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A23, CSSE

Question 1

Two files named ‘Source1’ and ‘Source2’ contains sorted list of integers . Write a program that reads the contents of both the files and stores the merged list in sorted form in a new file named ‘Target’

```
#include <iostream>
#include <fstream>
using namespace std;
int main()
{
    const int size = 80;
    char line[size];
    ifstream fin1, fin2;
    fin1.open("Source1.txt");
    fin2.open("Source2.txt");
    for (int i = 1; i <= 10; i++)
    {
        if (fin1.eof() != 0)
        {
            cout << "End of files." << endl;
            exit(1);
        }
        fin1.getline(line, size);
        cout << line << "\n";
        if (fin2.eof() != 0)
        {
            cout << "Exit from the Capital.";
            exit(1);
        }

        fin2.getline(line, size);
        cout << line << "\n";
    }
    return 0;
}
```

Output

```
PS C:\Users\KIIT\Documents\coding> cd "c:\Us
ers\KIIT\Documents\coding\3rd semister\OOP l
ab\class 13\" ; if ($?) { g++ class13_q2.cpp
 -o class13_q2 } ; if ($?) { .\class13_q2 }
1 2 3 4 5
6 7 8 9 10
End of files.
```

Question 2

```
#include <iostream>
#include <iomanip>
#include <fstream>
using namespace std;
void mergeFiles( ifstream& fin1, ifstream& fin2, ofstream& fout );
void showFile( const char* fname );

int main()
{
    ifstream fin1( "Source1.txt" );
    ifstream fin2( "Source2.txt" );
    ofstream fout( "Target.txt" );
    mergeFiles( fin1, fin2, fout );
    fout.close();
    showFile( "Source1.txt" );
    showFile( "Source2.txt" );
    showFile( "Target.txt" );
    return 0;
}

void mergeFiles( ifstream& fin1, ifstream& fin2, ofstream& fout )
{
    int i1, i2, countIn = 0, countOut = 0;
    if( fin1 >> i1 ) ++ countIn;
    if( fin1 )
    {
        if( fin2 >> i2 )
        {
            ++ countIn;
            while( fin1 && fin2 )
            {
                if( i1 <= i2 )
                {
```

```
                    fout << i1 << ' ';
                    ++countOut;
                    if( !(fin1 >> i1) )
                    {
                        fout << i2 << ' ';
                        ++countOut;
                    }
                    else ++countIn;
                }
                else
                {
                    fout << i2 << ' ';
                    ++countOut;
                    if( !(fin2 >> i2) )
                    {
                        fout << i1 << ' ';
                        ++countOut;
                    }
                    else ++countIn;
                }
            }
        }
        else
        {
            fout << i1 << ' ';
            ++countOut;
        }
    }
    while( fin1 >> i1 ) { fout << i1 << ' '; ++countIn; ++countOut; }
    while( fin2 >> i2 ) { fout << i2 << ' '; ++countIn; ++countOut; }
}

void showFile( const char* fname )
{
    ifstream fin( fname );
    if( fin )
    {
        cout << "\nShowing numbers in file " << fname << " : ";
        int tmp;
        while( fin >> tmp ) cout << setw( 1 )<< tmp << ' ';
        fin.close();
        cout << endl;
    }
    else cout << "\nThere was a problem opening file " << fname << endl;
}
```

Output

```
PS C:\Users\KIIT\Documents\coding\3rd semist
er\OOP lab\class 13> cd "c:\Users\KIIT\Docum
ents\coding\3rd semister\OOP lab\class 13\"
; if ($?) { g++ class13_q1.cpp -o class13_q1
 } ; if ($?) { .\class13_q1 }

Showing numbers in file Source1.txt : 1 2 3
4 5

Showing numbers in file Source2.txt : 6 7 8
9 10

Showing numbers in file Target.txt : 1 2 3 4
 5 6 7 8 9 10
PS C:\Users\KIIT\Documents\coding\3rd semist
er\OOP lab\class 13>
```

Question 3

```cpp
#include <iostream>
#include <fstream>
#include <string>
#include <algorithm>
using namespace std;
class student
{
    public:
    string StudentName;
    int RollNumber;
    string Gender;
    int Weight;
    int Height;
};
bool compare(const student S1, const student S2)
{
    return S1.StudentName < S2.StudentName;
}
int main()
{
    ifstream x
    {
        "record.txt"
```

```
    };
    if (!x)
    {
        cerr << "The File could not be opened due to an error." << endl;
        exit(0);
    }
    student s[3];
    int i = 0;
    while (!x.eof())
    {
        x >> s[i].StudentName;
        x >> s[i].RollNumber;
        x >> s[i].Gender;
        x >> s[i].Height;
        x >> s[i].Weight;
        i++;
    }
    sort(s, s + 3, compare);
    for (int i = 0; i < 3; i++)
    {
        cout << s[i].StudentName << endl;
        cout << s[i].RollNumber << endl;
        cout << s[i].Gender << endl;
        cout << s[i].Height << endl;
        cout << s[i].Weight << endl;
        cout << "\n" << endl;
    }
    return 0;
}
```

Output

```
PS C:\Users\KIIT\Documents\coding\3rd semist
er\OOP lab\class 13> cd "c:\Users\KIIT\Docum
ents\coding\3rd semister\OOP lab\class 13\"
; if ($?) { g++ class13_q3.cpp -o class13_q3
 } ; if ($?) { .\class13_q3 }
agnim
2028083
male
175
80


gupta
202807
female
190
60


priyansh
2028090
male
170
70
```