

**Engr 123**  
**Spring 2018 - Exam 3 Review Sheet**

Exam 3 will be on Wednesday, March 28, 2018. The exam is open book and open notes.

The exam will consist of questions on the material in Chapter 10, 14, 15, and 16. The format of the exam will be similar to that of other exams. That is, you will be asked to write implementations and designs for programs and functions to solve particular problems, and you will be asked to read and write C# code examples.

The following is a list of topics that will be emphasized.

1. GUI concepts
2. Strings and string operators.

When you are asked to write code, you will not need to write comments, using directives, or output formatting beyond producing new lines in appropriate places.

1. The following 4 lines define the variables a, b, c, and n. Fill in the blank with the value asked for in each question below.

```
string a = "My dog's name is Sophie.";
string b = "She chases squirrels.";
string c = "\n";
int n;
```

- A) `n = a.Length;`                      `n = _____`
- B) `n = a.CompareTo(b);`                `n = _____`
- C) `c = a + b;`                            `C = _____`
- D) `c = a.substr(1, 5);`                `C = _____`

2. Write a function to accept a single sentence as an argument. Your function should print the sentence with every other character replaced by a blank. For example, if the sentence is: Hello Mom, I like jello.  
your program should print:

```
H l o M m        i e j l o
```

Note that in some cases a blank is replaced with a blank. Your function will not return a value.

3. Write a C# program that will print the number of occurrences of the letter 'e' in a sentence input by the user.

4. Create a GUI interface that consists of a text box, a list box, and a submit button. The user will enter data into the text box and push submit. Each time the user pushes submit the data in the text box should be entered as the next item in the list box and the text box should be cleared.

5. Write a program that counts the number of four letter words in a given sentence. Take the sentence "I would much rather have in inch of dog than a mile of pedigree." as a sample input sentence.

6. Assume that you have a string defined by:  
`string a = "No amount of education will cure stupidity.";`

This string has 7 words. Write a program to prompt the user for input of an integer from 1 to 7. Print the word corresponding the integer entered.

Your program must be general and not tailored to this particular string or this particular string length. You may assume that all strings will have only one space between words.

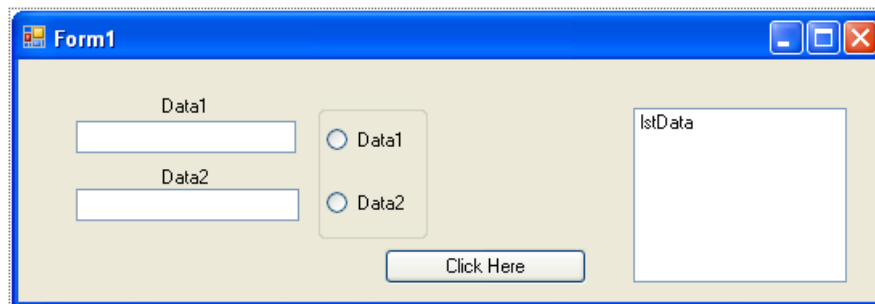
7. A windows GUI application has been created which has the elements shown in the figure below. There are two text boxes on the left, a group box containing two radio buttons, and a list box on the right. The elements have the following names:

Top left text box	txtData1
Bottom left text box	txtData2
Data1 radio button	rdoData1
Data2 radio button	rdoData2
list box on the right	lstData
Click Here button	btnClickHere

Write the program code for the button click event which will do the following:

If the Data1 radio button is checked, load the data from the Data1 text box into the list box.

If the Data2 radio button is checked, load the data from the Data2 text box into the list box.



```
private void btnClickHere_Click(object sender, EventArgs e)
{
```

8. Write a program to print the ASCII codes for the following punctuation symbols:  
**Period, comma, single quote, double quote, colon, and semicolon.**

9. Write a method called `CountLeadingBlanks` which is started below. Your method should return the number of leading blanks in its string parameter `s`. Leading blanks are blanks at the front of a string. The following table illustrates the results of calling `CountLeadingBlanks(s)`. Leading blanks are shown with the character `b`.

s	CountLeadingBlanks(s)
bbbThis is a test	3
bHello Mom	1
No blanks here	0

Complete the function `CountLeadingBlanks`.

```
public static int CountLeadingBlanks(string s)
{
```

10. Show what will be printed by each of the following sequence:

<pre>string s1 = "There is no free lunch."; string s2 = "I'm not hungry anyway."; Console.WriteLine(s1.Length); Console.WriteLine(s1.Substring(1, 4)); Console.WriteLine(s1.Substring(0, 12) +     s2.Substring(15, 7)); Console.WriteLine(s2.ToUpper()); Console.WriteLine(s2.Replace(" anyway",     "")); Console.WriteLine(s1.IndexOf("free", 0));</pre>	<p>Printed Results</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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