**PSP Scripts, Forms, Templates, and Standards**

This document contains all of the PSP process materials, as listed in the following table.

**PSP Cross-reference**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
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| Process Version |  | PSP0 | PSP0.1 | PSP1 | PSP1.1 | PSP2 | PSP2.1 |
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| **PSP1.1 Process Script** | |
| **Purpose** | To guide the development of module-level programs |
| **Entry Criteria** | Problem description  PSP1.1 Project Plan Summary form  Size Estimating template  Historical size and time data (estimated and actual)  Time and Defect Recording logs  Defect Type, Coding, and Size Measurement standards  Stopwatch (optional) |

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| **Step** | **Activities** | **Description** |
| 1 | Planning | Produce or obtain a requirements statement.  Use the PROBE method to estimate the added and modified size of this program.  Complete the Size Estimating template.  Use the PROBE method to estimate the required development time.  ***Complete a Task Planning template.***  ***Complete a Schedule Planning template.***  Enter the plan data in the Project Plan Summary form.  Complete the Time Recording log. |
| 2 | Development | Design the program.  Implement the design.  Compile the program, and fix and log all defects found.  Test the program, and fix and log all defects found.  Complete the Time Recording log. |
| 3 | Postmortem | Complete the Project Plan Summary form with actual time, defect, and size data. |

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| **Exit Criteria** | A thoroughly tested program  Completed Project Plan Summary form with estimated and actual data  Completed Size Estimating ***and Task and Schedule Planning*** templates  Completed Test Report template  Completed PIP forms  Completed Time and Defect Recording logs |

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| **PSP1.1 Planning Script** | |
| **Purpose** | To guide the PSP planning process |
| **Entry Criteria** | Problem description  PSP1.1 Project Plan Summary form  Size Estimating, ***Task Planning, and Schedule Planning templates***  Historical size and time data (estimated and actual)  Time Recording log |

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| **Step** | **Activities** | **Description** |
| 1 | Program  Requirements | Produce or obtain a requirements statement for the program.  Ensure that the requirements statement is clear and unambiguous.  Resolve any questions. |
| 2 | Size  Estimate | Produce a program conceptual design.  Use the PROBE method to estimate the added and modified size of this program.  Complete the Size Estimating template and Project Plan Summary form. |
| 3 | Resource  Estimate | Use the PROBE method to estimate the time required to develop this program.  Using the *To Date %* from the most recently developed program as a guide, distribute the development time over the planned project phases. |
| ***4*** | ***Task and***  ***Schedule Planning*** | ***For projects lasting several days or more, complete the Task Planning and Schedule Planning templates.*** |

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| **Exit Criteria** | Documented requirements statement  Program conceptual design  Completed Size Estimating template  ***For projects lasting several days or more, completed Task and Schedule Planning templates***  Completed Project Plan Summary form with estimated program size and development time data  Completed Time Recording log |

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| **PSP1.1 Development Script** | |
| **Purpose** | To guide the development of small programs |
| **Entry Criteria** | Requirements statement  Project Plan Summary form with estimated program size and development time  ***For projects lasting several days or more, completed Task Planning and Schedule Planning templates***  Time and Defect Recording logs  Defect Type standard and Coding standard |

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| **Step** | **Activities** | **Description** |
| 1 | Design | Review the requirements and produce a design to meet them.  Record in the Defect Recording log any requirements defects found.  Record time in the Time Recording log. |
| 2 | Code | Implement the design following the Coding standard.  Record in the Defect Recording log any requirements or design defects found.  Record time in the Time Recording log. |
| 3 | Compile | Compile the program until there are no compile errors.  Fix all defects found.  Record defects in the Defect Recording log.  Record time in the Time Recording log. |
| 4 | Test | Test until all tests run without error.  Fix all defects found.  Record defects in the Defect Recording log.  Record time in the Time Recording log.  Complete a Test Report template on the tests conducted and the results obtained. |

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| **Exit Criteria** | A thoroughly tested program that conforms to the Coding standard  Completed Test Report template  Completed Time and Defect Recording logs |

