Operational Specification Template

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| **Student** | S.C.Li | **Date** | 7-12 |
| **Program** | 6 | **Program #** | 6 |
| **Instructor** | G.P.Rong | **Language** | java |

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| --- | --- | --- | --- | --- |
| **Scenario Number** | **6** | **User Objective** | Caculate intergral | |
| **Scenario Objective** | | Giving a function and a result of an intergral,Caculate the top limit of the intergral | | |
| **Source** | **Step** | **Action** | | **Comments** |
| System | 1 | start | |  |
| System | 2 | Caculate the intergral | |  |
| System | 3 | Check different between p and result | |  |
| CheckDiffer | 4 | Result bigger than p,subtract the xSegment | |  |
|  |  |  | |  |
| CheckDiffer | 5 | Result bigger than p  ,add the xSegment | |  |
| System | 6 | Check last time | |  |
| CheckLastTime | 7 | Divide the xSegment into half | |  |
| System | 8 | Check the subration and E | |  |
| CheckSubtraction | 9 | Jump to step 3 | |  |
| System | 10 | Print the result | |  |
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Functional Specification Template

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| **Student** | | | S.C.Li | | **Date** | 7-12 |
| **Program** | | | Program 6 | | **Program #** |  |
| **Instructor** | | | G.P.Rong | | **Language** | Java |
|  | | | | | | |
| **Class Name** | | CaculatUpperLimit | | | | |
| **Parent Class** | | Object | | | | |
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| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
|  | Intergrate :Intergrate | | | Use this object to caculate the intergral giving funtion and x | | |
|  | errorAccept:double | | | The error between the caculate value and the precise value that can be accecpted . | | |
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| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
|  | double caculate(int dof,double p){ | | | The method that invoke the intergrate and to estimate the approximate value of the x (top limit) | | |
|  | public static void main(String[] args) { | | | Invoke the caculate method and output the result of the program and check whether the result is correct | | |
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State Specification Template

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| **Student** | | S.C.Li | | | **Date** | | 7-12 |
| **Program** | | Program 6 | | | **Program #** | |  |
| **Instructor** | | G.P.Rong | | | **Language** | | Java |
|  | | |  | | | | |
| **State Name** | | | | **Description** | | | |
| start | | | | Starting state | | | |
| BiggerthanP | | | | The caculating result is bigger than the real value of p,the difference is more than the error accept value | | | |
| SmallerthanP | | | | The caculating result is smaller than the real value of p,the difference is more than the error accept value | | | |
| expected | | | | ,the difference is less than the error accept value | | | |
|  | | | |  | | | |
| **Function/Parameter** | | | | **Description** | | | |
| BiggerthanP | | | | Result is Bigger than p :Biggerthan is ==true or ==false | | | |
| lastAdjustLarger | | | | Last time result is Bigger than p :Biggerthan is ==true or ==false | | | |
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| **States/Next States** | | | | **Transition Condition** | | **Action** | |
| start | | | |  | |  | |
| BiggerthanP | | | The caculating result is bigger than the real value of p,the difference is more than the error accept value | | x=x-xSegment | |
| SmallerthanP | | | The caculating result is smaller than the real value of p,the difference is more than the error accept value | | x=x+xSegment | |
| expected | | | the difference is less than the error accept value | | end | |
| start | | | No condition | |  | |
|  | | |  | |  | |
|  | | |  | |  | |
| BiggerthanP | | | |  | |  | |
| BiggerthanP | | | The caculating result is bigger than the real value of p,the difference is more than the error accept value | | x=x-xSegment | |
| SmallerthanP | | | The caculating result is smaller than the real value of p,the difference is more than the error accept value | | xSegment=xSegment/2  x=x+xSegment | |
| expected | | | the difference is less than the error accept value | |  | |
| start | | | No condition | |  | |
|  | | |  | |  | |
|  | | |  | |  | |
| SmallerthanP | | | |  | |  | |
| BiggerthanP | | | The caculating result is bigger than the real value of p,the difference is more than the error accept value | | xSegment=xSegment/2  x=x-xSegment | |
| SmallerthanP | | | The caculating result is smaller than the real value of p,the difference is more than the error accept value | | x=x+xSegment | |
| expected | | | the difference is less than the error accept value | |  | |
| start | | | No condition | |  | |
|  | | |  | |  | |
|  | | |  | |  | |
| expected | | | |  | |  | |
| BiggerthanP | | | No condition | |  | |
| SmallerthanP | | | No condition | |  | |
| expected | | | No condition | |  | |
| start | | | No condition | |  | |
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Logic Specification Template

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| --- | --- | --- | --- |
| **Student** | S.C.Li | **Date** | 7-12 |
| **Program** | Program 6 | **Program #** |  |
| **Instructor** | G.P.Rong | **Language** | Java |

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| **Design** |  |
| **References** |  |
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| --- | --- |
| **Parameters** | result |
|  | x |
|  | E |
|  | p |
|  | xSegment |

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| Function caculate(dof , p) |
| Result=intergrate(dof,x) |
| If(result-p>E) |
| If(reuslt>p) |
| X<- X- xSegment |
| If(result<p) |
| X<- X+xSegment |
| If(last time trend differ |
| Xsegment<- xSegment\*2 |
| Print the result x |
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