# Lab 09: Black Box Test Plan

## Test Overview

To run the tests:

1. Right click on PackSchedulerGUI class in the Package Explorer.
2. Select Run As > Java Application

All tests files should be located in the test-files/ folder.

If you run all tests independently, you can close the GUI between each test. However, the tests are structured so that they may be run in order without shutting down the GUI.

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| **Test ID** | **Description** | **Expected Results** | **Actual Results** |
| T1: Invalid Login | Preconditions: PackSchedulerGUI has loaded  User ID: **lberg**  Password: **pw**  Click **Login**  Click **OK**  Click **Clear** | Pop up with message “User doesn’t exist.”  User ID and password text fields are cleared. | User ID and password fields are cleared. |
| T2: Registrar Login | Preconditions: PackSchedulerGUI has loaded  User ID: **registrar**  Password: **Regi5tr@r**  Click **Login** | View switches to Registrar panel with Student Directory functionality displayed | View switches to Student Directory panel. |
| T3: Load Student Directory | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2)  Click **Load Student Directory**  Select **test-files/student\_records.txt**  Click **Select** | 10 students are listed in alphabetical order by last name. The list starts with Demetrius Austin and ends with Griffith Stone. | 10 students are listed in the Student Directory, ordered alphabetically from Demetrius Austin to Griffith Stone. |
| T4: Add Invalid Student - no first name | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: * Last Name: **Wilkins** * ID: **pwilkins** * Email: **pwilkins@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Error Message: Invalid first name | Is displayed as error message. |
| T5: Add Invalid Student - no last name | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: * ID: **pwilkins** * Email: **pwilkins@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Error Message: Invalid last name | Is displayed as error message. |
| T6: Add Invalid Student - no id | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: * Email: **pwilkins@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Error Message: Invalid id | Is displayed as error message. |
| T7: Add Invalid Student - no email | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: **pwilkins** * Email: * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Error Message: Invalid email | Is displayed as error message. |
| T8: Add Invalid Student - invalid email | PPreconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: **pwilkins** * Email: **pwilkinsncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Error Message: Invalid email | Is displayed as error message. |
| T9: Add Invalid Student - passwords don’t match | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: **pwilkins** * Email: **pwilkins@ncsu.edu** * Password: **pw1** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Error Message: Passwords do not match | is displayed as error message. |
| T10: Add Invalid Student - zero max credits | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: **pwilkins** * Email: **pwilkins@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **0**   Click **Add Student**  Click **OK** | Error Message: Invalid max credits |  |
| T11: Add Invalid Student - 11 max credits | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: **pwilkins** * Email: **pwilkins@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **19**   Click **Add Student**  Click **OK** | Error Message: Invalid max credits |  |
| T12: Add Student - end | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: **pwilkins** * Email: **pwilkins@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Patience Wilkins is added to the Student Directory and is the last student in the list. | Patience Wilkins is added to the end of the Student Directory List. |
| T13: Add Student - middle | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Rylee** * Last Name: **Puckett** * ID: **rpuckett** * Email: **rpuckett@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Rylee Puckett is added to the Student Directory between Dylan Nolan and Cassandra Schwartz | Rylee Puckett is added to Student Directory after Dylan Nolan and before Cassandra Schwartz. |
| T14: Add Student - front | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T3 has run.  Enter the following in the Student Information section:   * First Name: **Melvin** * Last Name: **Acevedo** * ID: **macevedo** * Email: **macevedo@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Melvin Acevedo is added to the Student Directory and is the first student in the list. | Melvin Acevedo is added to the beginning of the Student Directory. |
| T15: Remove Student - no selection | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2).  Click **Remove Student** | Error Message: No student selected |  |