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| **PSP1.1 Postmortem Script** | |
| **Purpose** | To guide the PSP postmortem process |
| **Entry Criteria** | Problem description and requirements statement  Project Plan Summary form with program size and development timedata  ***For projects lasting several days or more, completed Task Planning and Schedule Planning templates***  Completed Test Report template  Completed Time and Defect Recording logs  A tested and running program that conforms to the coding and size measurement standards |

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| **Step** | **Activities** | **Description** |
| 1 | Defect Recording | Review the Project Plan Summary to verify that all of the defects found in each phase were recorded.  Using your best recollection, record any omitted defects. |
| 2 | Defect Data Consistency | Check that the data on every defect in the Defect Recording log are accurate and complete.  Verify that the numbers of defects injected and removed per phase are reasonable and correct.  Using your best recollection, correct any missing or incorrect defect data. |
| 3 | Size | Count the size of the completed program.  Determine the size of the base, reused, deleted, modified, added, total, added and modified, and new reusable code.  Enter these data in the Project Plan Summary form. |
| 4 | Time | Review the completed Time Recording log for errors or omissions.  Using your best recollection, correct any missing or incomplete time data. |

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| **Exit Criteria** | A thoroughly tested program that conforms to the coding and size measurement standards  Completed Test Report template  Completed Project Plan Summary form  Completed PIP forms describing process problems, improvement suggestions, and lessons learned  Completed Time and Defect Recording logs |

## PSP1.1 Project Plan Summary

|  |  |  |  |
| --- | --- | --- | --- |
| Student | Alejandra Chica | Date | 15/02/2015 |
| Program | Psp1.1 | Program # | 4 |
| Instructor | Luis Daniel Benavides | Language | Java |

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| **Summary** | **Plan** | | |  | **Actual** | | |  | **To Date** | | |
| Size/Hour | 3 | | |  |  | | |  |  | | |
| ***Planned Time*** | 300 | | |  |  | | |  |  | | |
| ***Actual Time*** |  | | |  |  | | |  |  | | |
| ***CPI (Cost-Performance Index)*** | | | |  |  | | |  |  | | |
|  |  | | |  |  | | |  | (Planned/Actual) | | |
| ***% Reused*** |  | | |  |  | | |  |  | | |
| ***% New Reusable*** |  | | |  |  | | |  |  | | |
|  |  | | |  |  | | |  |  | | |
| **Program Size** | **Plan** | | |  | **Actual** | | |  | **To Date** | | |
| Base (B) | 164 | | |  |  | | |  |  | | |
|  | (Measured) | | |  | (Measured) | | |  |  | | |
| Deleted (D) | 36 | | |  |  | | |  |  | | |
|  | (Estimated) | | |  | (Counted) | | |  |  | | |
| Modified (M) | 35 | | |  |  | | |  |  | | |
|  | (Estimated) | | |  | (Counted) | | |  |  | | |
| Added (A) | 160 | | |  |  | | |  |  | | |
|  | (A+M − M) | | |  | (T − B + D − R) | | |  |  | | |
| Reused (R) | 24 | | |  |  | | |  |  | | |
|  | (Estimated) | | |  | (Counted) | | |  |  | | |
| Added and Modified (A+M) | 195 | | |  |  | | |  |  | | |
|  | (Projected) | | |  | (A + M) | | |  |  | | |
| Total Size (T) | 312 | | |  |  | | |  |  | | |
|  | (A+M + B − M − D + R) | | |  | (Measured) | | |  |  | | |
| Total New Reusable | 5 | | |  |  | | |  |  | | |
|  |  | | |  |  | | |  |  | | |
| Estimated Proxy Size (E) | 386 | | |  |  | | |  |  | | |
|  |  | | |  |  | | |  |  | | |
| **Time in Phase (min.)** | **Plan** |  | **Actual** | | |  | **To Date** | | |  | **To Date %** |
| Planning | 10 |  | 80 | | |  | 185 | | |  |  |
| Design | 20 |  | 10 | | |  | 28 | | |  |  |
| Code | 160 |  | 105 | | |  | 749 | | |  |  |
| Compile | 4 |  | 2 | | |  | 8 | | |  |  |
| Test | 30 |  | 9 | | |  | 128 | | |  |  |
| Postmortem | 76 |  |  | | |  |  | | |  |  |
| Total | 300 |  |  | | |  |  | | |  |  |
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**(continued)**

