Testing

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# Testing strategy

For my testing I will first run acceptance testing for each of the forms, one by one going through all the different processes. For each process I will do both white box testing and black box testing, ie I will generate sets of data to test for the different eventualities my program will face and for each test I will check it works by seeing if he result is the one I expected and also I will test to see if the result was generated by the program working in the way I expected by checking what is happening in the program. Every time I encounter an error I will stop and try to fix it after every attempt to fix the problem I will test the new solution and document it along with the other tests.

Once I have finished acceptance testing I will then go and have it alpha tested by 3 people who will then report back to me any errors that I may have missed.

# Testing plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| frmstart | | | | |
| Test No | event | Test data | Reason for test | Expected outcome |
| 1 | Form loads and the the username is retrived by the program | The users network area username in my case 112544 | If the correct username is not obtained then the system will not work | The variable user will contain my username |
| 2 | Form loads and the number or each kind of record is found | The dat files | A lot of the for loops in the program rely on an accurate value for the number of each type of record. If it works for staff it will work for the other files as they are in the same. | The number of staff files recorded to be 97 as the file size is 97 times the record size and there is 97 staff |
| 3 | Form loads and the number or each kind of record is found | The dat files exept that the staff dat file will be missing | If it does not properly handle the situation it could crash the code | The program will continue as if nothing out of the ordinary was happening with nstaff as 0 |
| 3.b | Form loads and the number or each kind of record is found | The dat files exept that the staff dat file will be missing | If it does not properly handle the situation it could crash the code | The program will continue as if nothing out of the ordinary was happening with nstaff as 0 |
| 4 | Form loading | Weather or not the user is an admin | If the suer is an admin then the admin button must present itself or the admin will not be able to wield his or her power. | btnAdmin should be visible |
| 5 | A a user who is a student trys to log on | The variable “User” will be set to “112544” who is added to students.dat | If when a correct student user uses the program they need to be recognised or they cant do anything | The user type should be set to 1 and student.studID should be 112544 |
| 6 | A user who is a staff member trys | The variable “User” will be set to “SSB” who will be added to staff.dat | If when a correct staff member user uses the program they need to be recognised or they cant do anything | The user type should be set to 2 and staff.staffid should be SSB |
| 7 | A user with the name of an admin | The variable “User” will be set to “SSB” and the record will be changed to admin | If when a correct staff member user uses the program they need to be recognised as admin or no one can edit the settings | The admin button should be visible. User type shoud be 2 and staff.staffid = SSB |
| 8 | Some one with the format of a student but is not on the system | The variable “User” will be set to “999999” which is in the format of a students logon but is not in the students.dat file | I If when a user of an incorrect user name tries to use the system it should notify them and not crash so if they should be on the system the can see that that is the error and get someone to fix it | Usertype should be = 0  And an error message should come up telling them that their username is not valid and to contact admin if this is wrong |
| 9 | Someone who does not have the format of a student but is not on the system and there is a staff file loaded | The variable “user” will be set to “librarycomputer1” which is in the correct format to be checked to be a staff and is not in the staff.dat file | If when a user of an incorrect user name tries to use the system it should notify them and not crash so if they should be on the system the can see that that is the error and get someone to fix it | Usertype should be = 0  And an error message should come up telling them that their username is not valid and to contact admin if this is wrong |
| 10 | Btnavailability is clicked | the button being clicked | If the system is set up then a user should be able ot go to set there availability | The availability form will open |
| 11 | Btnadmin clicked | When an admin logs onto the system they need to be able to get to the admin form | Because if the admin are unable to reach the admin form then they cant change any of the settings. | The admin form will open and the start form will disapear |
| 12 | Btnexit clicked | Btnexit clicked | The windows are locked so they will not be able to be closed any other way. | The window will close |

