **Source** | **Step** | **Action** | | **Comments** |
| User | 1 | Enter a number | |  |
| System | 2 | Analyze the input | | Check for format |
| System | 3 | Calculate corresponding p | | Check more or less |
| System | 4 | Add or minus a number from x | | Check if p is within the acceptable error |
| System | 5 | Output the right x | | stop |
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Functional Specification Template

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| **Student** | | | 阙俊杰；任兵兵 | | **Date** | 7/14/2015 |
| **Program** | | | Assignment6 | | **Program #** | 6 |
| **Instructor** | | | 荣国平 | | **Language** | JAVA |
|  | | | | | | |
| **Class Name** | | Program5 | | | | |
| **Parent Class** | |  | | | | |
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| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
|  | Error: double | | | Acceptable error | | |
|  | dirtyBit: String | | | Represent state | | |
|  | dev: double | | | Deviation needed to add or minus | | |
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| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
|  | String CheckMoreOrLess(double p) | | | Judge if corresponding p more or less than correct p | | |
|  | boolean CheckBF(String dirtyBit) | | | If we should halve the addition | | |
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State Specification Template

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| Student | | 阙俊杰；任兵兵 | | | Date | | 7/14/2015 |
| Program | | Assignment6 | | | Program # | | 6 |
| Instructor | | 荣国平 | | | Language | | Java |
|  | | |  | | | | |
| **State Name** | | | | **Description** | | | |
| Start | | | | Start condition for system | | | |
| CheckAccuracy | | | | The state of a system after inputting a x | | | |
| CheckMoreOrLess | | | | The state of a system after checking accuracy | | | |
| CheckBF | | | | The state of a system after checking more or less | | | |
| End | | | | The final state, output | | | |
| **Function/Parameter** | | | | **Description** | | | |
| Error | | | | The corresponding p is within acceptable error | | | |
| dirtyBit | | | | Judge if it is more or less | | | |
| dev | | | | Deviation needed to add or minus | | | |
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| **States/Next States** | | | | **Transition Condition** | | **Action** | |
| Start | | | |  | |  | |
| Start | | | No transition from Start to Start | |  | |
| CheckAccuracy | | | True | | End, and output x | |
| CheckMoreOrLess | | | No transition from Start to CheckMoreOrLess | |  | |
| CheckBF | | | No transition from Start to CheckBF | |  | |
| End | | | No transition from Start to End | |  | |
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| CheckAccuracy | | | |  | |  | |
| Start | | | No transition from CheckAccuracy to Start | |  | |
| CheckAccuracy | | | No transition from CheckAccuracy toCheckAccuracy | |  | |
| CheckMoreOrLess | | | More | | Return corresponding dirtyBit | |
| CheckMoreOrLess | | | Less | | Return corresponding dirtyBit | |
| CheckBF | | | No transition from CheckAccuracy to CheckBF | |  | |
| End | | | No transition from CheckAccuracy to End | |  | |
| CheckMoreOrLess | | | |  | |  | |
| Start | | | No transition from CheckMoreOrLess to Start | |  | |
| CheckAccuracy | | | No transition from CheckMoreOrLess to CheckAccuracy | |  | |
| CheckMoreOrLess | | | No transition from CheckMoreOrLess to CheckMoreOrLess | |  | |
| CheckBF | | | True | | Halve x and return x | |
| End | | | No transition from CheckMoreOrLess to End | |  | |
| End | | | |  | |  | |
|  | | | No transition to any state | |  | |

Logic Specification Template

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| Student | 阙俊杰；任兵兵 | Date | 7/14/2015 |
| Program | Assignment6 | Program # | 6 |
| Instructor | 荣国平 | Language | Java |

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| **Design** | Operational Specification |
| **References** | Functional Specification |
|  | State Specification |
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| **Parameters** | Error: acceptable error |
|  | dirtyBit: String to represent state |
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| Start by initializing the Error and dirtyBit, dev=0.5 |
| Get input |
| Repeat a main loop until corresponding p is within acceptable error |
| CheckMoreOrLess |
| If more or less |
| CheckBF |
| If should be halved |
| Dev\*0.5 |
| Output |
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