PSP2.1 Project Plan Summary

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| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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| **Summary** | | **Plan** | | |  | **Actual** | | |  | **To Date** | | |
| Size/Hour | | 75 | | |  | 25.16 | | |  |  | | |
| Planned Time | | 120 | | |  |  | | |  |  | | |
| Actual Time | |  | | |  | 310 | | |  |  | | |
| CPI (Cost-Performance Index) | |  | | |  |  | | |  |  | | |
|  | |  | | |  |  | | |  | (Planned/Actual) | | |
| % Reuse | | 50 | | |  | 65 | | |  |  | | |
| % New Reusable | | 100 | | |  | 100 | | |  |  | | |
| Test Defects/KLOC or equivalent | | 1 | | |  | 1 | | |  |  | | |
| Total Defects/KLOC or equivalent | | 1 | | |  | 1 | | |  |  | | |
| Yield % | | - | | |  | - | | |  |  | | |
| ***% Appraisal COQ*** | | 0 | | |  | 0 | | |  |  | | |
| ***% Failure COQ*** | | 0 | | |  | 0 | | |  |  | | |
| ***COQ A/F Ratio*** | | 0 | | |  | 0 | | |  |  | | |
| ***PQI*** | | 0 | | |  | 0 | | |  |  | | |
|  | |  | | |  |  | | |  |  | | |
| **Program Size** | | **Plan** | | |  | **Actual** | | |  | **To Date** | | |
| Base (B) | | 155 | | |  | 155 | | |  |  | | |
|  | | (Measured) | | |  | (Measured) | | |  |  | | |
| Deleted (D) | | 0 | | |  | 0 | | |  |  | | |
|  | | (Estimated) | | |  | (Counted) | | |  |  | | |
| Modified (M) | | 30 | | |  | 15 | | |  |  | | |
|  | | (Estimated) | | |  | (Counted) | | |  |  | | |
| Added (A) | 150 | | | |  | 130 | | |  |  | | |
|  | (A+M − M) | | | |  | (T − B + D − R) | | |  |  | | |
| Reused (R) | 155 | | | |  | 155 | | |  |  | | |
|  | (Estimated) | | | |  | (Counted) | | |  |  | | |
| Added and Modified (A+M) | 185 | | | |  | 170 | | |  |  | | |
|  | (Projected) | | | |  | (A + M) | | |  |  | | |
| Total Size (T) | 305 | | | |  | 285 | | |  |  | | |
|  | (A+M + B − M − D + R) | | | |  | (Measured) | | |  |  | | |
| Total New Reusable | 60 | | | |  | 60 | | |  |  | | |
|  |  | | | |  |  | | |  |  | | |
| Estimated Proxy Size (E) | 172 | | | |  |  | | |  |  | | |
|  | |  | | |  |  | | |  |  | | |
| ***Upper Prediction Interval (70%)*** | | 144 | | |  |  | | |  |  | | |
| ***Lower Prediction Interval (70%)*** | | 144 | | |  |  | | |  |  | | |
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**(continued)**

**PSP2.1 Project Plan Summary (continued)**

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| Student | Alvaro David Lopez Pinilla | Program # | 6 PSP 2.1 |

