

Programming For Engineers

Assignment – C WIN32 GUI

by

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Assignment Information

- This assignment cover 20% of marks and it is develop to test your ability in WIN32 GUI programming. In a group of two students, please prepare your program and submit to me. Submit your codes to my email. Your written program should be able to demonstrate the following capabilities:
 - 1) Produce basic window form.
 - 2) Produce menu and sub-menu.
 - 3) Display static text on window form.
 - 4) Have text edit on window form.
 - 5) Have status bar on window form.
 - 6) Have a button and do some actions with the button.

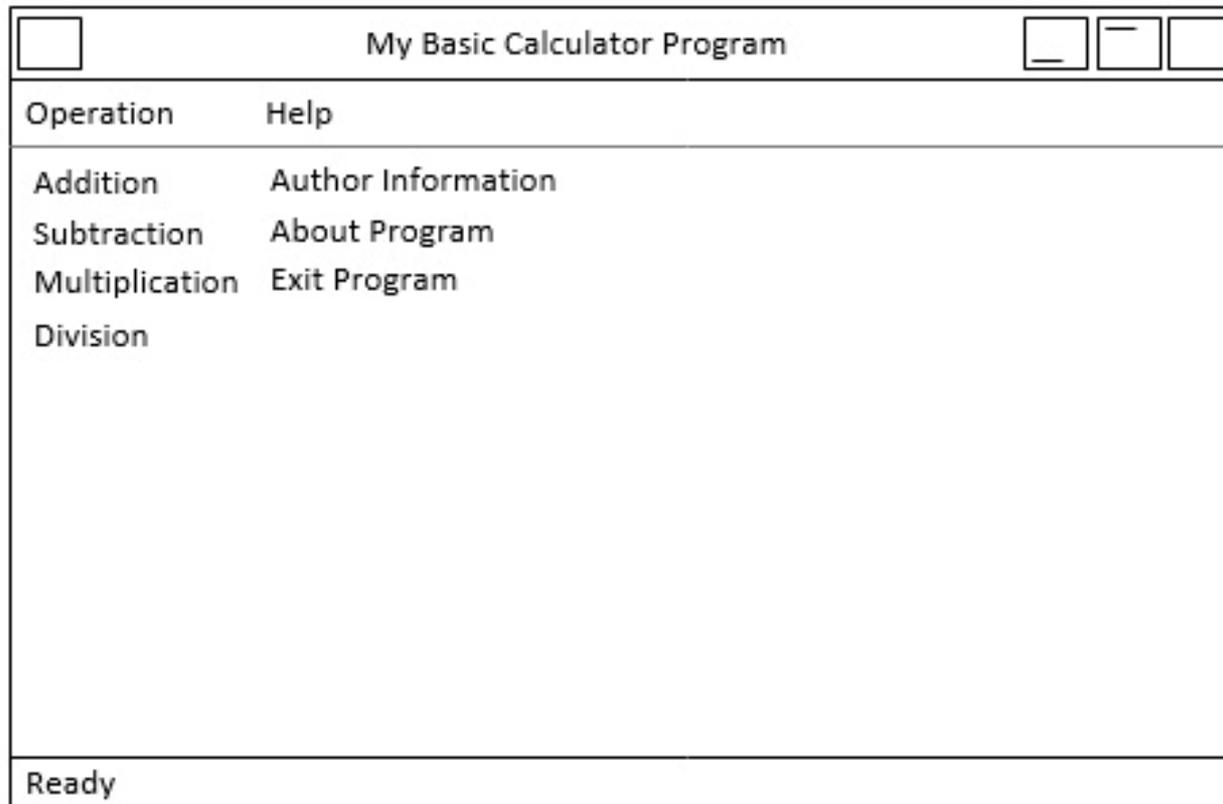


Task

- 1) Write a program to display a window form as shown below. Put your personal icon (anything) in the window icon. Your icon must be suitable for calculator program. Please choose your own color for this window. Your chosen color must has good contradiction with other color for button etc. There are two main menu: (i) Operation and (ii) Help. Four sub-menu in Operation menu and three sub-menu in Help menu as shown in below figure. Status bar is at the bottom of window form. It shows “Ready” when it is first appear.



