**Testing - Criteria 7 - Usability testing and documenting test results**

1. **Usability test**

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| --- | --- | --- | --- |
|  | **Functional requirements** | **User 1 – Comments**  **Christy – Main client** | **User 2 – Comments**  **Student – from class** |
| **Input** | Able to sign up, and save details to be checked when logging in (a message box showing that the data is successfully saved) | I did not like the message that says successfully saved and prefer to open the next form if no issues occur | No comments – like it both ways |
| Able to enter the data and login the next time they open the program | Working fine, no problems | Working fine, no problems |
| Able to select a start/finish time from the datetimepicker | Prefer to have a date selection as well (however, not included in the program – only allowed to save for current day) | It would have been better to double check the time with me, in case I accidentally entered the wrong time as no further modification is allowed (considered and added to the program) |
| Able to enter a username – in the password reminder form – and the security question will be displayed based on the username and allow entering answer | I like the idea, and I liked how it is password reminder and not password reset because it would have been harder for me to remember the new password | I like the idea, but I think that the user can simply look at the xml file and get the answer to the security question and therefore get the decrypted password – I consider it a privacy breach  (the idea was considered but did not work, even though the answer could be successfully encrypted, when trying to decrypt it, it was giving a the password and not the answer for some reason – therefore, did not use it) – (considering that most of the users with a very little level of computer expertise will not be aware of the xml file functions)) |
| Able to enter the pay per hour every time they want to calculate the pay | I like the idea, but I think it would be easier if the pay can be saved as well and then displayed for me when I want to calculate. In case, I want to change it, a change button will allow me to do so.  (idea considered and applied) | No comments – works fine |
| **Output** | Able to display the pay per day, per week and per month | Works fine, need to add a dollar sign before the pay (considered and applied) | Works fine |
| Is the output correct | Yes | Yes |
| Able to display achievements in the two list boxes when pressing display analysis button | Works fine, accurate results | No comments, works fine |
| Are all values per week displayed (the days you have worked so far) and are they in the right order (sorting) | Yes | Yes |
| **Data manipulation** | The program is able to save the start/finish time and then accurately calculate the pay and display it | No comments, works fine | No comments, works fine |
| **Validation** | Sign up – allow username to be any combination of characters (no limit) – just don’t allow it to be null | Username validation works very well, no changes | Username validation works very well, no changes |
| Signup – allow password to be any combination of characters (no specific type -string) with a limit 6 – 8 characters and not null | Password validation works very well but it would be better to allow more than 8 characters to be entered as the password (min 8) (idea considered and changed to 6 minimum instead of 8 as not all users may have passwords that are 8 characters min) | Same idea – 6 minimum |
| Have to choose a security question to allow the signup | No comments – works fine | No comments – works fine – robust! |
| Login – username: no restrictions except for null as it will be compared to the signup username saved in the xml file | No comments – works fine | No comments – works fine |
| Login – password: restriction on the password length and null | No comments – works fine | Password doesn’t need to be validated again as it has already passed the validation at signup stage, therefore, only check if it matches the details in the xml file (considered and applied) |
| Finish time – checks if the start time is less than the finish time, then save  (Start time, no validation required) | When trying to enter the finish time before the start time, an error occurs. The program should first check if a start time exists and if so, do the next validation  (considered and applied) | No comments – works fine |
| Calc form – allow numbers only for the pay per hour textbox | No comments – works fine | No comments – works fine |
| Calculates only after checking that both the start and finish time exist | No comments – works fine | No comments – works fine |
