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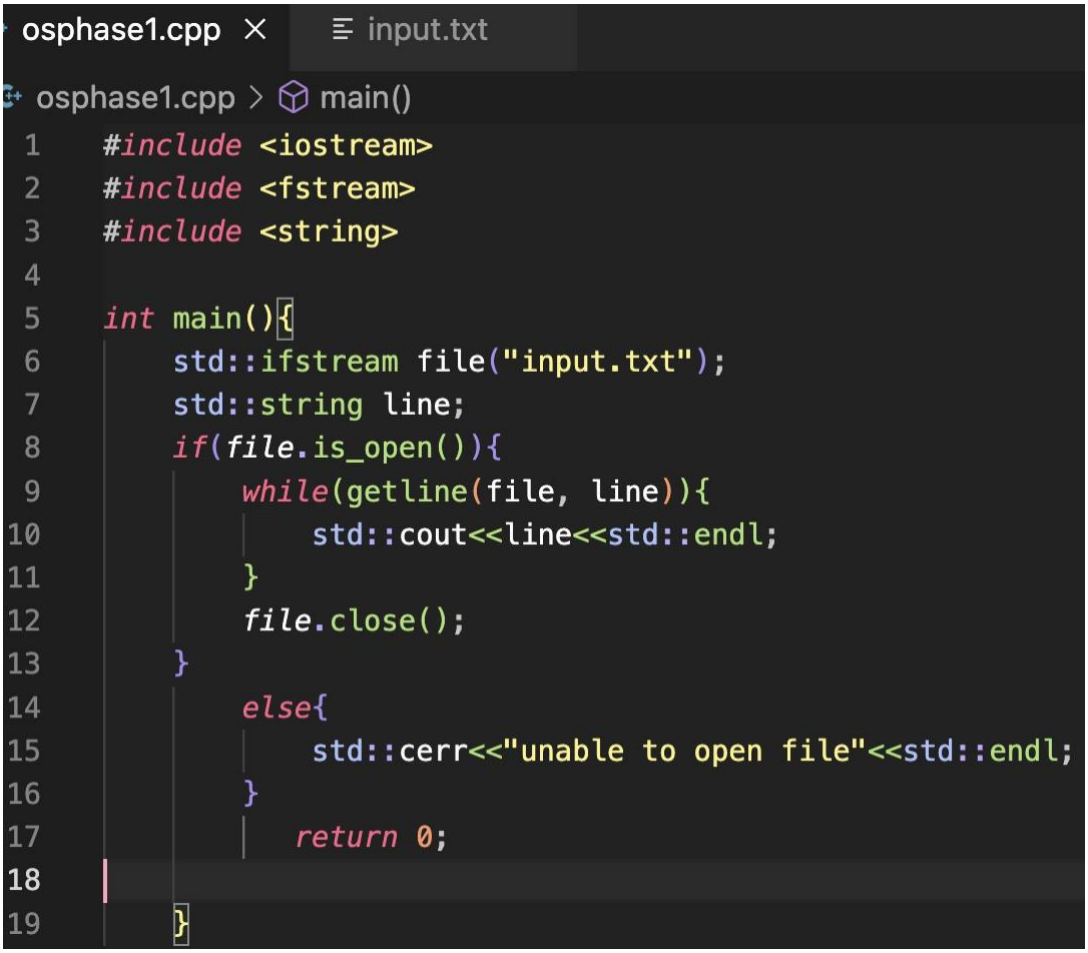
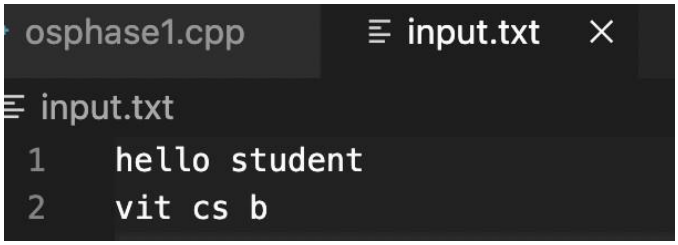
CS B

71

LAB 6

1. Assume Hello Students SY B Div placed in input.txt file. Write a C++ program to read the file line by line and display output on screen.





```
cd "/Users/student/Documents/csb 68/" && g++ osphase1.cpp -o osphase1 && "/Users/student/Documents/csb 68/"osphase1
student@admins-iMac-4 csb 68 % cd "/Users/student/Documents/csb 68/" && g++ osphase1.cpp -o osphase1 && "/Users/student/Documents/csb 68/"osphase1
hello student
vit cs b
```

