

## Experiment - 11

### Code :-

```
#include <iostream>
#include <stdexcept>
using namespace std;
int main() {
    double numerator, denominator, arr[5] = {1,22,333,221,59};
    int index;
    cout << "Enter array index: ";
    cin >> index;
    try {
        if (index < 0) {
            throw std::invalid_argument("Array index cannot be negative.");
        }
        if (index >= 5) {
            throw 'e';
        }
        cout << "Value at index " << index << ": " << arr[index] << endl;
        cout << "Enter numerator: ";
        cin >> numerator;
        if (numerator < 0) {
            throw std::invalid_argument("Numerator cannot be negative.");
        }
        cout << "Enter denominator: ";
        cin >> denominator;
        if (denominator == 0) {
            throw 0;
        }
        arr[index] = numerator / denominator;
        cout << "Result stored at index " << index << ": " << arr[index] << endl;
```

```

}
catch (char e) {
    cout << "Error: Array out of bounds!" << endl;
}
catch (int num) {
    cout << "Error: Cannot divide by " << num << endl;
}
catch (const std::invalid_argument& e) {
    cout << "Error: " << e.what() << endl;
}
catch (...) {
    cout << "Unexpected exception!" << endl;
}
return 0;
}

```

### Output:-

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> cd "c:\Users\LAXMI\Desktop\sem 5\cpp\code\" ; if
Enter array index: 8
Error: Array out of bounds!
PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> cd "c:\Users\LAXMI\Desktop\sem 5\cpp\code\" ; if
Enter array index: -3
Error: Array index cannot be negative.
PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> █

```

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> cd "c:\Users\LAXMI\Desktop\sem 5\cpp\code\" ; if ($?)
Enter array index: 4
Value at index 4: 59
Enter numerator: 6
Enter denominator: 0
Error: Cannot divide by 0
PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> cd "c:\Users\LAXMI\Desktop\sem 5\cpp\code\" ; if ($?)
Enter array index: 3
Value at index 3: 221
Enter numerator: 66
Enter denominator: 32
Result stored at index 3: 2.0625
PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> █

```

## Experiment - 12

**Code : -**

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

using namespace std;

int main() {
    ofstream MyFile("filename.txt");

    MyFile << "This is a sample text file." << endl;
    MyFile << "You can modify this text." << endl;

    MyFile.close();
    cout << "File created and data written successfully." << endl;

    ofstream modifyFile;
    modifyFile.open("filename.txt", ios::app);

    modifyFile << "This line has been added to modify the file." << endl;

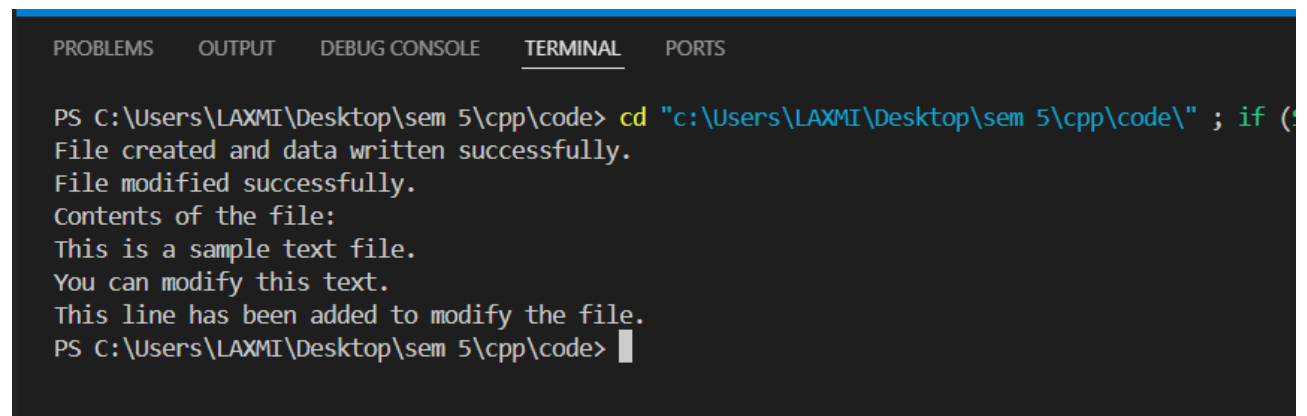
    modifyFile.close();
    cout << "File modified successfully." << endl;

    ifstream inputFile;
    inputFile.open("filename.txt");

