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**Requirements Checklist:**

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| Each Java class in a separate file. | Check |
| Use all the classes in Program 2. | Check |
| Use at least 2 different Layout Panes. | Used: SplitPane, AnchorPane and GridPane |
| Use a TextArea to display output | Check |
| Provide 3 Buttons – Add, Remove, and Print | Check |
| Include 4 TextFields and several Labels | Check |
| Use a RadioButton group | Check |
| Provide at least 3 CheckBoxes + disable checkboxes that are not applicable | Check |
| set the title of the primaryStage | Set title to "Program 3 - Tuition Manager" |

**- - - START OF GUI VERSION TESTS** **- - -**

**Test Design Document**

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| Test Case | Description | Sample Input | Expected result/output |
| 1 | 0 or negative for the number of credits, or negative for the funding amount of an in-state student. | Credit:-12 Funds: 1200  Credit: 0 Funds: 1200  Credit: 12 Funds: -1200 | “Credit and Funding must be positive!” |
| 2 | Characters are entered where integers or numeric data are expected | Credit: 123fg  Credit: gfg | “Number of credits must be a number! You can't include characters here” |
| 3 | An Instate cannot choose tri-state or exchange status. | Check | - |
| 4 | An Outstate cannot enter funding or choose exchange status. | Check | - |
| 5 | An International cannot enter funding or choose tri-state status. | Check | - |
| 6 | Part time in-state students are not eligible for the funding. | Credit: 8 Funds: 1200 | “Student added but funds were not applied because student is part time.” |
| 7 | Adding a student who is already in the list | Adding twice “Bob Marley” | “Student already exists in the database!” |
| 8 | printing an empty list |  | “We have 0 students!” |
| 9 | removing a student from an empty list | Remove “Bob Marley” | “Student Bob Marley was not found on the list.” |
| 10 | removing a student who is not in the list | Remove “Bob Marley” | “Student Bob Marley was not found on the list.” |
| 11 | Add or Remove button clicked but no data has been entered, or the data is incomplete. | Missing First Name  Missing Last Name  Missing Credits  Missing Funds  Missing student selection | “You must enter First Name!”  “You must enter Last Name!”  “You must enter number of credits”  "You selected funds, so you must enter Funds value!”  "You must select a student type!" |
| 12 | The number of credits entered for international students is less than 9 | Credits: 7 | “International students must take at least 8 credits.” |

**- - - END OF GUI VERSION TESTS** **- - -**

**- - - START OF TERMINAL VERSION TESTS** **- - -**

Instate Class, Testbed main

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| Test Case | Description | Sample Input | Expected result/output |
| 1 | Test the constructor & Under 12 credits, Part-time, No funds | Instate studentOne = new Instate("Mike", "Flores", 9, 0); |  |
| 2 | Test the constructor & Equal 12 credits, Full-time, $1000 funds | Instate studentTwo = new Instate("Alex", "Var", 12, 1000); |  |
| 3 | Test the constructor & Equal 15 credits, Full-time, $1000 funds | Instate studentThree = new Instate("John", "Doe", 15, 1000); |  |
| 4 | Test the constructor & Over 15 credits, Full-time, $1000 funds | Instate studentFour = new Instate("April", "Young", 17, 1000); |  |
| 5 | Test negative inputs | I Mark Popeye -12 1400  I Mark Popeye 12 -1400  I Mark Popeye -12 -1400 | “Credit and Funding must be positive!”  “Credit must be positive!”  “Credit must be positive!” |
| 6 | Test the tuitionDue() method | System.out.println(studentOne.tuitionDue());  System.out.println(studentTwo.tuitionDue());  System.out.println(studentThree.tuitionDue());  System.out.println(studentFour.tuitionDue()); | “4743” “5637” “6936” “6936” |
| 7 | Test the toString() method | System.out.println(studentOne.toString());  System.out.println(studentTwo.toString());  System.out.println(studentThree.toString());  System.out.println(studentFour.toString()); | In-State student: Mike Flores  Tuition Due for 9 credits: $4743  In-State student: Alex Var  Tuition Due for 12 credits: $5637  In-State student: John Doe  Tuition Due for 15 credits: $6936  In-State student: April Young  Tuition Due for 17 credits: $6936 |