**PSP1.1 Project Plan Summary (continued)**

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| Student | Alejandra Chica | Program # | 4 |

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| **Defects Injected** |  |  | **Actual** | | |  | **To Date** | | |  | **To Date %** |
| Planning |  |  | 0 | | |  | 0 | | |  | 0 |
| Design |  |  | 0 | | |  | 0 | | |  | 0 |
| Code |  |  | 1 | | |  | 8 | | |  | 100% |
| Compile |  |  | 0 | | |  | 0 | | |  | 0 |
| Test |  |  | 0 | | |  | 0 | | |  | 100% |
| Total Development |  |  | 1 | | |  | 8 | | |  |  |
|  |  | | |  |  | | |  |  | | |
| **Defects Removed** |  |  | **Actual** | | |  | **To Date** | | |  | **To Date %** |
| Planning |  |  | 0 | | |  | 0 | | |  | 0 |
| Design |  |  | 0 | | |  | 0 | | |  | 0 |
| Code |  |  | 0 | | |  | 0 | | |  | 0 |
| Compile |  |  | 0 | | |  | 0 | | |  | 0 |
| Test |  |  | 0 | | |  | 0 | | |  | 0 |
| Total Development |  |  | 1 | | |  | 8 | | |  | 100% |
| After Development |  |  | 0 | | |  | 0 | | |  |  |

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| **PSP1.1 Plan Summary Instructions** | |  |
| **Purpose** | To hold the plan and actual data for programs or program parts | |
| **General** | Use the most appropriate size measure, either LOC or element count.  “To Date” is the total actual to-date values for all products developed.  A part could be a module, component, product, or system. | |
| **Header** | Enter your name and the date.  Enter the program name and number.  Enter the instructor’s name and the programming language you are using. | |
| **Summary** | Enter the added and modified size per hour planned, actual, and to-date.  ***Enter the planned and actual times for this program and prior programs.***  ***For planned time to date, use the sum of the current planned time and the planned times for the prior programs.***  ***CPI = (To Date Planned Time)/(To Date Actual Time).***  ***Reused % is reused size as a percentage of total program size.***  ***New Reusable % is new reusable size as a percentage of added and modified size.*** | |
| **Program Size** | Enter plan base, deleted, modified, reused, new reusable, and total size from the Size Estimating template.  Enter the plan added and modified size value (A+M) from projected added and modified size (P) on the Size Estimating template.  Calculate plan added size as A+M – M.  Enter estimated proxy size (E) from the Size Estimating template.  Enter actual base, deleted, modified, reused, total, and new reusable size from the Size Estimating template.  Calculate actual added size as T-B+D-R and actual added and modified size as A+M.  Enter to-date reused, added and modified, total, and new reusable size. | |
| **Time in Phase** | Enter plan total time in phase from the estimated total development time on the Size Estimating template.  Distribute the estimated total time across the development phases according to the To Date % for the most recently developed program.  Enter the actual time by phase and the total time.  To Date: Enter the sum of the actual times for this program plus the to-date times from the most recently developed program.  To Date %: Enter the percentage of to-date time in each phase. | |
| **Defects Injected** | Enter the actual defects by phase and the total actual defects.  To Date: Enter the sum of the actual defects injected by phase and the to-date values for the most recent previously developed program.  To Date %: Enter the percentage of the to-date defects injected by phase. | |
| **Defects Removed** | To Date: Enter the actual defects removed by phase plus the to-date values for the most recent previously developed program.  To Date %: Enter the percentage of the to-date defects removed by phase.  After development, record any defects subsequently found during program testing, use, reuse, or modification. | |

