Assignment 8

Points: 100. Chapter 20, Exercise 20.7, 5th edition-Page 812, 6th edition-Page 839.

Set Up

Create a user interface that looks like the two following exhibits.

Exhibit A. Design View

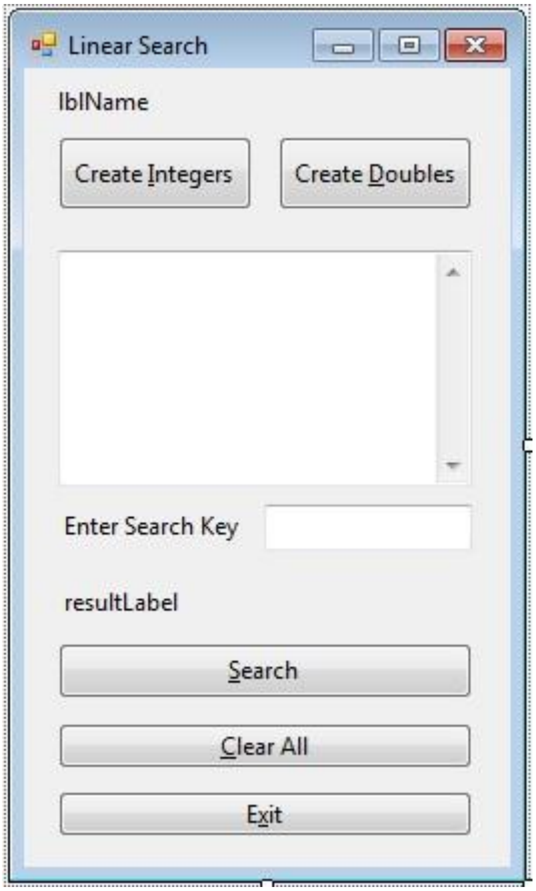
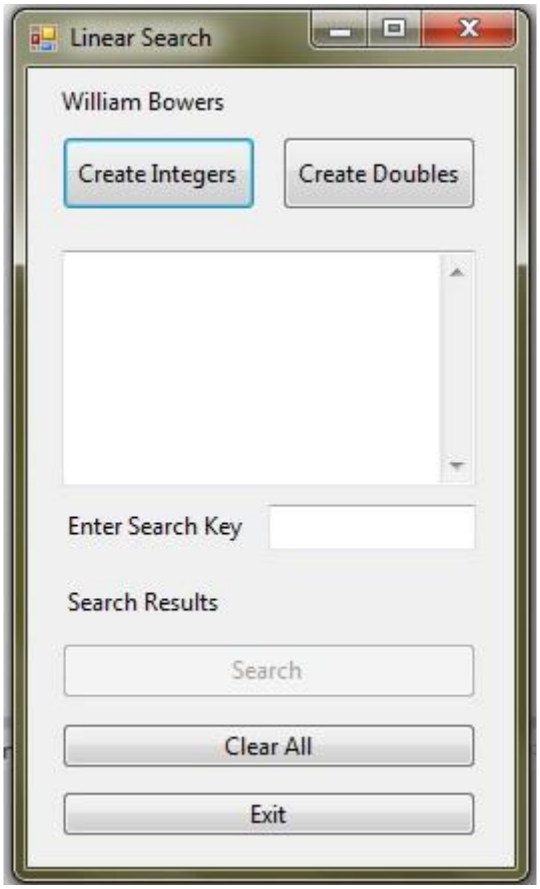


Exhibit B. On Form Load



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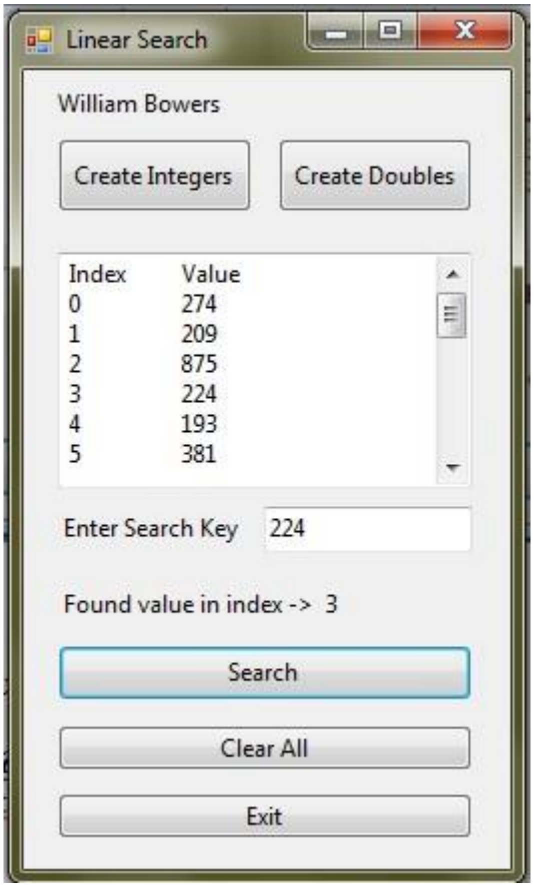
Additional Components to Add to the Author's Starter Files
When adding components, you may use any variable name you wish. I reference my names to give you a reference as to what component I am discussing.