    string line;
    cout << "Contents of the file:" << endl;
    while (getline(inputFile, line)) {
```

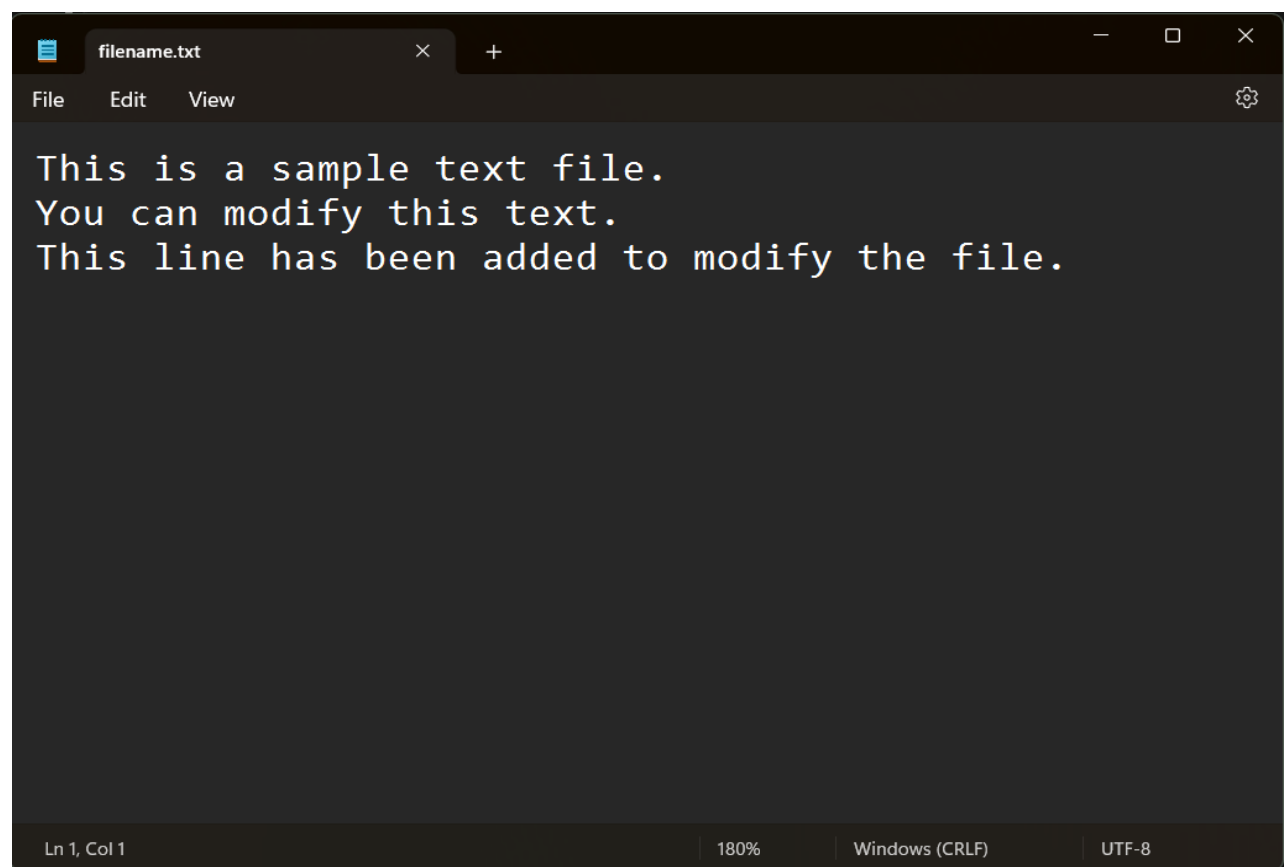
```
        cout << line << endl;
    }
    inputFile.close();
    return 0;
}
```

## Output:



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> cd "c:\Users\LAXMI\Desktop\sem 5\cpp\code\" ; if ($?) {
File created and data written successfully.
File modified successfully.
Contents of the file:
This is a sample text file.
You can modify this text.
This line has been added to modify the file.
PS C:\Users\LAXMI\Desktop\sem 5\cpp\code>
```



```
filename.txt
File Edit View

This is a sample text file.
You can modify this text.
This line has been added to modify the file.

Ln 1, Col 1 | 180% | Windows (CRLF) | UTF-8
```

## Experiment- 13

**Code : -**

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

ostream& customManipulator(ostream& os) {
    os << fixed << setprecision(2);
    return os;
}

int main() {
    cout << "Using ios member functions:\n";

