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| Test Number | Test Function | Test Data | Expected Result | User Requirement |
| 1 | Log on or Log Off | Accepted Data – 1 | Username:  (Allows user to log on) | 1 |
| 2 | Log on or Log Off | Null Data | Do you want to either:  1:login  2:shut down | 1 |
| 3 | Log on or Log Off | Erroneous Data - James | Do you want to either:  1:login  2:shut down | 1 |
| 4 | Enter Username | Accepted Data – Admin1 | Password: | 1 |
| 5 | Enter Username | Null Data | Password: | 1 |
| 6 | Enter Username | Erroneous Data – Wonder Walls Staff | Password: | 1 |
| 7 | Enter Password | Accepted Data – WonderWalls | Please Select a function:  (Allows access to menu system) | 1 |
| 8 | Enter Password | Null Data | That Username or Password is incorrect.  Username: | 1 |
| 9 | Enter Password | Erroneous Data – Letmein123 | That Username or Password is incorrect.  Username: | 1 |
| 10 | Choose Function | Accepted Data – 1 | Allows user to access desired function | 2 |
| 11 | Choose Function | Null Data | Function: | 2 |
| 12 | Choose Function | Erroneous Data – Function1 | Function: | 2 |
| 13 | Competitor First Name | Accepted Data – James | Please enter their last name: | 3 |
| 14 | Competitor First Name | Null Data | not a valid entry, please enter a valid entry. To add a customer please enter their first name: | 3 |
| 15 | Competitor First Name | Erroneous Data – James123 | not a valid entry, please enter a valid entry. To add a customer please enter their first name: | 3 |
| 16 | Competitor Last Name | Accepted Data – Ross | Please enter their postcode: | 3 |
| 17 | Competitor Last Name | Null Data | not a valid entry, please enter a valid entry. To add a customer please enter their last name: | 3 |
| 18 | Competitor Last Name | Erroneous Data – Ross123 | not a valid entry, please enter a valid entry. To add a customer please enter their last name: | 3 |
| 19 | Competitor Postcode | Accepted Data – BT422DX | Please enter their Gender - M/F: | 3 |
| 20 | Competitor Postcode | Null Data | not a valid entry, please enter a valid entry. To add a customer please enter their postcode: | 3 |
| 21 | Competitor Postcode | Erroneous Data – B2422R1 | not a valid entry, please enter a valid entry. To add a customer please enter their postcode: | 3 |
| 22 | Competitor Gender | Accepted Data – M | Please enter in their phone number: | 3 |
| 23 | Competitor Gender | Null Data | not a valid entry, please enter a valid entry. To add a customer please enter their gender: | 3 |
| 24 | Competitor Gender | Erroneous Data – X | not a valid entry, please enter a valid entry. To add a customer please enter their gender: | 3 |
| 25 | Competitor phone number | Accepted Data – 07946119013 | Please enter their email address: | 3 |
| 26 | Competitor phone number | Null Data | not a valid entry, please enter a valid entry. To add a customer please enter their phone number: | 3 |
| 27 | Competitor phone number | Erroneous Data – 0111233 | not a valid entry, please enter a valid entry. To add a customer please enter their phone number: | 3 |
| 28 | Competitor email | Accepted Data – jrross@hotmail.co.uk | This is the customer you are trying to add:  Is this correct? | 3 |
| 29 | Competitor email | Null Data | not a valid entry, please enter a valid entry. To add a customer please enter their email: | 3 |
| 30 | Competitor email | Erroneous Data – jamesRoss@hotmail | not a valid entry, please enter a valid entry. To add a customer please enter their email: | 3 |
| 31 | Add competitor | Accepted Data – Yes | Do you want to add another person? Yes or No | 3 |
| 32 | Add competitor is correct | Null Data | Is this correct? | 3 |
| 33 | Add competitor is correct | Erroneous Data – 12345 | Is this correct? | 3 |
| 34 | Add another competitor | Accepted Data – No | Returns to Menu System | 3 |
| 35 | Add another competitor | Null Data | Not a valid entry  Do you want to add another person? Yes or No | 3 |
| 36 | Add another competitor | Erroneous Data – 12345 | Not a valid entry  Do you want to add another person? Yes or No | 3 |
| 37 | Find Competitor | Accepted Data – 1 | Runs next process | 6 |
| 38 | Find Competitor | Null Data | What is your assigned number? (Only the number not the letters): | 6 |
| 39 | Find Competitor | Erroneous Data – WW5 | What is your assigned number? (Only the number not the letters): | 6 |
| 40 | Reaction Test 1 | Accepted Data – enter button pressed | Your score was: + score | 4 |
| 41 | Reaction Test 1 | Null Data | CLICK | 4 |
| 42 | Reaction Test 1 | Erroneous Data – click | CLICK | 4 |
| 43 | Reaction Test 2 | Accepted Data – 66 | Your score was: + score | 4 |
| 44 | Reaction Test 2 | Null Data | 66 | 4 |
| 45 | Reaction Test 2 | Erroneous Data – 65 | 66 | 4 |
| 46 | Reaction Test 3 | Accepted Data – t I w w | Your score was: + score | 4 |
| 47 | Reaction Test 3 | Null Data | T I w w | 4 |
| 48 | Reaction Test 3 | Erroneous Data – t I z z | T I w w | 4 |
| 49 | Write reaction Times to file | Accepted Data – 0.23, 0.33, 0.44 | Your reaction times have been successfully added to the file: to add another set of times select Reaction Time Tests from the menu | 4 |