## PSP Time Recording Log

|  |  |  |  |
| --- | --- | --- | --- |
| Student | Alejandra Chica | Date | 15/02/2015 |
| Program | Psp1.1 | Program # | 4 |
| 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** |
| Psp1.1 | Plan | 15/02/2015 14:15 | 0 | 15/02/2015 14:25 | 10 | Diseño conceptual. |
| Psp1.1 | Plan | 15/02/2015 14:25 | 0 | 15/02/2015 15:15 | 50 | Se llena formato de ***Size Estimating template*** |
| Psp1.1 | Plan | 15/02/2015  15:15 | 10 | 15/02/2015  15:45 | 20 | Se inicia formato Project Plan summary |
| Psp1.1 | Desing | 15/02/2015 16:05 | 0 | 15/02/2015  16:15 | 10 | Diseño de clases |
| Psp1.1 | Code | 15/02/2015 18:15 | 60 | 15/02/2015  20:53 | 98 | Se inicia codificación. |
| Psp1.1 | Compile | 15/02/2015  20:54 | 0 | 15/02/2015  20:54 | 1 | Se compila con maven |
| Psp1.1 | Test | 15/02/2015  20:54 | 0 | 15/02/2015  21:00 | 6 | Se realiza test1 y test 2.  Se encuentra defecto 1. |
| Psp1.1 | Code | 15/02/2015 21:03 | 0 | 15/02/2015  21:10 | 7 | Se inicia codificación defecto 1. |
| Psp1.1 | Compile | 15/02/2015  21:11 | 0 | 15/02/2015  21:11 | 1 | Se compila con maven |
| Psp1.1 | Test | 15/02/2015  21:12 | 0 | 15/02/2015  21:15 | 3 | Se realiza test1 y 2.  Se verifica solución defecto 1. |
| Psp1.1 | Postmorden | 15/02/2015  21:20 | 0 | 15/02/2015  21:40 | 20 | Se completan los siguientes formatos:  Test report template  Project Plan Summary form  PIP  Time and Defect Recording logs |
| Psp1.1 | Postmorden |  | 0 |  |  | Se completan los siguientes formatos:  Test report template  Project Plan Summary form  PIP  Time and Defect Recording logs |
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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 | Alejandra Chica | Date | 15/02/2015 |
| Program | Psp1.1 | Program # | 4 |
| Instructor | Luis Daniel Benavides | Language | Java |

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| Project |  | | Date |  | Number |  | Type |  | Inject |  | Remove |  | Fix Time |  | Fix Ref. |
| Psp1 |  | | 15/02/2015 |  | 1 |  | 8 |  | code |  | test |  | 15 |  |  |
| Description: | | |  | | | | | | | | | | | | | |
| No se estaba almacenando correctamente el valor de ln(xi) | | | | | | | | | | | | | | | | |
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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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| 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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| 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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| Description: | | |  | | | | | | | | | | | | | |
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## PSP Process Improvement Proposal (PIP)

|  |  |  |  |
| --- | --- | --- | --- |
| Student | Alejandra Chica | Date | 15/02/2015 |
| Program | Psp1.1 | Program # | 4 |
| Instructor | Luis Daniel Benavides | Language | Java |

|  |
| --- |
| **Problem Description** |
| Briefly describe the problems that you encountered. |
|  |
| Para hacer el reuso de las clases, toca copiar la clase directamente porque en heroku, maven no puede |
| crear las dependencias, ya que los programas hechos anteriormente deberian estar en un repositorio remoto |
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| **Proposal Description** |
| Briefly describe the process improvements that you propose. |
|  |
| Leer la documentación oficial de las clases java que se requieran para el desarrollo. |
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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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| Programar formulas matemáticas hace que la fase de pruebas sea más corta, debido a que el resultado |
| esperado es exacto. |
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## Test Report Template