| T16: Remove Student - middle | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2).  Select **Shannon Hansen**  Click **Remove student** | Shannon Hansen is removed. Athea Hicks follows Emerald Frost in the list | Shannon Hansen is removed, remainder of Student List maintains correct ordering. |
| T17: Remove Student - front | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T14 has run.  Select **Melvin Acevedo**  Click **Remove student** | Melvin Acevedo is removed. Demetrius Austin is front of the directory | Melvin Acevedo is removed from the Student Directory. Demetrius Austin is at the head of the list. |
| T18: Remove Student - back | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T12 has run.  Select **Patience Wilkins**  Click **Remove student** | Patience Wilkins is removed. Griffith Stone is last in the directory | Patience Wilkins is removed from the end of the directory, leaving Griffith Stone in the final position of the list. |
| T19: Save Student Directory | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T12-T18 have run.  Click **Save Student Directory**  Select **test-files** directory and name the file **t19\_student\_directory.txt**. | Contents should be (note that the password hash may be different due to encoding):  Demetrius,Austin,daustin,Curabitur.egestas.nunc@placeratorcilacus.co.uk,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,18  Lane,Berg,lberg,sociis@non.org,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,14  Raymond,Brennan,rbrennan,litora.torquent@pellentesquemassalobortis.ca,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,12  Emerald,Frost,efrost,adipiscing@acipsumPhasellus.edu,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,3  Althea,Hicks,ahicks,Phasellus.dapibus@luctusfelis.com,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,11  Zahir,King,zking,orci.Donec@ametmassaQuisque.com,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,15  Dylan,Nolan,dnolan,placerat.Cras.dictum@dictum.net,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,5  Rylee,Puckett,rpuckett,rpuckett@ncsu.edu,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,15  Cassandra,Schwartz,cschwartz,semper@imperdietornare.co.uk,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,4  Griffith,Stone,gstone,porta@magnamalesuadavel.net,0ÉRú±"ÃùuŸ¦Ù\7X²F´þâ9•{-OîFâapÄ,17 | Contents: Demetrius,Austin,daustin,Curabitur.egestas.nunc@placeratorcilacus.co.uk,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,18  Lane,Berg,lberg,sociis@non.org,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,14  Raymond,Brennan,rbrennan,litora.torquent@pellentesquemassalobortis.ca,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,12  Emerald,Frost,efrost,adipiscing@acipsumPhasellus.edu,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,3  Althea,Hicks,ahicks,Phasellus.dapibus@luctusfelis.com,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,11  Zahir,King,zking,orci.Donec@ametmassaQuisque.com,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,15  Dylan,Nolan,dnolan,placerat.Cras.dictum@dictum.net,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,5  Rylee,Puckett,rpuckett,rpuckett@ncsu.edu,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,15  Cassandra,Schwartz,cschwartz,semper@imperdietornare.co.uk,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,4  Griffith,Stone,gstone,porta@magnamalesuadavel.net,0ÉRú±"ÃùuŸ\_¦Ù\7X²F´þâ9•{-OîFâapÄ,17 |
| T20: New Student Directory | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T12-T18 have run.  Click **New Student Directory** | An empty student directory is shown. | Student Directory is emptied. |
| T21: Add Student - first | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T20 has run.  Enter the following in the Student Information section:   * First Name: **Patience** * Last Name: **Wilkins** * ID: **pwilkins** * Email: **pwilkins@ncsu.edu** * Password: **pw** * Repeat Password: **pw** * Max Credits: **15**   Click **Add Student**  Click **OK** | Patience Wilkins is added to the Student Directory and is the only student in the list. | Patience Wilkins is added to the Student Directory. |
| T22: Course Catalog view | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2).  Click **Course Catalog** | Course Catalog functionality displayed | View switches to Course Catalog functionality |
| T23: Load Course Catalog | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2)  Click **Load Course Catalog**  Select **test-files/course\_records.txt**  Click **Select** | 8 courses are listed starting with CSC116-001 and ending with CSC230-001 | Eight Courses are displayed, with information organized into five columns (Name, Section, Title, Meeting Information, and Open Seats).  Courses run from CSC116 001 to CSC230 001 – all courses show 10 Open Seats. |
| T24: Add Invalid Course - no name  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: * Course Title: **Computer Organization and Assembly Language** * Course Section: **001** * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | Error Message: Invalid name |  |