1. Add a Label, display your full name. I used lblName as the variable name.
2. Modify the Search button to add a hot key of "S" in "**S**earch".
3. Modify the "Create integers" button to read as "Create **I**ntegers", with a hot key feature on the capital letter "I" in **I**ntegers.
4. Modify the "Create doubles" button to read as "Create **D**oubles", with a hot key feature on the capital letter "D" in **D**oubles.
5. Add a Clear All button, with a hot key feature using the letter "C" in **C**lear. Tasks are outlined below.
6. Add an Exit button, with a hot key feature using the lowercase letter "x" in E**x**it. Tasks are outlined below.

Exhibit C. Runtime: Create Integers

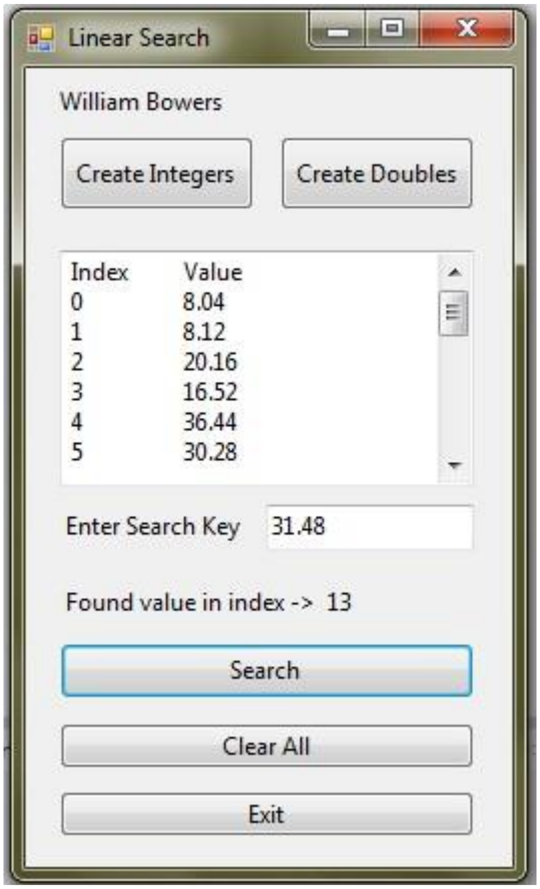


```
Index     Value
0         274
1         209
2         875
3         224
4         193
5         381
```

Enter Search Key 224

Found value in index -> 3

Exhibit D. Runtime: Create Doubles



```
Index     Value
0         8.04
1         8.12
2         20.16
3         16.52
4         36.44
5         30.28
```

Enter Search Key 31.48

Found value in index -> 13

Job Duties (Attributes) of the Components in addition to the tasks provided.

On Form Load

1. My Label designated "lblName" changes it text value to "Your full name" by calling your personal heading method called getName( ) that you will add to the project.
2. My Label designated "resultLabel" changes its text value to "Search Results".

Create Integers Button

1. Clear the displayTextBox.
2. My Label designated "resultLabel" changes its text value to "Search Results".
3. Clear the inputTextBox.
4. Return the cursor's Focus to the inputTextBox.

Create Doubles Button

1. Clear the displayTextBox.
2. My Label designated "resultLabel" changes its text value to "Search Results".
3. Clear the inputTextBox.
4. Return the cursor's Focus to the inputTextBox.

Search Button

1. Use a default value for the resultLabel of Value not found. **resultLabel.Text = "Value not found";**
2. Next, place the Focus on the inputTextBox.
3. Code **inputTextBox.SelectionStart = 0;** to place the cursor at the beginning of any value in the inputTextBox.
4. Code **inputTextBox.SelectionLength = inputTextBox.Text.Length;** to reverse highlight the value, so all the user has to do is start retyping without having to manually highlight the contents.

Clear All Button

1. Clear the displayTextBox.
2. Change the resultLabel's text to "Search Results"
3. Clear the contents of the inputTextBox.
4. Return the Focus of the cursor to the inputTextBox for the user's next entry.

Exit Button

Terminates the runtime application back to Design View.

Optional: feel free to add any additional enhancements you may be thinking about.

[Continued]

Code Requirements

You will want to have two arrays, one an int and one a double to store the two different types of values.

In the create integers button click method do the following.

- Create a string containing 20 random numbers between 0 and 1000.
- Use the Random class to create a random variable.
  - Random number generation can be found on page 245 in the 5th edition and page 252 in the 6th edition of your textbook.
- Remember to add these values to the output string.
- Hint: It's easier to do this using a loop, I would suggest a for loop
- Once the numbers are generated and added to the output string, display the output string in the display text box.

For the create doubles button make it similar to the create integers button code. The main difference will be in the random number generation. Use the Random class again to find a number between 0 and 1000. This time, however, divide the number by 25.0. This will give you a double number between 0 and 40. Then store that into the double array spot and an output string that will be displayed in the display text box.

In the search button code make a call to a generic class that will do a linear search through whichever array gets passed to it. There should be two different calls to the search method. One if the user generates integer numbers and one if the user generates decimal numbers. You can make the search method static so you do not have to create a new object to use the method.

Assignment Submission

Zip up everything in your project and submit it through the blackboard drop box.