

Compiler Design Lab-1

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Question-1:

FOR READING:

Code:

```
#include <bits/stdc++.h>
using namespace std;

int main()
{
    // Open a file in read mode
    ifstream file("test_file_for_lab.txt");
    string s;

    // Read string from the file
    file >> s;

    getline(file,s);
    cout << "Read String: " << s;

    return 0;
}
```

Output:

```
PS D:\Compiler_bas> cd "d:\Compiler_bas\" ; if ($?) { g++ Compiler_Design_lab-1_task1.cpp -o Compiler_Design_lab-1_task1 } ; if ($?) { ./Compiler_Design_lab-1_task1 }
Read String: is a text file made by mohit kumar of 23IT3028 for doing task of compiler design lab-1
PS D:\Compiler_bas>
```

Part-2:

Writing in the file

Code:

```
#include <bits/stdc++.h>
using namespace std;

int main()
{

    // Open a file in read mode
    ifstream file("test_file_for_lab.txt");
    string s;

    // Read string from the file
    file >> s;

    getline(file,s);
    cout << "Read String: " << s;

    cout<<endl;
    cout<<endl;
```

```

ofstream outputFile("test_file_for_lab");

outputFile << "Writing to file with ofstream! in my test file for part
2 of task-1" << endl;

outputFile << "This is a second line added straight from VS Code
" << endl;

cout << "This is the new test after giving input:";

cout << "Read String: " << s;

return 0;
}

```

Output:

The screenshot shows the Visual Studio Code interface. The code editor on the left contains the C++ code provided above. The terminal on the right shows the command-line output of the program's execution.

```

PS D:\Compiler_bas> cd "d:\Compiler_bas\" ; if ($?) { g++ Compiler_design_lab-1_task1.cpp -o Compiler_design_lab-1_task1 } ; if ($?) { ./Compiler_design_lab-1_task1 }
Read String:  is a text file made by mohit kumar of 23IT3028 for doing task of Compiler design lab-1

This is the new test after giving input:Read String:  is a text file made by mohit
kumar of 23IT3028 for doing task of Compiler design lab-1

```

Question-2: Code for counting:

```
#include<bits/stdc++.h>
using namespace std;

int main() {

    string filename = "test_file_for_lab.txt";

    ofstream outFile("out_put_for_question_2");
    if (outFile.is_open()) {
        outFile << "This is line one.\n";
        outFile << "This is line two, with a few more words.\n";
        outFile << "Line three is here.";
        outFile.close();
    }

    ifstream inFile(filename);

    if (!inFile.is_open()) {
        cerr << "Error opening file: " << filename << endl;
        return 1;
    }

    char chars;
    int char_count = 0;
    int wordCount = 0;
    int line = 0;
    bool inWord = false;
    char previous_character = '\0';

    while (inFile.get(chars)) {
        char_count++;

        if (chars == '\n') {
            line++;
        }

        // Check for words (simple space, tab, or newline delimited)
        if (chars == ' ' || chars == '\t' || chars == '\n') {
```

```

        if (inWord) {
            wordCount++;
            inWord = false;
        }
    } else {
        inWord = true;
    }

    previous_chracter = chars;
}

if (inWord) {
    wordCount++;
}

if (char_count > 0 && previous_chracter != '\n') {
    line++;
}

inFile.close();

cout << "\nFile analysis for '" << filename << ":" << endl;
cout << "charss: "<< char_count << endl;
cout << "Words:"<< wordCount << endl;
cout << "Lines:"<< line << endl;

return 0;
}

```

Output:

The screenshot shows a C++ development environment with multiple tabs open. The main code editor tab contains the following C++ code:

```
#include <iostream>
#include <bits/stdc++.h>
using namespace std;

int main() {
    // Specify the input filename
    string filename = "test_file_for_lab.txt";
    // Create an output file for demonstration purposes.
    // If input.txt doesn't exist, this will create it with some sample data.
    ofstream outfile("out_put_for_question_2");
    if (outfile.is_open()) {
        outfile << "This is line one.\n";
        outfile << "This is line two, with a few more words.\n";
        outfile << "Line three is here.";
        outfile.close();
        std::cout << "Created 'input.txt' with sample data.\n";
    }

    // Open the file for reading
    ifstream infile(filename);

    if (!infile.is_open()) {
        std::cerr << "Error opening file: " << filename << endl;
        return 1;
    }

    char character;
    int charCount = 0;
    int wordCount = 0;
    int lineCount = 0;
    bool inWord = false;
    char prevchar = '\0';

    // Read the file character by character
    while (infile.get(character)) {
        charCount++;

```

The terminal window at the bottom right shows the following output:

```
PS D:\Compiler_Bas> cd "d:\compiler_bas" ; if ($?) { g++ Compiler_Design_lab-1_task2.cpp -o Compiler_Design_lab-1_task2 } ; if ($?) { ./Compiler_Design_lab-1_task2 }
Created 'input.txt' with sample data.

File analysis for 'test_file_for_lab.txt':
Characters: 92
Words: 18
Lines: 1
PS D:\Compiler_Bas>
```