

There are eight problems in this assignment. If you are seriously interested in mastering the course materials, you will do every homework problem, even though not every problem of this homework will be graded. You will submit your solution electronically.

1. Briefly explain the functions below with an example for each. You must provide your own examples and exclude the ones presented in the lecture/textbook.

`.length()`, `.size()`, `.find()`, `.substr()`, `.erase()`, `.replace()`

2. Write a function ( `mirror()` ) that takes in a string parameter of any length and returns its mirror reverse.

Example:

input: ABCDEFGH  
return: HGFEDCBA

3. Write function ( `truncate()` ) which shortens a string to `n` characters. If the string is already shorter than `n`, the function should not change the string.

```
void truncate(string MyStr, int n)
{
    }
}
```

4. Explain concisely what the following program does:

```
#include <iostream>
#include <string>
using namespace std;
int main ()
{
    string MyStr = " The future depends on what you do today. – Mahatma Gandhi";
    cout << "MyStr is: " << MyStr << endl;

    int i = MyStr.find("depends");

    string str = MyStr.substr(i);
    cout << "str is: " << str << endl;

    str = MyStr.substr(i,24);
    cout << "str is: " << str << endl;

    return 0;
}
```

5. Write function (count) which takes in two parameters (a string and a single character). Your function should count the occurrences of the single character in the string.

Prototype:      `int count(string MyStr, char c);`

Example: `count("Supercalifragilisticexpialidocious", 'i');`

would return 7

6. Complete the following code in order to print out the sample given output:

**OUTPUT:**

```
ssssssssss
ssssssss
ssssss
ssss
sss
s
```

```
#include <iostream>
#include <string>
using namespace std;

int main ()
{
    string MyStr = "ssssssssss";

    cout << endl;
    return 0;
}
```

Important note that you are not allowed to use character 's' or any string containing 's' such as "sss" other than MyStr. You are supposed to use string library functions and process MyStr to print out the intended content. Note that hard-coding the exact output will result losing the entire credit for this question.

7. Please explain in “one” sentence what does the following program do:

```
#include <iostream>
using namespace std;

int main()
{
    bool found = false;
    string str = "A day without sunshine is like, you know, night.";

    for(int i=0; i != str.size() ; i++)
    {
        if( str[i] == 'i' )
            found = true;
    }

    if(found)
        cout << "I found an i!?!?" << endl;
}
```

8. Complete the following code using only `.find()` and `.replace()` functions, in order to replace:
- a. 'pizza' with 'pasta'
  - b. 'Dad' with 'I'
  - c. 'made' with 'helped to make'

Note that hard-coding the replacements instead of using the string library functions will result losing the entire credit for this question.

```
#include <iostream>
#include <string>
using namespace std;

int main ()
{
    string MyStr = "Dad made pizza last night!";
    string str1 = "helped to make";
    string str2 = "pasta";
    string str3 = "I";

    cout << "MyStr is: " << MyStr << endl;

    return 0;
}
```