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| **Time in Phase (min.)** | **Plan** |  | | **Actual** | | | | |  | | **To Date** | | |  | | **To Date %** | |
| Planning | 30 |  | | 64 | | | | |  | |  | | |  | |  | |
| Design | 10 |  | | 14 | | | | |  | |  | | |  | |  | |
| Design Review | 10 |  | | 27 | | | | |  | |  | | |  | |  | |
| Code | 120 |  | | 122 | | | | |  | |  | | |  | |  | |
| Code Review | 10 |  | | 16 | | | | |  | |  | | |  | |  | |
| Compile | 5 |  | | 1 | | | | |  | |  | | |  | |  | |
| Test | 30 |  | | 23 | | | | |  | |  | | |  | |  | |
| Postmortem | 60 |  | | 43 | | | | |  | |  | | |  | |  | |
| Total | 275 |  | | 310 | | | | |  | |  | | |  | |  | |
| ***Total Time UPI (70%)*** | 230 |  | |  | | | | |  | |  | | |  | |  | |
| ***Total Time LPI (70%)*** | 230 |  | |  | | | | |  | |  | | |  | |  | |
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| **Defects Injected** | **Plan** | |  | | **Actual** | | |  | | **To Date** | | | | |  | | **To Date %** |
| Planning | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Design | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Design Review | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Code | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Code Review | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Compile | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Test | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Total Development | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
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| **Defects Removed** | **Plan** | |  | | **Actual** | | |  | | **To Date** | | | | |  | | **To Date %** |
| Planning | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Design | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Design Review | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Code | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Code Review | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Compile | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Test | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| Total Development | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
| After Development | 0 | |  | | 0 | | |  | |  | | | | |  | |  |
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| **Defect Removal Efficiency** | **Plan** | | | | |  | **Actual** | | | | |  | **To Date** | | | | |
| Defects/Hour − Design Review | 0 | | | | |  | 0 | | | | |  |  | | | | |
| Defects/Hour − Code Review | 0 | | | | |  | 0 | | | | |  |  | | | | |
| Defects/Hour − Compile | 0 | | | | |  | 0 | | | | |  |  | | | | |
| Defects/Hour − Test | 0 | | | | |  | 0 | | | | |  |  | | | | |
| DRL (DLDR/UT) | 0 | | | | |  | 0 | | | | |  |  | | | | |
| DRL (Code Review/UT) | 0 | | | | |  | 0 | | | | |  |  | | | | |
| DRL (Compile/UT) | 0 | | | | |  | 0 | | | | |  |  | | | | |

PSP Time Recording Log

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| --- | --- | --- | --- |
| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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| **Project** | **Phase** | **Start Date and Time** | **Int. Time** | **Stop Date and Time** | **Delta**  **Time** | **Comments** |
| Tarea 6 | Planning | 2015-02-28 18:12 | 16 | 2015-02-28 19:32 | 64 |  |
| Tarea 6 | Design | 2015-02-28 19:32 | 0 | 2015-02-28 19:46 | 14 |  |
| Tarea 6 | Design Review | 2015-02-28 19:46 | 0 | 2015-02-28 20:13 | 27 |  |
| Tarea 6 | Code | 2015-02-28 20:13 | 23 | 2015-02-28 23:01 | 145 |  |
| Tarea 6 | Code Review | 2015-02-28 23:01 | 0 | 2015-02-28 23:17 | 16 |  |
| Tarea 6 | Compile | 2015-02-28 23:17 | 0 | 2015-02-28 23:18 | 1 |  |
| Tarea 6 | Test | 2015-02-28 23:18 | 0 | 2015-02-28 23:41 | 23 |  |
| Tarea 6 | Post Morten | 2015-02-28 23:41 | 0 | 2015-03-01 00:24 | 43 |  |
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PSP Defect Recording Log

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| Defect Types |  |
| 10 Documentation | 60 Checking |
| 20 Syntax | 70 Data |
| 30 Build, Package | 80 Function |
| 40 Assignment | 90 System |
| 50 Interface | 100 Environment |

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| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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| Project |  | | Date |  | Number |  | Type |  | Inject |  | Remove |  | Fix Time |  | Fix Ref. |
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| Description: | | |  | | | | | | | | | | | | | |
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| Project |  | | Date |  | Number |  | Type |  | Inject |  | Remove |  | Fix Time |  | Fix Ref. |
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| Description: | | |  | | | | | | | | | | | | | |
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| Project |  | | Date |  | Number |  | Type |  | Inject |  | Remove |  | Fix Time |  | Fix Ref. |
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| Project |  | | Date |  | Number |  | Type |  | Inject |  | Remove |  | Fix Time |  | Fix Ref. |
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| Project |  | | Date |  | Number |  | Type |  | Inject |  | Remove |  | Fix Time |  | Fix Ref. |
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| Description: | | |  | | | | | | | | | | | | | |
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| Project |  | | Date |  | Number |  | Type |  | Inject |  | Remove |  | Fix Time |  | Fix Ref. |
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PSP Process Improvement Proposal (PIP)

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| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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| Problem Description |
| Briefly describe the problems that you encountered. |
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| Proposal Description |
| Briefly describe the process improvements that you propose. |
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| Other Notes and Comments |
| Note any other comments or observations that describe your experiences or improvement ideas. |
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Test Report Template

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| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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| --- | --- |
| Test Name/Number |  |
| Test Objective |  |
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| Test Description |  |
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| Test Conditions |  |
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| Expected Results |  |
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| Actual Results |  |
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| Test Name/Number |  |
| Test Objective |  |
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| Test Description |  |
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| Actual Results |  |
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Size Estimating Template

