Loops & Repetition – (for)

The ++ and -- operators

To increment a variable:

- number = number **+** 1;
- number **+=** 1;
- number**++**;

To decrement a variable:

- number = number **-** 1;
- number **-=** 1;
- number**--**;

To clear a list box:

```
listboxName.Items.Clear();
```

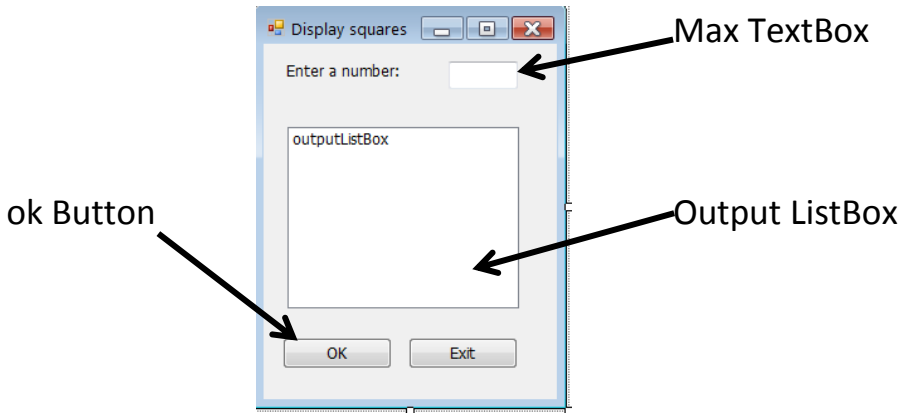
Repetition – the for loop

for loop	while loop

int count;
 	
for (count = 1; count < 5; count++)
{
statement
statement
}
	int count = 1;
	
	while (count < 5)
	{
	statement
	statement
	count = count +1 // *or count++*
	}

This project will get a number from the user and then display the numbers and their squares from 1 to the requested number (**DisplaySquares_for_loop**)

For the display, you will use a **list box** and the **Items.Add** method.



Add code to the application for the following:

1. Declare variables (maxValue, count, square)
2. Get user input for maximum number (use int.TryParse to handle exceptions)

if the value entered is **an integer**, the value will be stored in **maxValue**

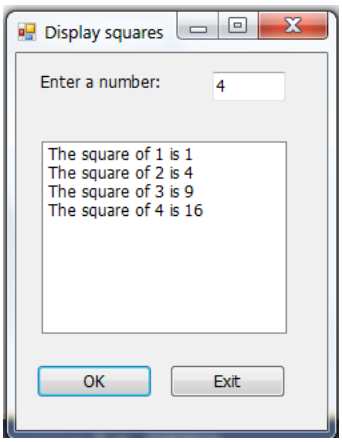
true:
set up for loop to display the number and its square

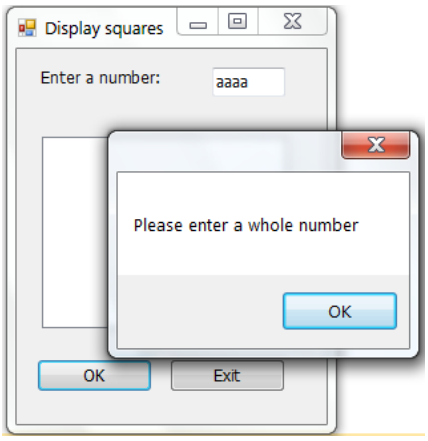
```
for (count = 1; count <=maxValue; count++)
```

calculate the square of the count (count * count)

display item in outputListBox "The square of __ is __"

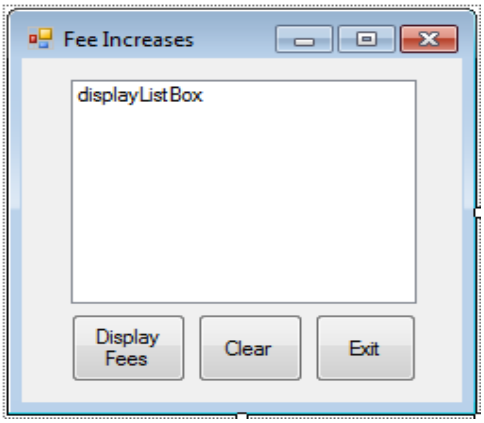
false:
show error message

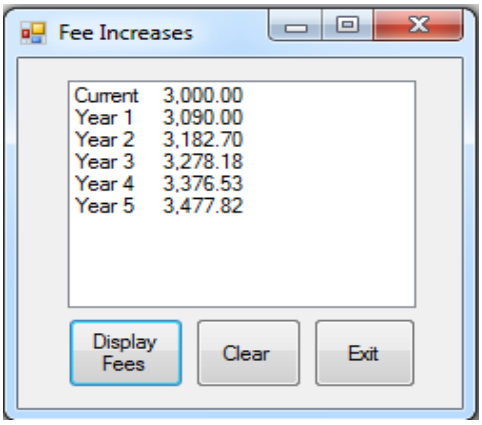




Practice

A private club charges a membership fee of AED 3000 per year. It is planning to increase its fees by 3% each year for the next 5 years. Create an application that will use a `for` loop to calculate and display (in a list box) the projected membership fees for the next 5 years. (**FeeIncrease_for_loop**)





Add code to the application for the following:

1. Declare variable for the counter (year)
2. Declare variables. Initialize those with *known values* (*fees*, *percentIncrease*, amountIncrease)
3. Display current fees. Use `\t` to align the second column

```
displayListBox.Items.Add("Current "  + "\t" + fees.ToString("n2"));
```

4. Set up a loop to calculate and display results

```
for (year = 1; year <= 5; year++)
```

Calculate the amount of increase for the year (fees * percentIncrease)

```
amountIncrease = fees * percentIncrease;
```

Calculate the new value for fees (fees + amountIncrease)

```
fees = fees + amountIncrease;
```

Display the values for the year

```
displayListBox.Items.Add("Year " + year.ToString() + "\t" +
        fees.ToString("n2"));
```