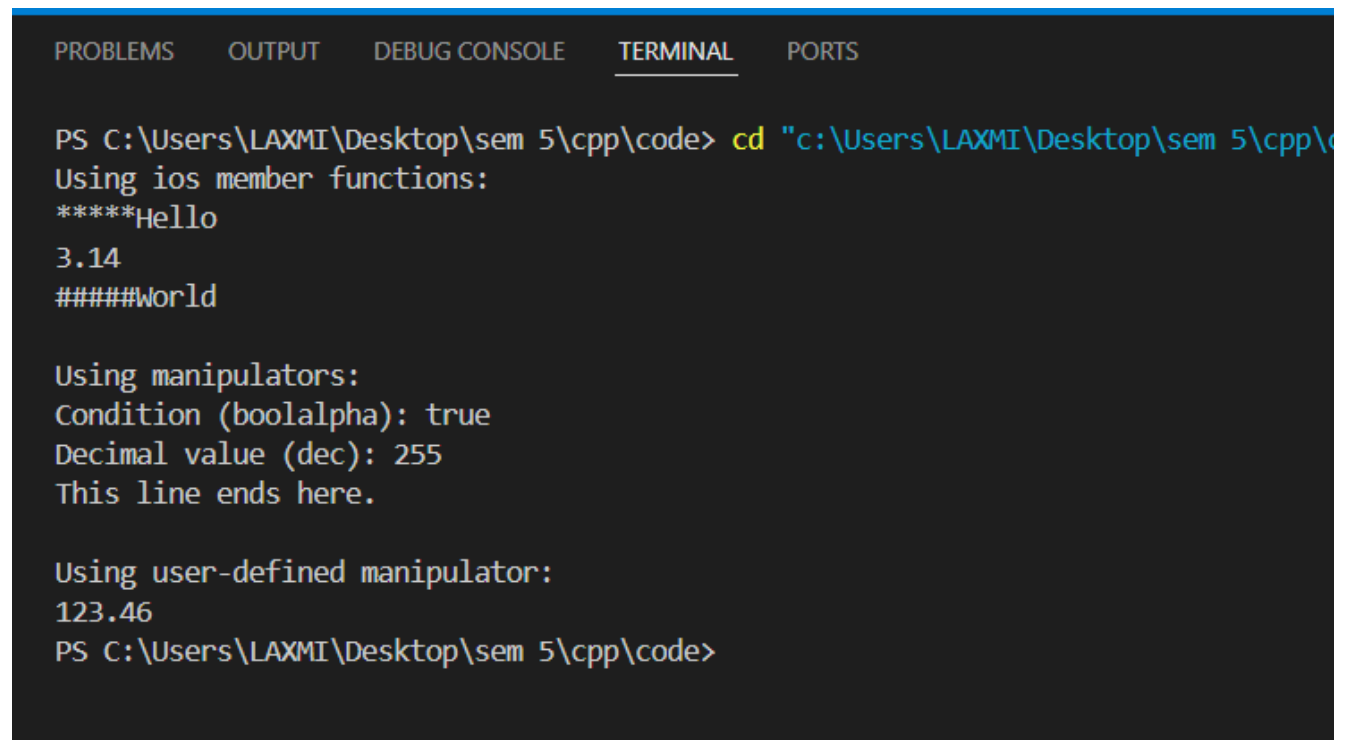
    cout << setfill('*') << setw(10) << "Hello" << endl;
    cout << setprecision(3) << 3.14159 << endl;
    cout << setfill('#') << setw(10) << "World" << endl;

    cout << "\nUsing manipulators:\n";
    bool condition = true;
    cout << "Condition (boolalpha): " << boolalpha << condition << endl;
    cout << "Decimal value (dec): " << dec << 255 << endl;
    cout << "This line ends here." << endl;

    cout << "\nUsing user-defined manipulator:\n";
    cout << customManipulator << 123.456789 << endl;

    return 0;
}
```

## Output : -



The screenshot shows a terminal window with a dark background and a blue header bar. The header bar contains five tabs: 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is selected and underlined), and 'PORTS'. The terminal displays the following text:

```
PS C:\Users\LAXMI\Desktop\sem 5\cpp\code> cd "c:\Users\LAXMI\Desktop\sem 5\cpp\code"
Using ios member functions:
*****Hello
3.14
#####World

Using manipulators:
Condition (boolalpha): true
Decimal value (dec): 255
This line ends here.

Using user-defined manipulator:
123.46
PS C:\Users\LAXMI\Desktop\sem 5\cpp\code>
```