| T25: Add Invalid Course - no title  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: * Course Section: **001** * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | Error Message: Invalid title |  |
| T26: Add Invalid Course - no section  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: **Computer Organization and Assembly Language** * Course Section: * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | Error Message: Invalid section |  |
| T27: Add Invalid Course - section too short  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: **Computer Organization and Assembly Language** * Course Section: **0011** * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | Error Message: Invalid section |  |
| T28: Add Invalid Course - section too long  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: **Computer Organization and Assembly Language** * Course Section: **01** * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | Error Message: Invalid section |  |
| T29: Add Invalid Course - no instructor id  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: **Computer Organization and Assembly Language** * Course Section: **001** * Credits: **3** * Instructor Id: * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | Error Message: Invalid instructor id |  |
| T30: Add Invalid Course - end time after start time  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: **Computer Organization and Assembly Language** * Course Section: **001** * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **11:30 AM** * End Time: **10:15 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | Error Message: Invalid meeting times |  |
| T31: Add Invalid Course - no meeting days  Changed to include Enrollment Cap | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: **Computer Organization and Assembly Language** * Course Section: **001** * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days:   Click **Add Course**  Click **OK** | Error Message: Invalid meeting days |  |
| T32: Add Course – end  Changed to include Enrollment CapC | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC236** * Course Title: **Computer Organization and Assembly Language** * Course Section: **001** * Credits: **3** * Instructor Id: **lasher** * Enrollment Cap: 10 * Start Time: **10:15 AM** * End Time: **11:30 AM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | CSC236-001 is added to the list at the end following CSC230-001 | CSC236 001 is added to the end of the Course Catalog |
| T33: Add Course - front | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC113** * Course Title: **Introduction to Computer - MATLAB** * Course Section: **001** * Credits: **3** * Instructor Id: **tbdimitr** * Enrollment Cap: 10 * Start Time: **3:00 PM** * End Time: **3:50 PM** * Meeting Days: **Monday & Wednesday**   Click **Add Course**  Click **OK** | CSC113-001 is added to the list at the front and is followed by CSC116-001. | CSC113 001 is added to the beginning of the Course Catalog. |
| T34: Add Course - middle | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T23 has run.  Enter the following in the Course Information section:   * Course Name: **CSC116** * Course Title: **Introduction to Programming - Java** * Course Section: **006** * Credits: **3** * Instructor Id: **jdyoung2** * Enrollment Cap: 10 * Start Time: **10:40 AM** * End Time: **12:30 PM** * Meeting Days: **Tuesday & Thursday**   Click **Add Course**  Click **OK** | CSC116-006 is added to the list between CSC116-003 and CSC216-001. | CSC116 006 is added between CSC116 003 and CSC216 001 on the Course Catalog list. |
| T35: Remove Course - no selection | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2).  Click **Remove Course** | Error Message: No course selected |  |
| T36: Remove Course - middle | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2).  Select **CSC216-001**  Click **Remove Course** | CSC216-001 is removed. CSC116-006 is followed by CSC216-002. | CSC216 001 is removed. CSC 116 006 is followed by CSC216 002 in the Course Catalog list. |
| T37: Remove Course - front | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T33 has run.  Select **CSC113-001**  Click **Remove Course** | CSC113-001 is removed. CSC116-001 is the first course in the catalog | CSC113 001 is removed from the front of the Course Catalog list. |
| T38: Remove Course - back | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T32 has run.  Select **CSC236-001**  Click **Remove Course** | CSC236-001 is removed.  CSC230-001 is the last course in the catalog | CSC236 001 is removed from the end of the list, CSC230 001 is now the final Course on the Course Catalog list. |