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| --- | --- | --- | --- |
| Student | Alejandra Chica | Date | 15/02/2015 |
| Program | Psp1.1 | Program # | 4 |
| Instructor | Luis Daniel Benavides | Language | Java |

|  |  |
| --- | --- |
| Test Name/Number | Test 1 |
| Test Objective | Calcular los rangos de tamaño relativo con los datos de la tabla |
|  | **Table 1. LOC/Method Data** |
| Test Description | Calcular los rangos de tamaño relativo con los datos de la tabla |
|  | **Table 1. LOC/Method Data** |
|  |  |
|  |  |
|  |  |
| Test Conditions | Se utilizara como datos de entrada los datos de la tabla |
|  | **Table 1. LOC/Method Data** |
|  |  |
|  |  |
|  |  |
| Expected Results | Los resultados esperados se encuentran en la tabla **Table 3. Expected and** |
|  | **actual Values** |
|  |  |
| Actual Results | Los resultados actuales se encuentran en la tabla **Table 3. Expected and** |
|  | **actual Values** |
|  |  |
|  |  |
| Test Name/Number | Test 2 |
| Test Objective | Calcular los rangos de tamaño relativo con los datos de la tabla |
|  | **Table 2. Pgs/Chapter** |
| Test Description | Calcular los rangos de tamaño relativo con los datos de la tabla |
|  | **Table 2. Pgs/Chapter** |
|  |  |
|  |  |
|  |  |
| Test Conditions | Se utilizara como datos de entrada los datos de la tabla |
|  | **Table 2. Pgs/Chapter** |
|  |  |
|  |  |
|  |  |
| Expected Results | Los resultados esperados se encuentran en la tabla **Table 3. Expected and** |
|  | **actual Values** |
|  |  |
| Actual Results | Los resultados actuales se encuentran en la tabla **Table 3. Expected and** |
|  | **actual Values** |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **Class Name** | **LOC/method** |
| each\_char | 6.0000 |
| string\_read | 6.0000 |
| single\_character | 8.3333 |
| each\_line | 10.3333 |
| single\_char | 12.3333 |
| string\_builder | 16.4000 |
| string\_manager | 20.5000 |
| list\_clump | 21.7500 |
| list\_clip | 22.2500 |
| string\_decrementer | 23.0000 |
| Char | 28.3333 |
| Character | 29.0000 |
| Converter | 55.8000 |

**Table 1. LOC/Method Data**

|  |  |
| --- | --- |
| **Chapter** | **Pages** |
| Preface | 7 |
| Chapter 1 | 12 |
| Chapter 2 | 10 |
| Chapter 3 | 12 |
| Chapter 4 | 10 |
| Chapter 5 | 12 |
| Chapter 6 | 12 |
| Chapter 7 | 12 |
| Chapter 8 | 12 |
| Chapter 9 | 8 |
| Appendix A | 8 |
| Appendix B | 8 |
| Appendix C | 20 |
| Appendix D | 14 |
| Appendix E | 18 |
| Appendix F | 12 |

**Table 2. Pgs/Chapter**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Expected** | | | | | **Actual** | | | | |
|  | **VS** | **S** | **M** | **L** | **VL** | **VS** | **S** | **M** | **L** | **VL** |
| **LOC/**  **Method** | 4.3953 | 8.5081 | 16.4696 | 31.8811 | 61.7137 | 4.3952605208642055 | 8.508126288214136 | 16.469606885092528 | 31.8810442817748 | 61.71373679941818 |
| **Pgs/**  **Chapter** | 6.3375 | 8.4393 | 11.2381 | 14.9650 | 19.9280 | 6.337517961211724 | 8.43928111212605 | 11.238069244993518 | 14.965042481379406 | 19.928022473189476 |

