CMPE 1666-Intermediate Programming

Lecture3B-Fall2024

The Fisher-Yates Shuffling Algorithm

Random Shuffling- A Naïve Shuffling Algorithm

- Consider shuffling the characters A-F, below:

A	B	C	D	E	F

For (i=0; i<n; i++)

Generate a random number r, in range 0 to n-1

swap(array[i], array[r])

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Random Shuffling- The Fisher-Yates Shuffling Algorithm

A	B	C	D	E	F

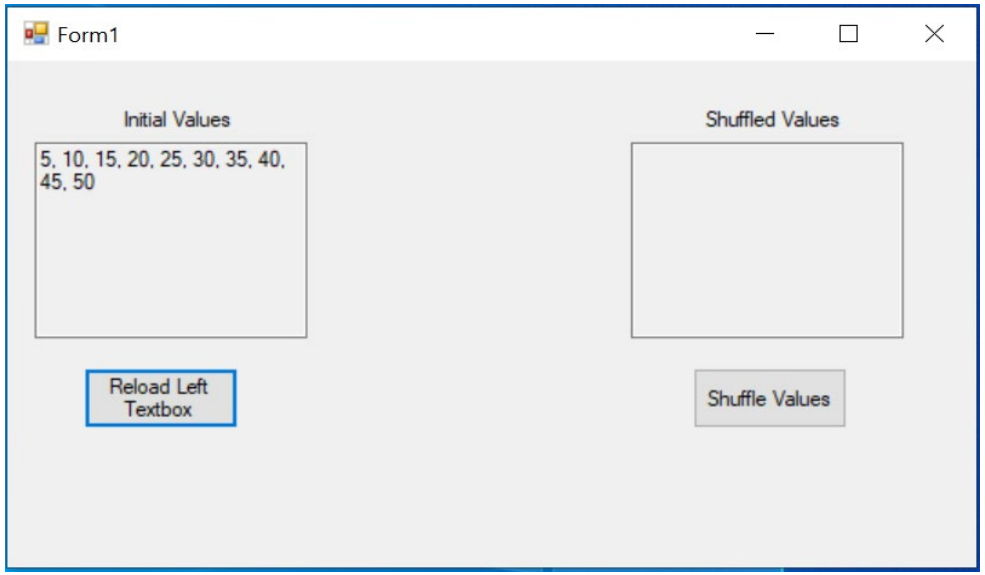
For (i=n-1; i>0; i--)

Generate a random number r, in range 0 to i

swap(array[i], array[r])

Lecture3B- Demo 1

- You have been provided with an application with the UI shown below.



- The Form class contains a list of integers. On Form Load, the list is displayed in the left multiline textbox.
- We'll add a method that shuffles the list, using the Fisher-Yates algorithm.
- We then add an event handler for the "Shuffle Values" button such that it calls the above method to shuffle the values and displays the new list in the right listbox

Lecture3B- Demo 1b

- To Demo1, add an event handler for the “Reload Left Textbox”, such that it reloads the (now shuffled) list into the left textbox and it clears the right textbox.
- Now you can each time reload the previously shuffled list into the left textbox shuffle again, with the new results going into the right textbox.