| T39: Save Course Catalog | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T32-T38 have run.  Click **Save Course Catalog**  Select **test-files** directory and name the file **t39\_course\_catalog.txt**. | Contents should be:  CSC116,Intro to Programming - Java,001,3,jdyoung2,MW,910,1100  CSC116,Intro to Programming - Java,002,3,spbalik,MW,1120,1310  CSC116,Intro to Programming - Java,003,3,tbdimitr,TH,1120,1310  CSC116,Java,006,3,jdyoung2,TH,1040,1230  CSC216,Programming Concepts - Java,002,4,jtking,MW,1330,1445  CSC216,Programming Concepts - Java,601,4,jep,A  CSC226,Discrete Mathematics for Computer Scientists,001,3,tmbarnes,MWF,935,1025  CSC230,C and Software Tools,001,3,dbsturgi,MW,1145,1300 | Contents are:  CSC116,Intro to Programming - Java,001,3,jdyoung2,10,MW,910,1100  CSC116,Intro to Programming - Java,002,3,spbalik,10,MW,1120,1310  CSC116,Intro to Programming - Java,003,3,tbdimitr,10,TH,1120,1310  CSC116,Introduction to Programming - Java,006,3,jdyoung3,10,TH,1040,1230  CSC216,Programming Concepts - Java,002,4,jtking,10,MW,1330,1445  CSC216,Programming Concepts - Java,601,4,jep,10,A  CSC226,Discrete Mathematics for Computer Scientists,001,3,tmbarnes,10,MWF,935,1025  CSC230,C and Software Tools,001,3,dbsturgi,10,MW,1145,1300 |
| T40: New Course Catalog | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T12-T18 have run.  Click **New Course Catalog** | An empty course catalog is shown. | Course Catalog is empty. |
| T41: Add Course - first | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T20 has run.  Enter the following in the Course Information section:   * Course Name: **CSC216** * Course Title: **Programming Concepts - Java** * Course Section: **601** * Credits: **4** * Instructor Id: **jep** * Enrollment Cap: 10 * Start Time: * End Time: * Meeting Days: **Arranged**   Click **Add Course**  Click **OK** | CSC216-601 is added to the list | CSC216 601 is added to the Course Catalog and is the only Course on the list. |
| T42: Logout | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2).  Click **Logout** | User is returned to the Login view | View changes to Login view |
| T42: Login Student | Preconditions: PackSchedulerGUI has loaded and registrar user is logged in (T2). T21 has run  User ID: **pwilkins**  Password: **pw**  Click: **Login** | pwilkins is logged in and is switched to the user view. All that is shown is a Logout button. | Pwilkins is logged in and is switched to Course Catalog view. All functionality is visible and usable, except Display Final Schedule. |
| Setup for Waitlist Functionality tests | Preconditions Registrar is logged in  Click New Course Catalog and add CSC236 with correct values as done above – make sure that credit value is set as 3.  Change to Student Directory and load Student Directory from file (student\_records.txt) as done above.  Re-enter Patience Wilkins, Rylee Puckett, and Melvin Acevedo as done above, bringing the total number in the Student Directory to 13.  Click Logout. |  | There is one Course in the Course Directory, with 10 Open Seats and 13 students in the Student Directory. |
| T43:  Add Class to Student schedules | Login as daustin (daustin, pw) and select the only Course in the Course Directory and click Add Course.  Check Results | CSC236 appears in My Schedule and the number of Open Seats decreases by 1 seat. | CSC236 added to My Schedule and Open Seats are 9. |
| T44  Add Class to Multiple Student Schedules | Repeat T43 for Students 2-10 on Student Directory, ending with Griffith Stone. | Same as T43 for each student. | As predicted, Course is added to each Student’s schedule and the number of open seats declines stepwise to 0. |
| T45 – Add Student to Waitlist | Preconditions: T43 passed and Open Seats in CSC236 are displayed as zero.  Login as Patience Wilkins, select CSC236, and Click Add Course button.  Check results. | No change in My Schedule and no change in Open Seats. | No change in either My Schedule or Open Seats. |
| T46 – Drop Enrolled Student | Preconditions: T45 passed  Login as lberg. Select CSC236 from My Schedule and click Remove Course button.  Check Results  Logout and login as Patience Wilkins.  Check Results | 1st check – CSC236 is removed from My Schedule and Open Seats remains zero.  2nd check – CSC236 has been added to Patience Wilkins schedule from the waitlist and Open Seats remains zero. | 1st check – CSC236 is removed from lberg’s schedule and Open Seats remains the same.  2nd check – CSC236 has been added to pwilkin’s schedule. |
| T47 – Drop enrolled student with no students on waitlist | Preconditions: T46 has passed  Login as efrost. Select CSC236 from My Schedule and click Remove Course button.  Check results | CSC236 has been removed from efrost’s schedule and open seats has increased to 1. | CSC236 is removed from efrost’s schedule and Open Seats is displayed as 1. |
| T48 – Try to add duplicate Student to Course | Preconditions: T47 has passed  Login as zking. Select CSC236 from Course Catalog and click Add Course button.  Check results. | Error message displays, “Course cannot be added to schedule.” |  |

Lab 9 ready for deployment.