Pseudocode:

Main function

1. Loop while password is not correct and count is less than 3

1.1 Call user\_details

1.2 Call display\_menu

2. loop end

3. if count is equals to 3

2.1 Print “locked out after 3 goes – contact admin”

user\_details function

1. print “enter username”

2. get user input

3. print “enter password”

4. get user input

display\_menu function

1. If login is correct
   1. Loop While choice is not equal to exit\_program
      1. Print “main menu”
      2. Print “1 read and display file”
      3. Print “2 sort and print recorded times”
      4. Print “3 find and print fastest time”
      5. Print “4 find and print the slowest time”
      6. Print “5 search”
      7. Print “6 time occurrences”
      8. Print “7 exit program”
2. Else
   1. Add +1 to count
   2. Print “invalid username or password attempt {value of count}”

Get\_choice

1. Print “enter choice 1-7”
2. Get user input and convert to int32

Act\_on\_choice

1. Switch
   1. case 1
      1. print you have selected read and display file + call ReadFromFile
      2. print “press any key to continue”
      3. break
   2. case 2
      1. print “you have selected sort and print recorded times”
      2. print unsorted array
      3. call print\_array
      4. call sort\_array
      5. call WriteToFile
      6. call print\_array
      7. break
   3. case 3
      1. print you have selected find and print fastest time
      2. call Find\_min
      3. print result from Find\_min
      4. break
   4. case 4
      1. print find and print the slowest time
      2. call Find\_Max
      3. print result from Find\_Max
      4. break
   5. case 5
      1. print you have selected search
      2. call search
      3. print return search value
      4. break
   6. case 6
      1. print you have selected time occurrence
      2. call Count\_Occurrence
      3. print return value from Count\_Occurrence
      4. break
   7. case 7
      1. print you have selected exit program
      2. close program

ReadFromFile function

1. Open text file
2. Set text file content to variable

Print\_array function

1. Loop size of array
   1. Print the array contents
2. Loop end

Sort\_array function

1. Loop size of array
   1. If first number > than being compared, swap out each in order from smallest to largest
2. Loop end

WriteToFile function

* + - 1. Set location of new file
      2. Loop For size of array
  1. Write each value in array to file

1. Loop end

Find\_min

1. Set min variable to first element in array
2. Loop for size of array
   1. Compare each element to min variable
   2. if value is lower than min variable, set value to min variable
3. Loop end

Find\_max

1. Set max variable to first element in array
2. Loop for size of array
   1. Compare each element to max variable
   2. if value is larger than max variable, set value to max variable

Search

1. print enter the time in seconds
2. get user input
3. loop for length of array
   1. if time specified matches value of element in array
      1. set element position to a variable
4. return value of the variable

Count\_Occurrences

1. print enter the time in seconds
2. get user input
3. loop for length of array
   1. if time specified matches value of element in array
      1. add +1 to number count
4. return the number count
5. loop end