**Table 3. Expected and actual Values**

## Size Estimating Template

|  |  |  |  |
| --- | --- | --- | --- |
| Student | Alejandra Chica | Date | 15/02/2015 |
| Program | Psp1.1 | Program # | 4 |
| Instructor | Luis Daniel Benavides | Language | Java |
| Size Measure | PROBE |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Estimated | | | | | | | | | | | |
| Base Parts |  | Base | |  | Deleted | |  | Modified | | |  | Added | |
|  |  |  | |  |  | |  |  | | |  |  | |
| App.java |  | 70 | |  | 5 | |  | 5 | | |  | 0 | |
| VistaConsola.java |  | 77 | |  | 30 | |  | 28 | | |  | 0 | |
| Controlador.java |  | 17 | |  | 1 | |  | 2 | | |  | 0 | |
| Total | B | | 164 | D | | 36 | M | | 35 | **BA** | | | 0 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Actual | | | | | | | | | | |
| Base Parts |  | Base | |  | Deleted | |  | Modified | |  | Added | |
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| Total |  | |  |  | |  |  | |  |  | |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Estimated | | | | | | | |  | Actual | | |
| Parts Additions |  | Type |  | Items |  | Rel. Size | |  | Size\* |  | Size\* |  | Items |
|  |  |  |  |  |  |  | |  |  |  |  |  |  |
| Variance.java\* |  | Logica |  | 1 |  | VS | |  | 5 |  | 0 |  | 0 |
| LogarithmicRanges.java |  | Logica |  | 5 |  | S | |  | 50 |  |  |  |  |
| ConverterLN.java |  | Logica |  | 5 |  | S | |  | 50 |  |  |  |  |
| CalculatorRelativeSizeRanges.java |  | Logica |  | 6 |  | M | |  | 90 |  |  |  |  |
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| Total |  |  |  |  |  |  | PA | | 195 |  |  |  |  |

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| --- | --- | --- | --- | --- | --- |
|  | |  | Estimated |  | Actual |
| Reused Parts | |  | Size |  | Size |
|  | |  |  |  |  |
| Mean.java | |  | 11 |  | 11 |
| StandardDeviation.java | |  | 13 |  | 13 |
|  | |  |  |  |  |
|  | |  |  |  |  |
|  | |  |  |  |  |
|  | |  |  |  |  |
| Total | R | | 24 |  | 24 |

**(continued)**

Size Estimating Template (continued)

|  |  |  |  |
| --- | --- | --- | --- |
| Student | Alejandra Chica | Program | Psp1.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PROBE Calculation Worksheet (Added and Modified) |  | Size |  | Time |
| Added size (A): A = BA+PA |  | 195 |  |  |
| Estimated Proxy Size (E): E = BA+PA+M |  | 230 |  |  |
| 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 |  | P+117 |  |  |
| Estimated Total New Reusable (NR): sum of \* items |  | 1 |  |  |
| 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: |  |  |  |  |

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| --- | --- | --- | --- | --- | --- |
| **LOCs/Metodos** | **Very Small** | **Small** | **Medium** | **Large** | **Very Large** |
| **Logica** | 5 | 10 | 15 | 20 | 30 |
| **Vista** | 7 | 14 | 21 | 28 | 35 |
| **Datos** | 3 | 6 | 9 | 18 | 30 |
|  |  |  |  |  |  |

**Task Planning Template**

|  |  |  |  |
| --- | --- | --- | --- |
| Student |  | Date |  |
| Program |  | Program # |  |
| Instructor |  | Language |  |

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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 | | |  |  |  |  |  |  |  |  |  |  |

