**Test Cases**

Throughout this document, we will use the following shorthand:

1. Fname: The “First Name” field
2. Lname: The “Last Name” field
3. NC: The “Number of Credits” field
4. I: “Instate”
5. O: “Outstate”
6. N: “International”

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| **Test Case** | **Description** | **Sample Input** | **Add/Remove/Print** | **Expected Output/Result** |
| 1 | Test first name check, last name check, number of credits check (checks for empty values) | Fname: ”” Lname: “” NC: "" | Add | Please enter a first name. Please enter a last name. Please enter the number of credits. |
| 2 | Check if negative credits are allowed | Fname: “F2” Lname: "L2" NC: "-1" | Add | Number of credits can not be 0 or less. |
| 3 | Check if 0 credits are allowed. | Fname: “F3” Lname: “L3" NC: "0" | Add | Number of credits can not be 0 or less. |
| 4 | Check if Add works without selecting I, O, or N | Fname: “F4” Lname: “L4” NC: “10” I: False O: False N: False | Add | Please select type of student (Instate, Outstate, or International). |
| 5 | Add I without funds, part time (check for correct part time calculation; check if add button works; show that funds field can be left empty). | Fname: “F5” Lname: “L5” NC: “10” I: True O: False N: False Funds: "" | Add | F5 L5. Credits: 10. Funds: 0. tuition due: $5176. |
| 6 | Add I without funds, full time (check for correct part time calculation; show that funds field can be passed 0 instead of empty). | Fname: “F6” Lname: “L6” NC: “12” I: True O: False N: False Funds: "0" | Add | F6 L6. Credits: 12. Funds: 0. tuition due: $6637. |
| 7 | Add I without funds, 15 credits (for comparison to above 15 credits) | Fname: “F7” Lname: “L7” NC: “15” I: True O: False N: False Funds: "" | Add | F7 L7. Credits: 15. Funds: 0. tuition due: $7936. |
| 8 | Add I without funds, 15+ credits (check for correct 15+ credits calculation) | Fname: “F8” Lname: “L8” NC: “17” I: True O: False N: False Funds: "" | Add | F8 L8. Credits: 17. Funds: 0. tuition due: $7936. |
| 9 | Check print button | -- | Print | F5 L5. Credits: 10. Funds: 0. tuition due: $5176 F6 L6. Credits: 12. Funds: 0. tuition due: $6637 F7 L7. Credits: 15. Funds: 0. tuition due: $7936 F8 L8. Credits: 17. Funds: 0. tuition due: $7936 |
| 10 | Add I with funds, part time (check correct part time calculation ignoring funds) | Fname: “F10” Lname: “L10” NC: “10” I: True O: False N: False Funds: "250" | Add | F10 L10. Credits: 10. Funds: 250. tuition due: $5176. |
| 11 | Add I with funds, full time (check for correct calculation with funds) | Fname: “F11” Lname: “L11” NC: “12” I: True O: False N: False Funds: "250" | Add | F11 L11. Credits: 12. Funds: 250. tuition due: $6387. |
| 12 | Show that array is growable. | -- | Print | F5 L5. Credits: 10. Funds: 0. tuition due: $5176 F6 L6. Credits: 12. Funds: 0. tuition due: $6637 F7 L7. Credits: 15. Funds: 0. tuition due: $7936 F8 L8. Credits: 17. Funds: 0. tuition due: $7936 F10 L10. Credits: 10. Funds: 250. tuition due: $5176 F11 L11. Credits: 12. Funds: 250. tuition due: $6387 |
| 13 | Add I with funds, 15 credits (check for correct calculation with funds for comparison to 15+) | Fname: “F13” Lname: “L13” NC: “15” I: True O: False N: False Funds: "250" | Add | F13 L13. Credits: 15. Funds: 250. tuition due: $7686. |
| 14 | Add I with funds, 15+ credits (should be the same tuition as 13) | Fname: “F14” Lname: “L14” NC: “16” I: True O: False N: False Funds: "250" | Add | F14 L14. Credits: 16. Funds: 250. tuition due: $7686. |