| 50 | Write reaction Times to file | Null Data | Your reaction times have been successfully added to the file: to add another set of times select Reaction Time Tests from the menu | 4 |
| 51 | Write reaction Times to file | Erroneous Data – number, 033, james | Your reaction times have been successfully added to the file: to add another set of times select Reaction Time Tests from the menu | 4 |
| 52 | Write competitor details to file | Accepted Data – James, Ross, WW1 | Your Details have been successfully added to the file | 3 |
| 53 | Write competitor details to file | Null Data | Your Details have been successfully added to the file | 3 |
| 54 | Write competitor details to file | Erroneous Data – James1, R0ss, 1WW | Your Details have been successfully added to the file | 3 |
| 55 | Remove competitor from file | Accepted Data – No Data | Competitor successfully removed |  |
| 56 | Remove competitor from file | Null Data | Competitor successfully removed |  |
| 57 | Remove competitor from file | Erroneous Data – James1, Ross,WW1 | Competitor has not been removed |  |
| 58 | Show File | Accepted Data – No Data | Shows complete file | 6 |
| 59 | Show File | Null Data | Shows complete file | 6 |
| 60 | Show File | Erroneous Data – James1, Ross,WW1 | Shows complete file | 6 |
| 61 | Show competitor details | Accepted Data – 1 | Shows competitor’s details | 6 |
| 62 | Show competitor details | Null Data | Competitor not found. Please enter a competitor’s number: | 6 |
| 63 | Show competitor details | Erroneous Data –WW1 | Competitor not found. Please enter a competitor’s number: | 6 |
| 64 | Create file | Accepted Data – list of fieldnames | File created with correct fieldnames |  |
| 65 | Create file | Null Data | Blank file created |  |
| 66 | Create file | Erroneous Data 132242434 | File created with erroneous data |  |
| 67 | Entering climb time 1 | Accepted Data – 22.2 | Please enter your second climb time: | 5 |
| 68 | Entering climb time 1 | Null Data | Incorrect entry. Please enter your first climb time: | 5 |
| 69 | Entering climb time 1 | Erroneous Data climb23443 | Incorrect entry. Please enter your first climb time: | 5 |
| 70 | Entering climb time 2 | Accepted Data – 22.2 | Please enter your third climb time: | 5 |
| 71 | Entering climb time 2 | Null Data | Incorrect entry. Please enter your second climb time: | 5 |
| 72 | Entering climb time 2 | Erroneous Data -climb23443 | Incorrect entry. Please enter your second climb time: | 5 |
| 73 | Entering climb time 3 | Accepted Data – 22.2 | Adds the times to file | 5 |
| 74 | Entering climb time 3 | Null Data | Incorrect entry. Please enter your third climb time: | 5 |
| 75 | Entering climb time 3 | Erroneous Data -climb23443 | Incorrect entry. Please enter your third climb time: | 5 |
| 76 | Write times to file | Accepted Data – 22.2,33.3,44.4 | Writes correct times to file | 5 |
| 77 | Write times to file | Null Data | Writes no times to file | 5 |
| 78 | Write times to file | Erroneous Data -climb56788,gg,44e | Writes incorrect times to file | 5 |
| 79 | Report menu | Accepted Data – 1 | Do you want to view the whole file? | 6 |
| 80 | Report menu | Null Data | That is not a valid entry. Report type: | 6 |
| 81 | Report menu | Erroneous Data – hello | That is not a valid entry. Report type: | 6 |
| 82 | Report 1 | Accepted Data – no data | Shows whole file | 6 |
| 83 | Report 1 | Null Data | Shows whole file | 6 |
| 84 | Report 1 | Erroneous Data – show1 | That is not a valid entry. Report type: | 6 |
| 85 | Report 2 | Accepted Data – 1 | Shows details for number 1 | 6 |
| 86 | Report 2 | Null Data | That is not a valid entry. Wonder Walls number: | 6 |
| 87 | Report 2 | Erroneous Data – show2 | That is not a valid entry. Wonder Walls number: | 6 |
| 88 | Report 3 | Accepted Data – no data | Shows file ordered for first reaction test | 6 |
| 89 | Report 3 | Null Data | Shows file ordered for first reaction test | 6 |
| 90 | Report 3 | Erroneous Data – show3 | That is not a valid entry. Shows file ordered for first reaction test | 6 |
| 91 | Report 4 | Accepted Data – no data | Shows file ordered for first climb time | 6 |
| 92 | Report 4 | Null Data | Shows file ordered for first climb time | 6 |
| 93 | Report 4 | Erroneous Data – show4 | That is not a valid entry. Shows file ordered for first climb time | 6 |
| 94 | Log off | Accepted Data – log me off | Logging off | 1 |
| 95 | Log off | Null Data | Not a valid entry. Please choose a function: | 1 |
| 96 | Log off | Erroneous Data – 123 | Not a valid entry. Please choose a function: | 1 |
| 97 | Shut down | Accepted Data – shut down | Shutting down | 1 |
| 98 | Shut down | Null Data | Not a valid entry. Please choose a function: | 1 |
| 99 | Shut down | Erroneous Data – 342 | Not a valid entry. Please choose a function: | 1 |

Corrective Testing

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| --- | --- | --- |
| Test failed | Code to fix | explanation |