|  | **Non-functional requirements** | **User 1 – Comments**  **Christy – Main client** | **User 2 – Comments**  **Student – from class** |
| **Usability** | Clear instructions throughout the whole program and help buttons where needed | No comments – works fine | Having problem in the selection form - form 4. A bit confusing. I would be better to have a title for the form. (considered and applied. I also added the need help button that will give a quick introduction to the user about what the solution can and can’t do) |
| Back to sign up and go to login buttons in case the user opens the wrong one accidentally | No comments – works fine | I would like to have back and forward buttons for other forms as well (especially in form 7)  (considered and applied – also added to other forms not only 7) |
| Is the tooltip shown when hovering the mouse cursor helpful? | Yes, very halpful | Yes |
| Exit message – to confirm that the user wants to exit – in case exit was pressed accidentally | Like it, no further comments | Like it, no further comments |
| **Reliability** | Accurate numbers displayed | No comments – works fine | No comments – works fine |
| Accurate sorting for the pay | No comments – works fine | No comments – works fine |
| **Portability** | Able to use the program on any windows computer | I would prefer if it worked on a mobile device as it will be more efficient for its purpose – as it is more likely for me to have my mobile than my laptop and easier to save my data.  (considered but not applied – don’t have enough coding knowledge for it – maybe in the future) | No comments – works fine |
| **Robustness** | Validation works throughout the whole program | No comments – works fine | No comments – works fine |
| Solution doesn’t crush if wrong data is entered, but gives warnings | No comments – works fine | No comments – works fine |
| **Maintaina-bility** | Data in the xml files can be manipulated/maintained using a notepad | No comments – works fine | No comments – works fine |

1. **Testing table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Form no.** | **What to test?** | **Test data** | **Expected results** | **Actual results** | **Changes required** |
| **1.** | Pressing the NewBtn opens up the Signup page | Press NewBtn | Open the Signup page | Open the Signup page | None |
| Pressing the ExistBtn opens up the Login page | Press ExistBtn | Open the Login page | Open the Login page | None |
| **2.** | On SignupBtn press, UNTextBox doesn’t allow blank values | Nothing | Message “please enter a Username” | Message “please enter a Username” | None |
| On SignupBtn press, PassTextBox doesn’t allow blank values | Nothing  \*Happens after checking for username – if username is not valid, it will not check for this | Message “please enter a password” | Message “please enter a password” | None |
| On SignupBtn press, ConPassTextBox doesn’t allow blank values | \*Happens after checking for password – if password is not valid, it will not check for this | “please enter a confirmation password” | “please enter a confirmation password” | None |
| On SignupBtn press, UNTextBox doesn’t allow spaces | Mar ella | Message “spaces aren’t accepted, please retype your username without any spaces” | Message “spaces aren’t accepted, please retype your username without any spaces” | None |
| On SignupBtn press, PassTextBox doesn’t allow spaces | Sss ddd | Message “spaces aren’t accepted, please retype your password without any spaces” | Message “spaces aren’t accepted, please retype your password without any spaces” | None |
| On SignupBtn press, PassTextBox doesn’t allow passwords less than 6 characters long | abcd | Message “Password should be at least 6 characters long” | Message “Password should be at least 6 characters long” | None |
| On SignupBtn press, PassTextBox doesn’t allow passwords less than 6 characters long | abcdef | No error – move to form 4 (if passes all the other validations) | No error – move to form 4 | None |
| On ShowBtn press – change the format of the password  \*Same for ConPass | Press button | Converts the password from dots to actual characters | Converts the password from dots to actual characters | None |
| On HideBtn press - change the format of the password  \*Same for ConPass | Press button | Converts the password from actual characters to dots | Converts the password from actual characters to dots | None |
| On InfoBtn press – shows information about the password restriction | Press button | Message “Password should be at least 6 characters long” | Message “Password should at least 6 characters long” | Add “be” to the sentence to make sense |