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| frmavailability | | | | |
| Test No | event | Test data | Reason for test | Expected outcome |
|  | Form loading and lblname displaying a welcome message when a student is using it | I student.forename to simon and student.surname to surname and usertype to 1 | If it though if it doesn’t work | Lblname will say “welcome simon bellows” |
|  | Form loading and lblname displaying a welcome message when a student is using it | I staff.forename to simon and staff.surname to surname and usertype to 2 | If it though if it doesn’t work | Lblname will say “welcome simon bellows” |
|  | Form loads populates the chklstavailability  Checked combo box | Appointmentlength = 5 Nday = 2 and day.start = 204 and day.finnish = 246 for day.dayno = 1 and day.dayno = 2 | If it doesn’t correctly display the appointment blocks then user will not be able to accurately set there availability. | A set of un checked items in the list starting with “day 1 1700 to 1800” to “day 2 1930 to 2030” |
|  | Form loads populates the chklstavailability  Checked combo box but for appointment length 10 | Appointmentlength = 10 Nday = 2 and day.start = 204 and day.finnish = 252 for day.dayno = 1 and day.dayno = 2 | If it doesn’t correctly display the appointment blocks then user will not be able to accurately set there availability. | A set of un checked items in the list starting with “day 1 1700 to 1800” to “day 2 1930 to 2030” |
|  | The check box on one of the items in chklstavailablility is checked with a staff member using at appointment length 5 | Appointment length = 5. Usertype = 2  Staffav record. The unchecked checkedlistbox item day 1 1700 to 1800 | If a member of staff is unable to check that they will be available for any appointments then they will not be able to be seen by any students | checkedlistbox item day 1 1700 to 1800 will be checked and in the staffav.dat file there will be a record that says the staff member is available |
|  | The check box on one of the items in chklstavailablility is checked with a staff member using at appointment length 10 | Appointment length = 10. Usertype = 2  Staffav record. The unchecked checkedlistbox item day 1 1700 to 1830 | If a member of staff is unable to check that they will be available for any appointments then they will not be able to be seen by any students | checkedlistbox item day 1 1700 to 1830 will be unchecked and in the staffav.dat file there will be a record that says the staff member is available |
|  | The check box on one of the items in chklstavailablility is unchecked with a staff member using at appointment length 5 | Appointment length = 5. Usertype = 2  Staffav record. The checked checkedlistbox item day 1 1700 to 1800 | If a member of staff is unable to uncheck that they will be available for any appointments then they will be assigned appointments they won’t be available for and will mislead students | checkedlistbox item day 1 1700 to 1800 will be checked and in the staffav.dat file there will be a record that says the staff member is unavailable |
|  | The check box on one of the items in chklstavailablility is unchecked with a staff member using at appointment length 10 | Appointment length = 10. Usertype = 2  Staffav record. The checked checkedlistbox item day 1 1700 to 1830 | If a member of staff is unable to uncheck that they will be available for any appointments then they will be assigned appointments they won’t be available for and will mislead students | checkedlistbox item day 1 1700 to 1830 will be unchecked and in the staffav.dat file there will be a record that says the staff member is unavailable |
|  | The check box on one of the items in chklstavailablility is checked by a student using at appointment length 5 | Appointment length = 5. Usertype =1  Staffav record. The unchecked checkedlistbox item day 1 1700 to 1800 | If a student is unable to check that they will be available for any appointments then they will not be able to be seen by any members of staff | checkedlistbox item day 1 1700 to 1800 will be checked and in the studav.dat file there will be a record that says the staff member is available |
|  | The check box on one of the items in chklstavailablility is checked by a student using at appointment length 10 | Appointment length = 10. Usertype =1  Staffav record. The unchecked checkedlistbox item day 1 1700 to 1830 | If a student is unable to check that they will be available for any appointments then they will not be able to be seen by any members of staff | checkedlistbox item day 1 1700 to 1830 will be unchecked and in the studav.dat file there will be a record that says the staff member is available |
|  | The check box on one of the items in chklstavailablility is unchecked by a student using at appointment length 5 | Appointment length = 5. Usertype =1  Staffav record. The checked checkedlistbox item day 1 1700 to 1800 | If a student is unable to uncheck that they will be available for any appointments then they will be assigned appointments they won’t be available for and will mislead members of staff | checkedlistbox item day 1 1700 to 1800 will be checked and in the studav.dat file there will be a record that says the staff member is unavailable |
|  | The check box on one of the items in chklstavailablility is unchecked by a student using at appointment length 10 | Appointment length = 10. Usertype = 1  Staffav record. The checked checkedlistbox item day 1 1700 to 1830 | If a student is unable to uncheck that they will be available for any appointments then they will be assigned appointments they won’t be available for and will mislead members of staff. | checkedlistbox item day 1 1700 to 1830 will be unchecked and in the studav.dat file there will be a record that says the staff member is unavailable |
|  | Btnexit clicked | btnExit being clicked | Because if button exit does not work then the user won’t be able to exit the program without forcequiting it. | Frmavailability will close and the start form will open. |

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| frmAdmin | | | | |
| Test No | event | Test data | Reason for test | Expected outcome |
|  | btnReset | Clicking button reset | Between parents evenings the admin may want to cleanse the system and start anew | The file lengths for the different dat files wil be changed back to 0 |
|  | Clicking Btnback | Clicking btnback | If the user is unable to use the back button then he would be unable to leave the form without forcequiting it. | The form will close and the start form will open |
|  | btnDaysettings | Clicking btndaysettings | If they are unable to get to the daysettings form then they can not generate the appointment records and availability records. | The day settings form will open |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With them all existing and none of the data in the wrong format | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a series of message boxes notifying me that different parts have imported and there will be populated dat files by the names of student staff and lesson. |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is no student file | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error and the system could not find the file |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is no staff file | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error and the system could not find the file |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is no studentclass file | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error and the system could not find the file |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is no classslotfile file | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error and the system could not find the file |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is errors in the student.csv | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error with the student.csv file |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is errors in the studentclass.csv | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error with the studentclass.csv file |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is errors in the staff.csv | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error with the staff.csv file |
|  | Import staff and student data button is clicked | Clicking on the import classSlots, studetnclass, staff and student file. With the only problem being that there is errors in the classslots.csv | If the import does not work then there will be none of the basic data that the whole system feeds off so none of it will work. | I will get a message telling me that there was an error with the classslots.csv file |
|  | Btnalgorithm clicked | Btnalgorithm clicked | If the button does not start the algorithm then no appointments will be created and the program will be impetant | I it will hit a breakpoint I will stick inside the subroutine |
|  | The sorting algorithm I run | The student and staff availability files with 10 students and 4 staff as a small scale experitment. | If it works for small numbers it will work the same or large numbers, though there will be an increase in people with out appointments unless the number of appointments is increased. | When I look at the appointment form I will see a number of appointments depending on the effectiveness of the algorithm |
|  | Clicking btnemail | Clicking btnemail and for the purposes of this test I will be changing the email address to @ssfc.ac.uk instead because I don’t have access to the other domains email’s. and I will be just using the student simon bellows | If this does not work then there is no way for anyone to find out what their appointments are. | I will expect to recive an email at [112544@ssfc.ac.uk](mailto:112544@ssfc.ac.uk) detailing appointments of simon bellows |