**Task Planning Template Instructions**

|  |  |
| --- | --- |
| **Purpose** | To estimate the development time for each project task  To compute the planned value for each project task  To estimate the planned completion date for each task  To provide a basis for tracking schedule progress even when the tasks are not completed in the planned order |
| **General** | Complete the Schedule Planning and Task Planning templates together.  Select tasks that have explicit completion criteria, i.e., plan completed, program compiled and defects corrected, etc.  Expand this template or use multiple pages as needed.  Include every significant task.  Use task names and numbers that support the activity and are consistent with the project work breakdown structure.  Note that most support tools will do the earned-value calculations. |
| **Header** | Enter your name and the date.  Enter the program name and number.  Enter the instructor’s name and the programming language you are using. |
| **Program/Part** | Enter the program or part to which the task relates. |
| **Phase** | Enter the phase for each task. |
| **Task Name** | Enter task names and/or numbers in the order in which you expect to complete them. |
| **Plan: Task Hours** | Enter the total planned hours for each task. |
| **Plan: Cumulative Task Hours** | Enter the cumulative sum of the total planned task hours. |
| **Plan: Week Due** | If the task has a specific due date, enter the week due here. |
| **Plan: Week** | On the Schedule template, find the plan cumulative schedule hours entry that equals or just exceeds each cumulative task hours entry on this form.  The week number in that row of the Schedule template is the plan week number for the task on Task template.  If several weeks on the Schedule template have the same cumulative value, enter the earliest week number. |
| **Plan: Week Predicted** | On the Schedule template, find the predicted cumulative earned value entry that equals or just exceeds each cumulative planned value entry on this form.  The week number in that row of the Schedule template is the predicted week number for the task on the Task template.  If several weeks on the Schedule template have the same cumulative value, enter the earliest week number. |
| **Plan: Planned Value (PV)** | Total the planned hours for all tasks.  Find the percentage each task's planned hours is of total hours.  Enter this percentage as the planned value for each task. |
| **Plan: Cumulative PV** | Enter the cumulative sum of the planned values. |
| **Actual: Task Hours** | When a task is completed, enter the hours spent on the task. |
| **Actual: Cumulative Earned Value (EV)** | Each week, total the EV for all completed tasks and enter that total beside the latest completed task.  Also enter the weekly and cumulative total EV on the Schedule template. |
| **Actual: Week** | As a task is completed, enter the week number it was completed. |

**Schedule Planning Template**

|  |  |  |  |
| --- | --- | --- | --- |
| Student |  | Date |  |
| Program |  | Program # |  |
| Instructor |  | Language |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **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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**Schedule Planning Template Instructions**

|  |  |
| --- | --- |
| **Purpose** | To record the estimated and actual hours expended by calendar period  To relate the task planned value to the calendar schedule |
| **General** | Expand this template or use multiple pages as needed.  Complete in conjunction with the Task Planning template. |
| **Header** | Enter your name and the date.  Enter the program name and number.  Enter the instructor’s name and the programming language you are using. |
| **Week No.** | From the project start, enter a week number, typically starting with 1.  For very small projects, it may be more convenient to use days instead of weeks. |
| **Date** | Enter the calendar date for each week.  Pick a standard day in the week (for example, Monday). |
| **Plan: Schedule Hours** | Enter the planned number of schedule hours that you expect to spend working on the project each week.  Consider non-work time such as vacations, holidays, etc.  Consider other committed activities such as e-mail, courses, meetings, and other projects. |
| **Plan: Cumulative Schedule Hours** | Enter the planned cumulative schedule hours through each week. |
| **Plan: Cumulative Planned Value** | For each week  take the plan cumulative schedule hours from the Schedule template  on the Task template, find the task with nearest equal or lower plan cumulative task hours and note its plan cumulative value  enter this cumulative value in the Schedule template for that week  if the cumulative value for the prior week still applies, enter it again |
| **Actual: Schedule Hours** | At the end of each week, enter the actual schedule hours worked in that week. |
| **Actual: Cumulative Schedule Hours** | At the end of each week, calculate and enter the actual cumulative schedule hours for the week. |
| **Actual: Week Earned Value** | At the end of each week, calculate the total earned value for each task completed during the week and enter here. |
| **Actual: Cumulative Earned Value** | At the end of each week, calculate the cumulative earned value for the week. |
| **Predicted: Cumulative Predicted Earned Value** | At the end of each week, recalculate the cumulative predicted earned value for the current week through to the end of the schedule.  Enter the current week’s actual cumulative earned value as the current week’s cumulative predicted earned value.  Calculate the average actual earned value per hour worked on the job to date (Actual Cumulative EV/Actual Cumulative Schedule Hours).  For each week n, starting with the next week, multiply the average earned value per planned hour by the planned hours for week n. Add the result to the cumulative predicted earned value for the preceding week and enter in the cumulative predicted earned value for that week. Repeat for each week until the cumulative predicted earned value reaches 100. |