Task



Task

- 2) When the program is running, the first window will be appear as in below figure. This is addition operation. The instructions for user is always available in right panel. You can write anything about instructions for user. Use your creativity. When user clicks the button “Calculate Addition”, the answer for addition of two inputs will be appears in the text edit that aligned with “Answer”. In addition to that action, the status bar message will change to “Done”. You must add a control that popup a message box “You do not insert first and second input” when user clicks “Calculate Addition” button without inserting first and second input.



Task

| My Basic Calculator Program | |
|--|--|
| Operation | Help |
| <p>Please insert two inputs:</p> <p>First input: <input type="text"/></p> <p>Second input: <input type="text"/></p> <p>Answer: <input type="text"/></p> <p><input type="button" value="Calculate Addition"/></p> | <p>Instructions for user:</p> <ol style="list-style-type: none">1) bla...bla...bla...2) bla...bla...bla...3) bla...bla...bla...4) bla...bla...bla...5) bla...bla...bla...6) bla...bla...bla...7) bla...bla...bla...8) bla...bla...bla...9) bla...bla...bla...10) bla...bla...bla...11) bla...bla...bla...12) bla...bla...bla... |
| Ready | |



Task

- 3) When the user clicks the sub-menu “Exit Program”, a popup a message will appear as “Are you really want to exit?”. Put option to choose whether to exit (Yes) a program or not (No). If exit (Yes), the program exits. If not (No), the program will not exits. When the user clicks the sub-menu “Author Information” or “About Program”, a message box appears that says about your personal information and briefly about the program respectively.



Task

- 4) When the user clicks the sub-menu “Addition” or “Subtraction” or “Multiplication” or “Division”, the button “Calculate Addition” will change according to the selection of operation. For example, if user clicks sub-menu “Subtraction”, the button will change to “Calculate Subtraction”. When user clicks the button “Calculate Subtraction”, the answer for subtraction of two inputs will be appears in the text edit that aligned with “Answer”. In addition to that action, the status bar message will change to “Done”. You must add a control that popup a message box “You do not insert first and second input” when user clicks “Calculate Subtraction” button without inserting first and second input. This mechanism is same to other operations also.



Assessment Rubrics

| No | Program Capability | Scale 3 | Scale 2 | Scale 1 | Scale 0 |
|----|---|-------------------------|---|--|------------------------------------|
| 1 | Produce basic window form with the prescribed parameter. | Answering all questions | Answering partially (half) of questions | Answering some (maybe 1 or 2) of questions | Not answering all questions at all |
| 2 | Produce menu and sub-menu. Do some action with the sub-menu. | | | | |
| 3 | Display static text on window form. | | | | |
| 4 | Have text edit on window form and can display text inside it. | | | | |
| 5 | Have status bar on window form and the message is changeable. | | | | |
| 6 | Have a button and do some actions with the button. | | | | |



Assessment Rubrics

The total marks is $(18 / 18 \times 20\%) = 20\%$. However, we give you a chance to add some more marks if you can do the following tasks:

- 1) Add two more sub-menus: (i) Decimal to Binary and (ii) Power.
- 2) Decimal to binary function is to convert one input by user in decimal to some binary number. For example, if user insert number 8, the answer should be 0000 0100. (6 MARKS)
- 3) Power function is to convert one input by user in decimal to power of 0 to power of 8 number. For example, if user insert number 2, the answer should be 1 (20), 2 (21), 4 (22), 8 (24), 16 (25), 32 (26), 64 (27), 128 (28). (4 MARKS)

This two functions are actually showed during our previous lecture. If you are able to answer this additional task, we will add 10 more marks to your total assessment. Please try to answer. You can google it, you can discuss with your friend, you can seek help from books, etc.