2. Assume buffer is holding temporary data. Write a C++ program to store line from input.txt file into buffer. Also display buffer output on screen.

```cpp
#include <iostream>
#include <fstream>

int main() {
    std::ifstream file("input.txt");
    char buffer[40];

    if (file.is_open()) {
        while (file.getline(buffer, 40)) {
            std::cout << "Buffer content is: " ;
            std::cout << buffer << std::endl;
        }
        file.close();
    } else {
        std::cerr << "Unable to open file" << std::endl;
    }
    return 0;
}
```

```
student@admins-iMac-4 csb 68 % cd "/Users/student/Documents/csb 68/" && g++ osphase1.cpp -o osphase1 && "/Users/student/Documents/csb 68/"osphase1
Buffer content is: hello student
Buffer content is: vit cs b
```

3. Assume external memory is 100 by 4. Write a C++ Program to store buffer content into external memory location 00

```cpp
#include <iostream>
#include <fstream>
#include <cstring>

int main() {
    std::ifstream file("input.txt");
    char buffer[40];
    char externalMemory[100][4] = {};

    if (file.is_open()) {
        int row = 0, col = 0;

        while (file.getline(buffer, 40)) {
            int length = std::strlen(buffer);
            for (int i = 0; i < length; ++i) {
                externalMemory[row][col] = buffer[i];
                col++;

                if (col == 4) {
                    col = 0;
                    row++;
                    if (row == 100) {
                        std::cout << "External memory full!" << std::endl;
                        break;
                    }
                }
            }
        }
        file.close();

        std::cout << "External Memory Content:\n";
        for (int i = 0; i <= row; ++i) {

            if (i < 10) {
                std::cout << "0" << i << " ";
            } else {
                std::cout << i << " ";
            }

            for (int j = 0; j < 4; ++j) {
                if (externalMemory[i][j] != '\0')
                    std::cout << externalMemory[i][j];
                else
                    std::cout << ' ';
            }
            std::cout << std::endl;
        }
    } else {
        std::cerr << "Unable to open file" << std::endl;
    }
    return 0;
}
```

```
student@admins-iMac-4 csb 68 % cd "/Users/student/Documents/csb 68/" && g++ osphase1.cpp -o osphase1 && "/Users/student/Documents/csb 68/"osphase1
External Memory Content:
00 hell
01 o st
02 uden
03 t vi
04 t cs
05  b
```

4. Write C++ Program to write content into output.txt file from external memory. Memory block 0 consist Hello Students SY B Div data.

```cpp
#include <iostream>
#include <fstream>
#include <cstring>
using namespace std;
int main() {
    ifstream file("input.txt");
    ofstream outFile("output.txt");
    char buffer[40];
    char externalMemory[100][4] = {};

    if (file.is_open() && outFile.is_open()) {
        int row = 0, col = 0;

        while (file.getline(buffer, 40)) {
            int length = strlen(buffer);
            for (int i = 0; i < length; ++i) {
                externalMemory[row][col] = buffer[i];
                col++;

                if (col == 4) {
                    col = 0;
                    row++;
                    if (row == 100) {
                        cout << "External memory full!" << endl;
                        break;
                    }
                }
            }
```

```
    }
    file.close();
    cout << "External Memory Content:\n";
            for (int i = 0; i <= row; ++i) {
                if (i < 10) {
                    cout << "0" << i << " ";
                    outFile << "0" << i << " ";
                } else {
                    cout << i << " ";
                    outFile << i << " ";
                }
                for (int j = 0; j < 4; ++j) {
                    if (externalMemory[i][j] != '\0') {
                        cout << externalMemory[i][j];
                        outFile << externalMemory[i][j];
                    } else {
                        cout << ' ';
                        outFile << ' ';
                    }
                }
                cout << endl;
                outFile << endl;
            }
            outFile.close();
            cout << "Content written to output.txt successfully.\n";
        } else {
            cerr << "Unable to open input or output file" << endl;
        }
        return 0;
    }
```

```
External Memory Content:
00 hell
01 o st
02 uden
03 tvit
04  cs
05 b
Content written to output.txt successfully.
```

main.cpp | input.txt | output.txt

output.txt

```
1  00 hell
2  01 o st
3  02 uden
4  03 tvit
5  04  cs
6  05 b
7
```