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| frmDaySettings | | | | |
| Test No | event | Test data | Reason for test | Expected outcome |
|  | Form loads | The form loads | When the form loads the neither the number of days or the length of appointments are decided ergo one can not set the times for the days so they should be invisible | Cmbstart, cmbday and cmbend will be invisible |
|  | Form loads | The form loads | Cmbndays should be filled with the numbers 1 to 255 days for the user to select as the number of days | The combobox will contain the numbers from 1 to 255 |
|  | Ndays is changed  But appointment length is not set | The combo box ndays is changed to 3 days | When the ndays combo box changes its value the combo box need to display it and the variable ndays needs to register it | Ndays will be 3  The selected item in the combobox will be 3 |
|  | Rad5min is selected and ndays is not set yet | Rad5min is selected | When rad5min is selected the variable appoinmentlength needs to regeister it | Appoinmentlength will equal 5 |
|  | Rad10min is selected and ndays is not set yet | Rad10min is selected | When rad10min is selected the variable appoinmentlength needs to regeister it | Appoinmentlength will equal 10 |
|  | Rad5min is selected after ndays is set to 3 | Rad5min is selected after ndays is set to 3 | When rad5min is selected the variable appoinmentlength needs to regeister it and because there is an ndays set it has to make cmbend, cmbstart, and cmbday visible and populated | Appoinmentlength will equal 5 ndays will be 3 and cmbend, cmbstart, and cmbday visible and populated |
|  | Rad10min is selected after ndays is set to 3 | Rad10min is selected after ndays is set to 3 | When rad10min is selected the variable appoinmentlength needs to regeister it and because there is an ndays set it has to make cmbend, cmbstart, and cmbday visible and populated | Appoinmentlength will equal 10 ndays will be 3 and cmbend, cmbstart, and cmbday visible and populated |
|  | Rad5min is selected then ndays is set to 3 | Rad5min is selected then ndays is set to 3 | When rad5min is selected the variable appoinmentlength needs to regeister it and then ndays set to 3 so cmbend, cmbstart, and cmbday visible and populated | Appoinmentlength will equal 5 ndays will be 3 and cmbend, cmbstart, and cmbday visible and populated |
|  | Rad10min is selected then ndays is set to 3 | Rad10min is selected then ndays is set to 3 | When rad10min is selected the variable appoinmentlength needs to regeister it and then ndays set to 3 so cmbend, cmbstart, and cmbday visible and populated | Appoinmentlength will equal 10 ndays will be 3 and cmbend, cmbstart, and cmbday visible and populated |
|  | Rad5min is selected when ndays = 3, rad10min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | Rad5min is selected when ndays = 3, rad10min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | When appointment length is changed the values below may not be relelvent and theirfore are reset if not they might be values that are imposible | Rad5min will be set and ndays will be 3 and cmbend, cmbstart, and cmbday visible and populated but no values will be selected |
|  | Rad10min is selected when ndays = 3, rad5min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | Rad10min is selected when ndays = 3, rad5min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | When appointment length is changed the values below may not be relelvent and theirfore are reset if not they might be values that are imposible | Rad10min will be set and ndays will be 3 and cmbend, cmbstart, and cmbday visible and populated but no values will be selected |
|  | ndays is changed from 3 to 4, rad5min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | ndays changed from 3 to 4, rad5min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | When the number of days is changed due to the fact that in some situations if the cmb boxes were left as is there could be issues it is easier to just change them all and the test is to check whether it does | ndays will be set to 4 and cmbend, cmbstart, and cmbday visible and populated but no values will be selected |
|  | ndays is changed from 3 to 4, rad10min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | Ndays is changed from 3 to 4, rad10min is set and cmbend is set to 2400 and cmbstart is set to 0000 and cmb day is set to 1 | When the number of days is changed due to the fact that in some situations if the cmb boxes were left as is there could be issues it is easier to just change them all and the test is to check whether it does | ndays will be set to 4 and cmbend, cmbstart, and cmbday visible and populated but no values will be selected |
|  | Btnback clicked | Btnback clicked | The user must be able to leave the form or they will be stuck there until they use taskmanager to end the form which would likely be inpossible unless the admin of the consultation evening program is that of the school. | The day settings form will close and the admin form will open. |

# Testing