Functional Specification Template

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| **Student** | | | Eduardo Sánchez Bautista | | **Date** | 04/05/16 |
| **Program** | | | Program 7 | | **Program #** | 7 |
| **Instructor** | | | Pati Benavides | | **Language** | JAVA |
|  | | | | | | |
| **Class Name** | | Student | | | | |
| **Parent Class** | | None | | | | |
| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | numberOfPrograms:int | | | La cantidad de programas del estudiante | | |
| 2 | programList:ArrayList<Program> | | | Una lista de programas | | |
| 3 | theProxySize:Double | | | El proxy size para calcular sus datos | | |
| **Methods** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | Student() | | | El constructor de la clase que inicializa las variables. | | |
| 2 | Student(Program p) | | | El constructor de la clase que inicializa las variables. | | |
| 3 | Student(ListProgarm) | | | El constructor de la clase que inicializa las variables. | | |
| 4 | isEmpty() | | | Nos indica si existe algún programa o no en el estudiante | | |
| 5 | appendProgram | | | Agreaga un nuevo progarma | | |
| 6 | showProgramInConsole() | | | Muestra elgun progarma en consola o todos. | | |
| 7 | dropProgram(id) | | | Elimina un programa del estudiante | | |
| 8 | getProxies:list | | | Nos da una lista de los proxies de los progarmas del estudiante | | |
|  | getPlanSizes():list | | | This returns a list of all the plansizes of the student¡s programs | | |
|  | getActualSizes():list | | | This returns a list of all the actualSizes of the student¡s programs | | |
|  | getDevTimes():list | | | This returns a list of all the devTimes of the student¡s programs | | |
|  | getProxyAvg():Double | | | Return the avg of all the proxySizes | | |
|  | getPlanSizeAvg():Double | | | Return the avg of all the PlanSizes | | |
|  | getActualSizeAvg():Double | | | Return the avg of all the ActualSizes | | |
|  | getDevTimeAvg():Double | | | Return the avg of all the DevTimes | | |

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| **Class Name** | | Program | | | | |
| **Parent Class** | | None | | | | |
| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | proxySize:Double | | | El proxy size del programa | | |
| 2 | planAdded:Double | | | El tamaño planeado | | |
| 3 | actulAdded | | | El tamañp actual | | |
| 4 | actualTime | | | El tiempo actual | | |
| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | Program(proxi, planSize, actualSize, actualTime) | | | Class constructor initializing all variables | | |
| 2 | Program() | | | Clean class constructor | | |
| 3 | Setters && getters of each sttribute | | | Ach attribute must have a set and get method | | |

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| **Class Name** | | PROBE | | | | |
| **Parent Class** | | None | | | | |
| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | student:Student | | | A Student with all his programs | | |
| 2 | r:Double | | | The r value | | |
| 3 | r2:Double | | | The r2 value | | |
| 4 | tailArea:Double | | | The tail value | | |
| 5 | beta0:Double | | | The beta 0 value | | |
| 6 | beta1:Double | | | The beta 1 value | | |
| 7 | y:Double | | | The y value | | |
| 8 | range:Double | | | The range value | | |
| 9 | upi:Double | | | The upper limit value | | |
| 10 | lpi:Double | | | The lowe limit value | | |
| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | Probe(Studen student) | | | Class constructor initializing all variables | | |
| 2 | Probe() | | | Clean class constructor | | |
| 3 | haveStuden() | | | Boolean value if the probe has any student | | |
| 4 | addStudent(studet) | | | Will add a student | | |
| 5 | dropStudent() | | | Will eliminate the only student | | |
| 6 | calculateBeta0(bea1, xAvg, yAvg) | | | Self explanatory | | |
| 7 | calculateBeta1(xList, yList, xAvg, yAvg) | | | Self explanatory | | |
| 8 | calculateR(xLIst, yList) | | | Self explanatory | | |
| 9 | multiplyLIsts(aLIst, bList) | | | Self explanatory | | |
| 10 | sumatory(theList) | | | Will generate the sumatory of the values in the list given | | |
| 11 | calulateTailArea(r, list) | | | Self explanatory | | |
| 12 | sigmaValue(xLIst, yList, beta0, beta1) | | | Self explanatory | | |
| 13 | calculateRange(xSearchedValue, sigma) | | | Self explanatory | | |

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| **Class Name** | | MainWindow | | | | |
| **Parent Class** | | JFrame | | | | |
| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | buttonCase1To2 | | | This button will trigger a outputWindow with the data calculated | | |
| 2 | buttonCase3To4 | | | Will trigger a inputWindow to get the data for calculations | | |
| 3 | LabelStaticData | | | A label for the button | | |
| 4 | LabelDynamicData | | | A label for the button | | |
| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | MainWindow() | | | Class constructor initializing all variables | | |
| 2 | Class ButtonListener implements ActionLIstener | | | This class will control the buttons actions | | |

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| **Class Name** | | OutputWindow | | | | |
| **Parent Class** | | JFrame | | | | |
| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | buttonGoBack | | | Will go back to previous window | | |
| 2 | JTable | | | With all the data to output | | |
| 3 | DataContainer test1 | | | This will contain the data to display in the output | | |
| 4 | DataContainer test2 | | | This will contain the data to display in the output | | |
| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | OutputWindow(test1, test2) | | | Class contructor | | |
| 2 | Class ButtonListener implements ActionLIstener | | | This class will control the buttons actions | | |

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| **Class Name** | | InputtWindow | | | | |
| **Parent Class** | | JFrame | | | | |
| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | buttonGoBack | | | Will go back to previous window | | |
| 2 | JTable | | | With all the data to output | | |
| 3 | JTable | | | The input for the data in 4 programs | | |
| 4 | buttonCalculate | | | Will trigger the outputWindow | | |
| 3 | DataContainer test1 | | | This will contain the data to display in the output | | |
| 4 | DataContainer test2 | | | This will contain the data to display in the output | | |
| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
| 1 | OutputWindow() | | | Class contructor | | |
| 2 | Class ButtonListener implements ActionLIstener | | | This class will control the buttons actions and will make the calculations | | |