| On SignupBtn press – it shows an error if no security question is chosen | Security question text is “Please choose a question…” (not changed) | Message “Please choose a security question – in case of forgotten password, the security question will help us verify your account” | Message “Please choose a security question – in case of forgotten password, the security question will help us verify your account” | None |
| On SQcomboBox – shows QnsLabel and QnsTextBox if the choice is others…  If the user/s change their mind, and choose a different choice, QnsLabel and QnsTextBox will be hidden | Choose Others…  Choose What was your first car? | Show QnsLabel and QnsTextBox  Hide QnsLabel and QnsTextBox | Show QnsLabel and QnsTextBox  Hide QnsLabel and QnsTextBox | None  Add the code for hiding QnsLabel and QnsTextBox to SaveSecurityQns() |
| On SignupBtn press – QnsTextBox does not allow blank values | Nothing | Message “Please enter your Security Question - in case of forgotten password, the security question will help us verify your account" | Message “Please enter your Security Question - in case of forgotten password, the security question will help us verify your account" | None |
| On SignupBtn press – AnsTextBox does not allow blank values | Nothing | Message “please write an answer to the security question you choose | Message “please write an answer to the security question you choose | None |
| On SignupBtn press – AnsTextBox does not allow spaces | Spaces “ ” | Message “spaces aren’t accepted, please retype your answer without any spaces” | Nothing | Add the code for spaces to SecQnsValidation() |
| On SignupBtn press – if it passes all the previous tests, save the details in the xml file (dataBase) [with password encrypted] | | | | |
| On SkipBtn press – opens the Login page | Press the button | Open the Login page | Open the login page | None |
| **3.** | On SkipBackBtn press – opens the Signup page | Press the button | Open the signup page | Open the signup page | None |
| On LoginBtn press – it doesn’t allow blank values either in the UNTextBox or the PassTextBox (or both) | Nothing | Message “Please enter a Username/Password” | Message “Please enter a Username/Password” | None |
| On LoginBtn press – allows login only of the data entered match the data in the xml file | Memo  Memo99 - exists  George  George23 – doesn’t exists | Allow login (open selection page)  Message “Incorrect username/password” | Allow login (open selection page)  Message “Incorrect username/password” | None  None |
| Same test for ShowBtn and HideBtn as the one in the previous form | | | | |
| On ForgotPassBtn press – opens Password reminder page | Press the button | Open the password reminder page | Open the password reminder page | None |
| **4.** | On StartBtn press – open the starttime form | Press the button | Open the Start time form | Open the Start time form | None |
| Same test for FinishBtn and CalcBtn | | | | |
| On HelpBtn press – display message with instructions about the software | Press the button | Message showing information about the software | Message showing information about the software | None |
| **5.** | On SaveBtn press – it shows error when neither of the radiobuttons is checked (AutoRB and ManRB) | Press the button without choosing any | Message “Please select either you want the time to be recorded AUTOMATICALLY or MANUALLY” | Message “Please select either you want the time to be recorded AUTOMATICALLY or MANUALLY” | None |
| On SaveBtn press – choosing AutoRB shows a message to confirm the time with the user | Choose AutoRB and press the button | Message “Is this your start time 16:32” – which is the current time | Message “Is this your start time 16:32” | None |
| On SaveBtn press – after choosing the AutoRB, pressing Yes in the dialog box, saves the current time | Choose AutoRB and press the button and then Yes | Saves the current time in the Xml file (if the xml exists) Or creates a new xml file and saves it in it. | Saves the current time in the Xml file | None |
| On SaveBtn press – after choosing the AutoRB, pressing No in the dialog box, allows the user to re-enter | Choose AutoRB and press the button and then No | Close the dialog box and allow re-entering time without saving anything | Close the dialog box and allow re-entering time without saving anything | None |
| On SaveBtn press – choosing ManRB shows a message to confirm the time with the user | Choose ManRB, enter the time 10:34 in the ManTimePicker and press the button | Message “Is this your start time 10:34” – which is the time chosen in the ManTimePicker | Message “Is this your start time 10:34” | None |
| On SaveBtn press – after choosing the ManRB, pressing Yes in the dialog box, saves the current time | Choose ManRB and press the button and then Yes | Saves the time in the Xml file (if the xml exists) Or creates a new xml file and saves it in it. | Saves the time in the Xml file | None |
