

CV

Programming Language: CPP

Mock Final 1

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Andres Quintero

**Source Code:**

```
#include <iostream>
```

```
#include <string>
```

```
#include <fstream>
```

```
using namespace std;
```

```
class Image{
```

```
    public:
```

```
    int numRows;
```

```
    int numCols;
```

```
    int minVal;
```

```
    int maxVal;
```

```
    int** imageAry;
```

```
    void loadImageAry(ifstream& inFile){
```

```
        imageAry = new int*[numRows];
```

```
        for(int i = 0; i < numRows; i++){
```

```
            imageAry[i] = new int[numCols];
```

```
        }
```

```
        int input;
```

```
        for(int i = 0; i < numRows; i++){
```

```

        for(int j= 0; j < numCols; j++){

            inFile >> input;

            imageAry[i][j] = input;

        }

    }

}

```

```

void sumRows(ofstream& outFile1){

    int sum = 0;

    for(int row = 0; row < numRows; row++){

        outFile1 << row << ": ";

        for(int col = 0; col < numCols; col++){

            sum += imageAry[row][col];

        }

        outFile1 << sum << endl;

        sum = 0;

    }

}

```

```

void sumCols(ofstream& outFile2){

    int sum = 0;

    for(int col = 0; col < numCols; col++){

        outFile2 << col << ": ";

        for(int row = 0; row < numRows; row++){

            sum += imageAry[row][col];

        }

    }

}

```

```
        outFile2 << sum << endl;

        sum = 0;
    }
}
```

```
};
```

```
int main(int argc, char* argv[]){
```

```
    ifstream inFile(argv[1]);
    ofstream outFile1(argv[2]);
    ofstream outFile2(argv[3]);
```

```
    Image image;
    inFile >> image.numRows;
    inFile >> image.numCols;
    inFile >> image.minVal;
    inFile >> image.maxVal;
```

```
    image.loadImageAry(inFile);
```

```
    // Header output
```

```
    outFile1 << image.numRows << " " << image.numRows << " " << image.minVal << " " << image.maxVal <<
endl;
```

```
    outFile2 << image.numRows << " " << image.numRows << " " << image.minVal << " " << image.maxVal <<
endl;
```

```
image.sumRows(outFile1);
```

```
image.sumCols(outFile2);
```

```
inFile.close();
```

```
outFile1.close();
```

```
outFile2.close();
```

```
}
```

## OUTPUTS

outFile2.txt

```
45 45 0 1
0: 0
1: 7
2: 14
3: 11
4: 25
5: 10
6: 7
7: 3
8: 9
9: 10
10: 10
11: 13
12: 14
13: 8
14: 10
15: 11
16: 6
17: 9
18: 15
19: 16
20: 14
21: 9
22: 6
23: 5
24: 6
25: 9
26: 11
27: 16
28: 18
29: 20
30: 14
31: 8
32: 13
33: 8
34: 12
35: 10
36: 13
37: 16
38: 16
39: 10
40: 10
41: 4
42: 4
43: 8
44: 18
45: 18
46: 12
47: 3
48: 0
49: 0
```

outFile1.txt

```
45 45 0 1
0: 0
1: 1
2: 1
3: 19
4: 24
5: 25
6: 1
7: 1
8: 1
9: 24
10: 27
11: 26
12: 4
13: 2
14: 2
15: 1
16: 1
17: 8
18: 23
19: 24
20: 27
21: 1
22: 1
23: 2
24: 24
25: 27
26: 26
27: 8
28: 2
29: 1
30: 2
31: 1
32: 10
33: 22
34: 26
35: 26
36: 0
37: 1
38: 0
39: 25
40: 27
41: 26
42: 18
43: 1
44: 0
```