| 15 | Print to show array before remove | -- | Print | F5 L5. Credits: 10. Funds: 0. tuition due: $5176 F6 L6. Credits: 12. Funds: 0. tuition due: $6637 F7 L7. Credits: 15. Funds: 0. tuition due: $7936 F8 L8. Credits: 17. Funds: 0. tuition due: $7936 F10 L10. Credits: 10. Funds: 250. tuition due: $5176 F11 L11. Credits: 12. Funds: 250. tuition due: $6387 F13 L13. Credits: 15. Funds: 250. tuition due: $7686. F14 L14. Credits: 16. Funds: 250. tuition due: $7686. |
| 16 | Show remove button works | Fname: "F13" Lname: "L13" | Remove | Student F13 L13 was removed. |
| 17 | Show that remove was successful | -- | Print | F5 L5. Credits: 10. Funds: 0. tuition due: $5176 F6 L6. Credits: 12. Funds: 0. tuition due: $6637 F7 L7. Credits: 15. Funds: 0. tuition due: $7936 F8 L8. Credits: 17. Funds: 0. tuition due: $7936 F10 L10. Credits: 10. Funds: 250. tuition due: $5176 F11 L11. Credits: 12. Funds: 250. tuition due: $6387 F14 L14. Credits: 16. Funds: 250. tuition due: $7686. |
| 18 | Add O not tristate, part time (show parttime calculation is correct) | Fname: “F18” Lname: “L18” NC: “10” I: False O: True N: False Tristate: False | Add | F18 L18. Credits: 10. Not Tristate Area. tuition due: $8406. |
| 19 | Add O with tristate, part time (show parttime calculation ignores tristate discount) | Fname: “F19” Lname: “L19” NC: “10” I: False O: True N: False Tristate: True | Add | F19 L19. Credits: 10. Tristate Area. tuition due: $8406. |
| 20 | Show remove button works with outstate students | Fname: "F19" Lname: "L19" | Remove | Student F19 L19 was removed. |
| 21 | Add O without tristate, full time (show full time calculation is correct) | Fname: “F21” Lname: “L21” NC: “12” I: False O: True N: False Tristate: False | Add | F21 L21. Credits: 12. Not Tristate Area. tuition due: $10513. |
| 22 | Add O with tristate, full time (show full time calculation w/tristate discount is correct) | Fname: “F22” Lname: “L22” NC: “12” I: False O: True N: False Tristate: True | Add | F22 L22. Credits: 12. Tristate Area. tuition due: $8113. |
| 23 | Add O without tristate, 15 credits (for comparison) | Fname: “F23” Lname: “L23” NC: “15” I: False O: True N: False Tristate: False | Add | F23 L23. Credits: 15. Not Tristate Area. tuition due: $12781. |
| 24 | Add O without tristate, 15+ credits (For comparison) | Fname: “F24” Lname: “L24” NC: “18” I: False O: True N: False Tristate: False | Add | F24 L24. Credits: 18. Not Tristate Area. tuition due: $12781. |
| 25 | Add O with tristate, 15 credits (for comparison) | Fname: “F25” Lname: “L25” NC: “15” I: False O: True N: False Tristate: True | Add | F25 L25. Credits: 15. Tristate Area. tuition due: $9781. |
| 26 | Add O with tristate, 15+ credits (For comparison) | Fname: “F26” Lname: “L26” NC: “18” I: False O: True N: False Tristate: True | Add | F26 L26. Credits: 18. Tristate Area. tuition due: $9781. |
| 27 | Add N without exchange, 8 credits (Show 9 credit minimum) | Fname: “F27” Lname: “L27” NC: “8” I: False O: False N: True Exchange: False | Add | International student must have at least 9 credits. |
| 28 | Add N without exchange, 9 credits (Show correct part time calculation) | Fname: “F28” Lname: “L28” NC: “9” I: False O: False N: True Exchange: False | Add | F28 L28. Credits: 9. Not exchange student. tuition due: $9701. |