| On SaveBtn press – after choosing the ManRB, pressing No in the dialog box, allows the user to re-enter | Choose ManRB and press the button and then No | Close the dialog box and allow re-entering time without saving anything | Close the dialog box and allow re-entering time without saving anything | None |
| On SaveBtn press – if the finish time has already been recorded, it displays an error notifying the user of already entered values | Choose any radiobtn and press save | Message “Opps, it looks like you have already entered a START time for the day” | Message “Opps, it looks like you have already entered a START time for the day” | None |
| On SkipBtn press – Opens the finish time form | Press the button | Open the finish time form | Open the finish time form | None |
| On SkipBackBtn press – opens the selection form | Press the button | Opens the selection form | Opens the selection form | None |
| **6.** | On SaveBtn press – it shows error when neither of the radiobuttons is checked (AutoRB and ManRB) | Press the button without choosing any | Message “Please select either you want the time to be recorded AUTOMATICALLY or MANUALLY” | Message “Please select either you want the time to be recorded AUTOMATICALLY or MANUALLY” | None |
| On SaveBtn press – it shows error when the user try to enter a finish time without entering a start time | Choose either ManRB or AutoRB and press save | Dialogbox “Oops, it looks like you have NOT entered a START time for the dat, would you like to enter it now?” | Dialogbox “Oops, it looks like you have NOT entered a START time for the dat, would you like to enter it now?” | None |
| If Yes open the start time form | Choose Yes | Open the start time form to record the start time | Open the start time form to record the start time | None |
| If No, close the dialog and keep it to the user to do whatever they want to do | Choose No | Closes the dialogbox | Closes the dialogbox | None |
| Choose any radiobtn and press save | Message “Opps, it looks like you have already entered a Finish time for the day” | Message “Opps, it looks like you have already entered a Finish time for the day” | None | On SaveBtn press – if the finish time has already been recorded, it displays an error notifying the user of already entered values |
| On SaveBtn press – choosing AutoRB shows a message to confirm the time with the user | Choose AutoRB and press the button  (Check if the time is earlier than the start time. If so shows an error) | Message “the time you chose, is same as or earlier than your start time, please pick a different time” | Message “the time you chose, is same as or earlier than your start time, please pick a different time” | None |
| On SaveBtn press – choosing AutoRB shows a message to confirm the time with the user | Choose AutoRB and press the button  (if the time passes the time validation) | Message “Is this your start time 16:32” – which is the current time | Message “Is this your start time 16:32” | None |
| On SaveBtn press – after choosing the AutoRB, pressing Yes in the dialog box, saves the current time | Choose AutoRB and press the button and then Yes | Saves the current time in the Xml file (if the xml exists) Or creates a new xml file and saves it in it. | Saves the current time in the Xml file | None |
| On SaveBtn press – after choosing the AutoRB, pressing No in the dialog box, allows the user to re-enter | Choose AutoRB and press the button and then No | Close the dialog box and allow re-entering time without saving anything | Close the dialog box and allow re-entering time without saving anything | None |
| On SaveBtn press – choosing ManRB shows a message to confirm the time with the user | Choose ManRB enter the time 10:34 in the ManTimePicker and press the button  (Check if the time is earlier than the start time. If so shows an error) | Message “the time you chose, is same as or earlier than your start time, please pick a different time” | Message “the time you chose, is same as or earlier than your start time, please pick a different time” | None |
| On SaveBtn press – choosing ManRB shows a message to confirm the time with the user | Choose ManRB, enter the time 10:34 in the ManTimePicker and press the button  (after passing the time validation) | Message “Is this your start time 10:34” – which is the time chosen in the ManTimePicker | Message “Is this your start time 10:34” | None |
| On SaveBtn press – after choosing the ManRB, pressing Yes in the dialog box, saves the current time | Choose ManRB and press the button and then Yes | Saves the time in the Xml file (if the xml exists) Or creates a new xml file and saves it in it. | Saves the time in the Xml file | None |