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| --- | --- | --- | --- |
| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |
| Size Measure | LOC |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Estimated | | | | | | | | | | | |
| Base Parts |  | Base | |  | Deleted | |  | Modified | | |  | Added | |
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| Total | B | |  | D | |  | M | |  | **BA** | | |  |

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|  |  | Actual | | | | | | | | | | |
| Base Parts |  | Base | |  | Deleted | |  | Modified | |  | Added | |
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|  |  | Estimated | | | | | | | |  | Actual | | |
| Parts Additions |  | Type |  | Items |  | Rel. Size | |  | Size\* |  | Size\* |  | Items |
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|  | |  | Estimated |  | Actual |
| Reused Parts | |  | Size |  | Size |
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| Total | R | |  |  |  |

**(continued)**

Size Estimating Template (continued)

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| Student | Alvaro David Lopez Pinilla | Program | 6 |

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| PROBE Calculation Worksheet (Added and Modified) |  | Size |  | Time |
| Added size (A): A = BA+PA |  |  |  |  |
| Estimated Proxy Size (E): E = BA+PA+M |  |  |  |  |
| PROBE estimating basis used: (A, B, C, or D) |  |  |  |  |
| Correlation: (R2) |  |  |  |  |
| Regression Parameters: β0 Size and Time |  |  |  |  |
| Regression Parameters: β1 Size and Time |  |  |  |  |
| Projected Added and Modified Size (P): P = β0size + β1size\*E |  |  |  |  |
| Estimated Total Size (T): T = P + B - D - M + R |  |  |  |  |
| Estimated Total New Reusable (NR): sum of \* items |  |  |  |  |
| Estimated Total Development Time: Time = β0time + β1time\*E |  |  |  |  |
| Prediction Range: Range |  |  |  |  |
| Upper Prediction Interval: UPI = P + Range |  |  |  |  |
| Lower Prediction Interval: LPI = P - Range |  |  |  |  |
| Prediction Interval Percent: |  |  |  |  |

Task Planning Template

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| --- | --- | --- | --- |
| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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| Task | | | Plan | | | | | | | Actual | | |
| Program/Part | Phase | Task Name | Task Hours | Cumulative Task Hours | Week Due | Week | Week Predicted | Planned Value (PV) | Cumulative  PV | Task Hours | Cumulative EV | Week |
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| Totals | | |  |  |  |  |  |  |  |  |  |  |

Schedule Planning Template

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| --- | --- | --- | --- |
| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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|  |  | Plan | | | Actual | | | | Predicted |
| Week  No. | Date | Schedule  Hours | Cumulative Schedule Hours | Cumulative  Planned  Value | Schedule  Hours | Cumulative  Schedule Hours | Week  Earned Value | Cumulative  Earned Value | Cumulative  Predicted Earned Value |
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**Design Review Checklist**

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| --- | --- | --- | --- |
| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

|  |  |
| --- | --- |
| Purpose | To guide you in conducting an effective design review |
| General | * Review the entire program for each checklist category; do not attempt to review for more than one category at a time! * As you complete each review step, check off that item in the box at the right. * Complete the checklist for one program or program unit before reviewing the next. |

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| Complete | Verify that the design covers all of the applicable requirements.   * All specified outputs are produced. * All needed inputs are furnished. * All required includes are stated. |  |  |  |  |
| External Limits | Where the design assumes or relies upon external limits, determine if behavior is correct at nominal values, at limits, and beyond limits. |  |  |  |  |
| Logic | ***Use a trace table, mathematical proof, or similar method to verify the logic.***   * Verify that program sequencing is proper.   Stacks, lists, and so on are in the proper order.  Recursion unwinds properly.   * Verify that all loops are properly initiated, incremented, and terminated. * Examine each conditional statement and verify all cases. |  |  |  |  |
| ***State Analysis*** | ***For each state machine, verify that the state transitions are all complete and orthogonal.*** |  |  |  |  |
| Internal Limits | Where the design assumes or relies upon internal limits, determine if behavior is correct at nominal values, at limits, and beyond limits. |  |  |  |  |
| Special Cases | * Check all special cases. * Ensure proper operation with empty, full, minimum, maximum, negative, and zero values for all variables. * Protect against out-of-limits, overflow, and underflow conditions. * Ensure “impossible” conditions are absolutely impossible. * Handle all possible incorrect or error conditions. |  |  |  |  |
| Functional Use | * Verify that all functions, procedures, or methods are fully understood and properly used. * Verify that all externally referenced abstractions are precisely defined. |  |  |  |  |
| System Considerations | * Verify that the program does not cause system limits to be exceeded. * Verify that all security-sensitive data are from trusted sources. * Verify that all safety conditions conform to the safety specifications. |  |  |  |  |
| Names | Verify that   * all special names are clear, defined, and authenticated * the scopes of all variables and parameters are self-evident or defined * all named items are used within their declared scopes |  |  |  |  |
| Standards | Ensure that the design conforms to all applicable design standards. |  |  |  |  |