| 29 | Add N with exchange, 9 credits (Show correct part time calculation with exchange status) | Fname: “F29” Lname: “L29” NC: “9” I: False O: False N: True Exchange: True | Add | F29 L29. Credits: 9. Exchange student. tuition due: $1791. |
| 30 | Add N without exchange, 12 credits (Show correct fulltime calculation) | Fname: “F30” Lname: “L30” NC: “12” I: False O: False N: True Exchange: False | Add | F30 L30. Credits: 12. Not exchange student. tuition due: $13131. |
| 31 | Add N with exchange, 12 credits (Show correct fulltime calculation with exchange discount) | Fname: “F31” Lname: “L31” NC: “12” I: False O: False N: True Exchange: True | Add | F31 L31. Credits: 12. Exchange student. tuition due: $1791. |
| 32 | Add N without exchange, 15 credits (For comparison) | Fname: “F32” Lname: “L32” NC: “15” I: False O: False N: True Exchange: False | Add | F32 L32. Credits: 15. Not exchange student. tuition due: $15966. |
| 33 | Add N without exchange, 15+ credits (For comparison) | Fname: “F33” Lname: “L33” NC: “19” I: False O: False N: True Exchange: False | Add | F33 L33. Credits: 19. Not exchange student. tuition due: $15966. |
| 34 | Add N with exchange, 15 credits (For comparison) | Fname: “F34” Lname: “L34” NC: “15” I: False O: False N: True Exchange: True | Add | F34 L34. Credits: 15. Exchange student. tuition due: $1791. |
| 35 | Add N with exchange, 15+ credits (For comparison) | Fname: “F35” Lname: “L35” NC: “19” I: False O: False N: True Exchange: True | Add | F35 L35. Credits: 19. Exchange student. tuition due: $1791. |
| 36 | Show duplication check | Fname: "F35" Lname: "L35" NC: "9" I:True O:False N:False Exchange: False | Add | Student is already present in list. |
| 37 | Show that duplicate was not added to list  Show that duplicate was not added to list  Show that duplicate was not added to list | -- | Print | F5 L5. Credits: 10. Funds: 0. tuition due: $5176 F6 L6. Credits: 12. Funds: 0. tuition due: $6637 F7 L7. Credits: 15. Funds: 0. tuition due: $7936 F8 L8. Credits: 17. Funds: 0. tuition due: $7936 F10 L10. Credits: 10. Funds: 250. tuition due: $5176 F11 L11. Credits: 12. Funds: 250. tuition due: $6387 F14 L14. Credits: 16. Funds: 250. tuition due: $7686.  F18 L18. Credits: 10. Not Tristate Area. tuition due: $8406.  F19 L19. Credits: 10. Tristate Area. tuition due: $8406.  F21 L21. Credits: 12. Not Tristate Area. tuition due: $10513.  F22 L22. Credits: 12. Tristate Area. tuition due: $8113.  F23 L23. Credits: 15. Not Tristate Area. tuition due: $12781.  F24 L24. Credits: 18. Not Tristate Area. tuition due: $12781.  F25 L25. Credits: 15. Tristate Area. tuition due: $9781.  F26 L26. Credits: 18. Tristate Area. tuition due: $9781.  F28 L28. Credits: 9. Not exchange student. tuition due: $9701  F29 L29. Credits: 9. Exchange student. tuition due: $1791  F30 L30. Credits: 12. Not exchange student. tuition due: $13131  F31 L31. Credits: 12. Exchange student. tuition due: $1791  F32 L32. Credits: 15. Not exchange student. tuition due: $15966  F33 L33. Credits: 19. Not exchange student. tuition due: $15966  F34 L34. Credits: 15. Exchange student. tuition due: $1791  F35 L35. Credits: 19. Exchange student. tuition due: $1791 |
| 38 | Remove N student | Fname: “F31”  Lname: “L31” | Remove | Student F31 L31 was removed. |
| 39 | Remove fail case | Fname: “F31”  Lname: “L31” | Remove | Student F31 L31 was not found. |
| 40 | Remove from beginning of list | Fname: “F2”  Lname: “L2” | Remove | Student F2 L2 was removed. |
| 41 | Remove from end of list | Fname: “F35”  Lname: “L35” | Remove | Student F35 L35 was removed. |