| On SaveBtn press – after choosing the ManRB, pressing No in the dialog box, allows the user to re-enter | Choose ManRB and press the button and then No | Close the dialog box and allow re-entering time without saving anything | Close the dialog box and allow re-entering time without saving anything | None |
| On SkipBtn press – Opens the Calculator form | Press the button | Open the calculator form | Opens the calculator | None |
| On SkipBackBtn press – opens the start form | Press the button | Opens the start form | Opens the start form | None |
| **7.** | On the first time recording the pay(pressing the CalcBtn) – The PayTextBox doesn’t allow blank values  *Or when pressing the ChangeBtn if the pay is already displayed* | Nothing | Message “Please enter how much you get paid per hour” | Message “Please enter how much you get paid per hour” | None |
| On the CalcBtn press – PayTextBox doesn’t allow letters and characters to be entered (except for “.”) | Sadfa  21,4 | Message “Please enter a numerical value, note that no characters are allowed except for a dot (.)” | Message “Please enter a numerical value, note that no characters are allowed except for a dot (.)” | None |
| On the CalcBtn press – PayTextBox doesn’t allow spaces | 21 4 | Message “Spaces aren’t accepted, please retype your PAY without any spaces” | Message “Spaces aren’t accepted, please retype your PAY without any spaces” | None |
| On the CalcBtn press – PayTextBox doesn’t allow negative values | -21 | Message “Please enter a valid Pay - no negative numbers!” | Message “Please enter a valid Pay - no negative numbers!” | None |
| On the CalcBtn press – PayTextBox only allows numerical values | 23.5 | Dialogbox “Is this your Pay per hour: 23.5” | Dialogbox “Is this your Pay per hour: 23.5” | None |
| If Yes | Yes | Disable the CalcBtn and calculate the pay | Disable the CalcBtn and calculate the pay | None |
| If No | No | Close the dialogbox and allow the user to reenter a value | Close the dialogbox and allow the user to reenter a value | None |
| When opening form 7 (calculator) - If the pay has previously been recorded, it displays it and gives user an option to change it | Open calculator form | ChangeBtn, PayAmountDisplay and PayDisplay are visible while HrsInstLabel and PayTextBox are hidden | ChangeBtn, PayAmountDisplay and PayDisplay are visible while HrsInstLabel and PayTextBox are hidden | None |
| When opening form 7 (calculator) – If the pay has already been calculated, it displays a message (InstLabel) that it has been calculated and hides the other buttons, labels and textbox underneath it | Open calculator form | Instlabel is visible  ChangeBtn, NoChangeBtn, PayAmountDisplay, PayDisplay, HrsInstLabel, CalcBtn and PayTextBox are hidden | Instlabel is visible  ChangeBtn, NoChangeBtn, PayAmountDisplay, PayDisplay, HrsInstLabel, CalcBtn and PayTextBox are hidden | None |
| On CalcBtn press – if no data was entered for either the Start or Finish time or botn, a dialog box with a warning | Jumping straight to calculator without adding start and finish times | Message “Oops, it seems like you have forgotten to enter a Start time”  And opens up the start time form | Message “Oops, it seems like you have forgotten to enter a Start time”  And opens up the start time form | None |
| Same thing with Finish time not being recoreded | | | | |
| On DisplayBtn press – if no choice is selected form (day, week or month) it shows a message | Nothing chosen | Message “Please select how you would like your salary to be displayed” | Message “Please select how you would like your salary to be displayed” | None |
| On DisplayBtn press – if DayRB is checked, it displays the pay per day | DayRB is checked | You have worked 1.63 hour/s today and your salary is $38.3  Given that the pay is 23.5 | You have worked 1.63 hour/s today and your salary is $38.3 | None |
| On DisplayBtn press – if WeekRB is checked, it displays the pay per week | WeekRB checked | You have worked 22.23 hour/s this week and your salary is $537.26  Given details for the week | You have worked 22.23 hour/s this week and your salary is $537.26 | None |
| On DisplayBtn press – if MonthRB is checked, it displays the pay per month | MonthRB checked | You have worked 27.41 hour/s this month and your salary is $896.38  Given details for the month | You have worked 27.41 hour/s this month and your salary is $896.38 | None |
| On DABtn press – display the weekly achievenments in the assigned list box and the pay ranking in the other one | Press DABtn | Analysis displayed in both list boxes  \*this is not a message that will be displayed on the screen | Analysis displayed in both list boxes | None |
| On SkipBackBtn press – open the finish time form | Press SkipBackBtn | Open the finish time form | Open the finish time form | None |