| When entering username and password, the program would continue to ask for inputs after correct ones given | While (passCorrect == False):  while (not username):  username = input("Username: ")    while (not password):  password = input("Password: ")  if trys <= 3 and username == "WonderWalls" and password == "Admin1":  print("Welcome Wonder Walls Staff")  passCorrect = True  Functs() | The code is now in a while loop which means that it will only run provided that the variable passCorrect is equal to False. When the correct username and password are entered passCorrect is set to True. Therefore this ends the loop and ensures the user is not prompted to enter data in again. |
| If incorrect entry given when asking if the user wanted to add another competitor program would end | continues = input("Do you want to add another person? Yes or No\n")  while (continues != ""):  if continues == "Yes":  adding = True  elif continues == "No":  adding = False  Functs()  else:  print("Not a valid entry")  continues = input("Do you want to add another person? Yes or No\n") | This simple piece of code askes the user if they want to add another competitor, to avoid the program from ending if the wrong inputs are given, if the user enters in any other value other than Yes or No then the user is prompted to renter the data so that a correct value is given |
| When adding reaction times to file, times would be added onto a new line | saveLines.append(line)  saveLines[-1] = saveLines[-1].strip() saveLines.append("," + finalScore1 + "," + finalScore2 + "," + finalScore3 + "\n") | The system first adds the existing line to the list called saveLines and then using the strip command removes the comma at the end allow the program to amend to the file the 3 scores from the reaction test onto the same line as the competitor’s details |
| Creating file – blank file created without fieldnames | with open("Competitor Details.csv", "a") as csvWrite:  fieldnames = ["First Name","Last Name","Number","Postcode", "Gender", "Phone Number", "Email Address", "Reaction Test 1", "Reaction Test 2", "Reaction Test 3", "Eiffel Tower Climb", "SkyScraper Climb", "Slemish Climb"]  csvWriter = csv.writer(csvWrite, lineterminator ="\n", delimiter = ",") csvWriter.writerow(fieldnames) | This opens the csv file Competitor details and creates a list called fieldnames – this has all of the column names in it. The file is created when it is opened as append by the program and it then also writes a new row with the contents of fieldnames |
| Program would assign auto number stating at 0 | file = open("Competitor Details.csv", "r")  text = file.read()  length = len(open("Competitor Details.csv").readlines())  customerNum = length | This opens the file competitor details which already includes at least the fieldnames inside. It then reads the number of lines inside the file and as the first row is in fact 0 then the second is 1 so the first competitor number is therefore also 1 avoiding a competitor number being 0 |
| When asked for their Wonder Walls number, if user enters in a number which cannot be found, the program ends | with open("Competitor Details.csv", "rt") as csvFile:  csvReader = csv.reader(csvFile, lineterminator ="\n", delimiter = ",")  x = 0  number = str(input("What is your assigned number? (Only the Number not the letters):"))  wwNumber = ("WW" + number)  for row in csvReader:  for field in row:  if field == wwNumber:  test()  x+=1  if x == 0:  number = str(input("What is your assigned number? (Only the Number not the letters):")) | This opens the csv file again and asks the user to enter in their assigned number and sets the variable x to 0, the program then checks each row to see if it can find this number for example WW2. If the number is found, then the next function in this case – test is run and the variable x is incremented. If the number is not found x remains 0 and the user is prompted to renter their assigned number. |

In conclusions testing is very important as it allows the programmer to test inputting various types of data to see if they give the desired results, if not then the programmer must change the code so that the program can accommodate for that type of data. The code can the be retested and checked to see if it matches the desired result once more. Testing is also related to the user requirements as it allows us to see what the user needs out of the system. For example, the user needs a specific input of competitor details however the first name of the competitor cannot be a number so the system needs to be able to recognise this and prompt the user to renter the data with the correct values. This helps the programmer to easily validate inputs as they can test a wide variety of different data types which the user can enter. It also helps us to clearly see the user requirements and which tests are part of certain user requirements. It ensures that these requirements and successfully met by the program and it can handle any sort of data that the user enters. My testing is extensive as to ensure all the user requirements have been met and that the system can correctly input validate and output data without causing errors