**Code Review Checklist**

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| --- | --- | --- | --- |
| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

|  |  |
| --- | --- |
| Purpose | To guide you in conducting an effective code review |
| General | * Review the entire program for each checklist category; do not attempt to review for more than one category at a time! * As you complete each review step, check off that item in the box at the right. * Complete the checklist for one program or program unit before reviewing the next. |

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| Complete | Verify that the code covers all of the design. |  |  |  |  |
| Includes | Verify that the includes are complete. |  |  |  |  |
| Initialization | Check variable and parameter initialization.   * at program initiation * at start of every loop * at class/function/procedure entry |  |  |  |  |
| Calls | Check function call formats.   * pointers * parameters * use of ‘&’ |  |  |  |  |
| Names | Check name spelling and use.   * Is it consistent? * Is it within the declared scope? * Do all structures and classes use ‘.’ reference? |  |  |  |  |
| Strings | Check that all strings are   * identified by pointers * terminated by NULL |  |  |  |  |
| Pointers | Check that all   * pointers are initialized NULL * pointers are deleted only after new * new pointers are always deleted after use |  |  |  |  |
| Output Format | Check the output format.   * Line stepping is proper. * Spacing is proper. |  |  |  |  |
| () Pairs | Ensure that () are proper and matched. |  |  |  |  |
| Logic Operators | * Verify the proper use of ==, =, ||, and so on. * Check every logic function for (). |  |  |  |  |
| Line-by-line check | Check every line of code for   * instruction syntax * proper punctuation |  |  |  |  |
| Standards | Ensure that the code conforms to the coding standards. |  |  |  |  |
| File Open and Close | Verify that all files are   * properly declared * opened * closed |  |  |  |  |

**Operational Specification Template**

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| --- | --- | --- | --- |
| **Student** | Alvaro David Lopez Pinilla | **Date** | 2015-02-28 |
| **Program** | Tarea 6 PSP 2.1 | **Program #** | 6 |
| **Instructor** | Luis Daniel Benavides | **Language** | JAVA |

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| --- | --- | --- | --- | --- |
| **Scenario Number** |  | **User Objective** |  | |
| **Scenario Objective** | |  | | |
| **Source** | **Step** | **Action** | | **Comments** |
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Functional Specification Template

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| **Student** | | | Alvaro David Lopez Pinilla | | **Date** | 2015-02-28 |
| **Program** | | | Tarea 6 PSP 2.1 | | **Program #** | 6 |
| **Instructor** | | | Luis Daniel Benavides | | **Language** | JAVA |
|  | | | | | | |
| **Class Name** | |  | | | | |
| **Parent Class** | |  | | | | |
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| **Attributes** | | | | | | |
|  | **Declaration** | | | **Description** | | |
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| **Items** | | | | | | |
|  | **Declaration** | | | **Description** | | |
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State Specification Template

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| Student | | Alvaro David Lopez Pinilla | | | Date | | 2015-02-28 |
| Program | | Tarea 6 PSP 2.1 | | | Program # | | 6 |
| Instructor | | Luis Daniel Benavides | | | Language | | JAVA |
|  | | |  | | | | |
| **State Name** | | | | **Description** | | | |
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| **Function/Parameter** | | | | **Description** | | | |
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| **States/Next States** | | | | **Transition Condition** | | **Action** | |
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**Logic Specification Template**

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| Student | Alvaro David Lopez Pinilla | Date | 2015-02-28 |
| Program | Tarea 6 PSP 2.1 | Program # | 6 |
| Instructor | Luis Daniel Benavides | Language | JAVA |

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| **Design** |  |
| **References** |  |
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