| **8.** | On SubmitBtn press – doesn’t allow the UNTextBox to be empty | Nothing | Message “Please enter a username to restore password for” | Message “Try again” | Add validation for blank values to the SubmitBtn\_click |
| On SubmitBtn press – checks if the username exists (if it doesn’t exist show an error message) | Sdfafa  (Doesn’t exist) | Message “Please check your username and try again - it doesn't seem to exist” | Message “Please check your username and try again - it doesn't seem to exist” | None |
| On SubmitBtn press - checks if the username exists (if it does display the security question, enable the CheckAnsBtn and disable the SubmitBtn | Memo  (Exists) | Display “What is my name” in the QnsLabel, enable CheckAnsBtn and disable the SubmitBtn | Display “What is my name” in the QnsLabel, enable CheckAnsBtn and disable the SubmitBtn | None |
| On CheckAnsBtn press – doesn’t allow blank values in the AnsTextBox | Nothing | Message “Please enter an Answer to the question displayed above” | Message “sorry – wrong answer – please try again and be careful the app is case sensitives (upper or lower cases matter)” | Add validation for null values entered in the AnsTextBox |
| On CheckAnsBtn press – if the answer is wrong, displays an error (3 times max) | asdfasf | Message “Sorry, wrong answer - please try again and be careful the app is case sensitive (upper or lower cases matter)” | Message “Sorry, wrong answer - please try again and be careful the app is case sensitive (upper or lower cases matter)” | None |
| On CheckAnsBtn press – if the answer is wrong 3 times, asks the user to contact the administration team or sign up and displays a dialog box for the choice | Asdfasf (4th time) (3rd time if there’s a null check) | Message “Your answer doesn't seem to match, please contact the administration team. Otherwise, feel free to create a new account” | Message “Your answer doesn't seem to match, please contact the administration team. Otherwise, feel free to create a new account” | None |
| On the previous MessageBox press OK – shows a dialog box asking the user if they want to go to signup of close the program and disable the CheckAnsBtn | Press Ok | Dialogbox “Do you want to go back to Signup? Otherwise the program will close.”  CheckAnsBtn Disabled | Dialogbox “Do you want to go back to Signup? Otherwise the program will close.”  CheckAnsBtn Disabled | None |
| If Yes – open the signup page | Yes | Open the signup page | Open the signup page | None |
| If No – Close the program | No | Close the program | Close the program | None |
| On CheckAnsBtn press – if the answer is correct, display the decrypted password in a messagebox. Then move to the login form | WELS  (correct answer) | Message “Your password is: Memo1999 make sure you don’t lose it again”  Open the login form once OK is pressed | Message “Your password is: Memo1999 make sure you don’t lose it again”  Open the login form once OK is pressed | None |
| **2,3,5,6,7,8** | On x button press – asks the user if the are sure they want to exit, in case of any mistake pressing | Press x | Dialog box “Do you really want to close the program?” with two choices a Yes and a No | Dialog box “Do you really want to close the program?” with two choices a Yes and a No | None |
| If Yes | Press Yes | Close the program | Close the program | None |
| If No | Press No | Close the dialog box and return to the form | Close the dialog box and return to the form | None |
| **1,4** | On x button press – exist the program (close it) | Press x | Close the program | Close the program | None |
| **Xml** | Memosalary (example) – calculates accurate & correct pay values from the entered data - **Day** | StartTime 02:28  FinishTime 10:00  Pay per hour 25.3 | Pay per day = 190.51 | Pay per day = 190.51 | None |
| Memosalary (example) – calculates accurate & correct pay values from the entered data - **Week** | From the xml  Day1   * 1.13hrs * $26.44   Day2 & 3   * 0 * 0   Day4   * 7.53hrs * $190.51   Day5   * 4.72hrs * $110.92   \*different pay per hour amounts | Week analysis  13.38hrs  $327.87 | Week analysis  13.38hrs  $327.87 | None |
| Memosalary (example) – calculates accurate & correct pay values from the entered data - **Month** | Same as above | Month analysis  13.38hrs  $327.87 | Month analysis  13.38hrs  $327.87 | None |
| Change week number if the day number refers to start of a new week – also reset data for the new week | From xml file, day number 8 | Week num 2  Week pay = day pay  Week time = day time | Week num 2  Week pay = day pay  Week time = day time | None |
| Change month number if the day number refers to start of a new month – also reset data for the new month | From xml file, day number 31 – regardless of the month | Month num 2  Month pay = day pay  Month time = day time | Month num 2  Month pay = day pay  Month time = day time | None |