Outstate Class, Testbed main

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| --- | --- | --- | --- |
| Test Case | Description | Sample Input | Expected result/output |
| 1 | Test the constructor & Under 12 credits, Part-Time | Outstate studentOne = new Outstate("Mike", "Flores", 8, false); |  |
| 2 | Test the constructor & Under 12 credits, Part-Time | Outstate studentOneSame = new Outstate("Mike", "Flores", 8, true); |  |
| 3 | Test the constructor & Equal 12 credits, Full-Time, No tristate | Outstate studentTwo = new Outstate("Alex", "Var", 12, false); |  |
| 4 | Test the constructor & Equal 12 credits, Full-Time, Yes tristate | Outstate studentTwoSame = new Outstate("Alex", "Var", 12, true); |  |
| 5 | Test the constructor & Equal 15 credits, Full-Time, No tristate | Outstate studentThree = new Outstate("John", "Doe", 15, false); |  |
| 6 | Test the constructor & Equal 15 credits, Full-Time, Yes tristate | Outstate studentThreeSame = new Outstate("John", "Doe", 15, true); |  |
| 7 | Test the constructor & Over 15 credits, Full-Time, No tristate | Outstate studentFour = new Outstate("April", "Young", 17, false); |  |
| 8 | Test the constructor & Over 15 credits, Full-Time, Yes tristate | Outstate studentFourSame = new Outstate("April", "Young", 17, true); |  |
| 9 | Test the tuitionDue()  method | System.out.println(studentOne.tuitionDue());  System.out.println(studentOneSame.tuitionDue());  System.out.println(studentTwo.tuitionDue());  System.out.println(studentTwoSame.tuitionDue());  System.out.println(studentThree.tuitionDue());  System.out.println(studentThreeSame.tuitionDue());  System.out.println(studentFour.tuitionDue());  System.out.println(studentFourSame.tuitionDue()); | “6894”  “6894”  “10513”  “8113”  “12781”  “9781”  “12781”  “9781” |
| 10 | Test the toString()  method | System.out.println(studentOne.toString());  System.out.println(studentOneSame.toString());  System.out.println(studentTwo.toString());  System.out.println(studentTwoSame.toString());  System.out.println(studentThree.toString());  System.out.println(studentThreeSame.toString());  System.out.println(studentFour.toString());  System.out.println(studentFourSame.toString()); | Out-of-state student: Mike Flores  Tuition Due for 8 credits: $6894  Out-of-state student: Mike Flores  Tuition Due for 8 credits: $6894  Out-of-state student: Alex Var  Tuition Due for 12 credits: $10513  Out-of-state student: Alex Var  Tuition Due for 12 credits: $8113  Out-of-state student: John Doe  Tuition Due for 15 credits: $12781  Out-of-state student: John Doe  Tuition Due for 15 credits: $9781  Out-of-state student: April Young  Tuition Due for 17 credits: $12781  Out-of-state student: April Young  Tuition Due for 17 credits: $9781 |
| 11 | Test negative inputs | O Mark Popeye -12 T  O Mark Popeye -12 F | “Credit must be positive!”  “Credit must be positive!” |

International Class, Testbed main

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| --- | --- | --- | --- |
| Test Case | Description | Sample Input | Expected result/output |
| 1 | Test the constructor & Less than 9 credits | International illegal = new International("Wise", "Guy", 8, false); |  |
| 2 | Test the constructor & Equal 9 credits, Part-Time, No exchange | International studentOne = new International("Mike", "Flores", 9, false); |  |
| 3 | Test the constructor & Equal 9 credits, Part-Time, Yes exchange | International studentOneSame = new International("Mike", "Flores", 9, true); |  |
| 4 | Test the constructor & Equal 12 credits, Full-Time, No exchange | International studentTwo = new International("Alex", "Var", 12, false); |  |
| 5 | Test the constructor & Equal 12 credits, Full-Time, Yes exchange | International studentTwoSame = new International("Alex", "Var", 12, true); |  |
| 6 | Test the constructor & Equal 15 credits, Full-Time, No exchange | International studentThree = new International("John", "Doe", 15, false); |  |
| 7 | Test the constructor & Equal 15 credits, Full-Time, Yes exchange | International studentThreeSame = new International("John", "Doe", 15, true); |  |
| 8 | Test the constructor & Over 15 credits, Full-Time, No exchange | International studentFour = new International("April", "Young", 17, false); |  |
| 9 | Test the constructor & Over 15 credits, Full-Time, Yes exchange | International studentFourSame = new International("April", "Young", 17, true); |  |
| 10 | Test the tuitionDue()  method | System.out.println(illegal.tuitionDue());  System.out.println(studentOne.tuitionDue());  System.out.println(studentOneSame.tuitionDue());  System.out.println(studentTwo.tuitionDue());  System.out.println(studentTwoSame.tuitionDue());  System.out.println(studentThree.tuitionDue());  System.out.println(studentThreeSame.tuitionDue());  System.out.println(studentFour.tuitionDue());  System.out.println(studentFourSame.tuitionDue()); | Not enough credits taken for international student. Must be at least 9.  -1  “9701”  “1791”  “13131”  “1791”  “15966”  “1791”  “15966”  “1791” |
| 11 | Test the toString()  method | System.out.println(illegal.toString());  System.out.println(studentOne.toString());  System.out.println(studentOneSame.toString());  System.out.println(studentTwo.toString());  System.out.println(studentTwoSame.toString());  System.out.println(studentThree.toString());  System.out.println(studentThreeSame.toString());  System.out.println(studentFour.toString());  System.out.println(studentFourSame.toString()); | Not enough credits taken for international student. Must be at least 9.  International student: Wise Guy  Tuition Due for 8 credits: $-1  International student: Mike Flores  Tuition Due for 9 credits: $9701  International student: Mike Flores  Tuition Due for 9 credits: $1791  International student: Alex Var  Tuition Due for 12 credits: $13131  International student: Alex Var  Tuition Due for 12 credits: $1791  International student: John Doe  Tuition Due for 15 credits: $15966  International student: John Doe  Tuition Due for 15 credits: $1791  International student: April Young  Tuition Due for 17 credits: $15966  International student: April Young  Tuition Due for 17 credits: $1791 |
| 11 | Test negative inputs | N Mark Popeye -12 T  N Mark Popeye -12 F | “Credit must be positive!”  “Credit must be positive!” |

**- - - END OF TERMINAL VERSION TESTS** **- - -**