

Programming Challenges to Review (Lecture/Lab – week#4)

Practice Lab 1: Write a program that prints the number 1349.9431 with three decimal places, with two decimal places, and with one decimal place.

Practice Lab 2: Write a program that prints each of the following values in two columns:

1234, 45, 7, 87, 99999. The first column should be left-justified and the second column should be right-justified.

Practice Lab 3: This exercise uses program CharRead to read character variables.

// Program CharRead prompts for and reads four characters from the keyboard and then prints them.

```
#include <iostream>
using namespace std;
int main ()
{
    char char1;
    char char2;
    char char3;
    char char4;
    cout << "Input four characters. Press return." << endl;
    cin >> char1 >> char2 >> char3 >> char4;
    cout << char1 << char2 << char3 << char4;
    return 0;
}
```

Compile and run this program four times using the four sets of data values listed below. Key these values exactly as shown, including blanks.

<u>Input Data</u>	<u>What Is Printed</u>
abcd	
a b c d	
1b2c	
31 45	

Examine the results carefully. Do any of the results surprise you? (Remember that the extraction operator skips whitespace.)

Practice Lab 4: This exercise uses program CharRead2 to read character variables.// Program CharRead2 prompts for and reads four characters from the keyboard and then prints them.

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

int main ()
{
    char char1;
    char char2;
    char char3;
    char char4;
    cout << "Input four characters. Press return." << endl;
    cin.get (char1);
    cin.get (char2);
    cin.get (char3);
    cin.get (char4);
    cout << char1 << char2 << char3 << char4;
    return 0;
}
```

Compile and run this program four times using the four sets of data values listed below. Key these values exactly as shown, including blanks.

Input Data	What Is Printed
abcd	
a b c d	
1b2c	
31 45	

Examine the results carefully. Do any of the results surprise you? (Remember that the function `get` does not skip whitespace.)

```
// Program StrRead reads and writes strings.
#include <iostream>
#include <fstream>
#include <string>

#include <cstdlib>
using namespace std;

int main ()
{
    ifstream inFile;
    ofstream outFile;
    string inString1;
    string inString2;

    inFile.open ("strData.in");
    outFile.open ("outData");

    /* TO BE FILLED IN. */

    outFile << inString1 << endl;
    outFile << inString2 << endl;
    system("PAUSE");
    return 0;
}
```

strData.in contains the following information:

Object-Oriented languages include C++ and Java.
List processing languages include Lisp and Scheme.

Practice Lab 3: Fill in the missing code in program `StrRead` so that `inString1` contains the characters "Object-Oriented" and `inString2` contain the characters "languages". Compile and run your program.

Practice Lab 4: Fill in the missing code in program `StrRead` so that `inString1` contains the entire first line of data and `inString2` contains the entire second line of data. Compile and run your program.