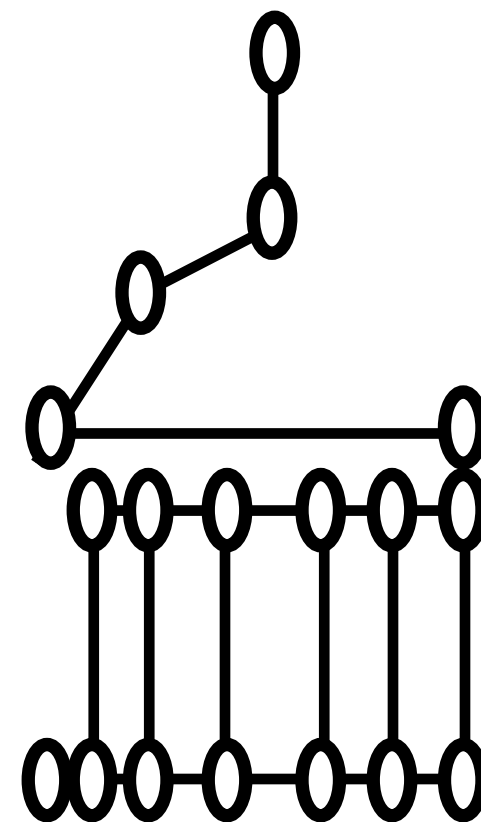


Lecture: File I/O

ENGR 2730: Computers in Engineering





Write a program to compute the average of a list of numbers stored in a file using EOF file format.

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

using namespace std;

int main() {
    ifstream fin("data.txt"); // Attempt to open file

    if (fin.fail()){
        cout << "Error: could not open data.txt.";
        return -1;
    }

    int num, sum=0, count=0;

    while (!fin.eof()){
        fin >> num;
        if(!fin.fail()){
            sum += num;
            count++;
        }
    }

    fin.close();

    cout << "ave = " << static_cast<float>(sum)/count << endl;
    return 0;
}
```

data.txt
1 2 3 4 5 6

Note: test the program with/without the last new line character.

← Note: Use fin.eof() to check for EOF.

← Note: fin.fail() checks the *previous* stream.

← Note: Only when the *last* read-in is ok, then add it to the sum.



Working with Files

- Copy the project called lec04 from the Public directory into your practice directory.
 - Add main.cpp & CMakeLists.txt to subversion.
 - Tell subversion to ignore .idea & cmake-build-debug directories.
 - Load CMakeList.txt.
- Right click on the lec04 folder and select New -> File.
 - Enter the file name data.txt and click OK. Add data.txt to subversion.
 - Double click on data.txt and add the numbers: 1 2 3 4 5 6 followed by enter.
 - Add the line "configure_file(data.txt data.txt COPYONLY)" to CMakeLists.txt.
 - Reload CMakeLists.txt.
- Commit changes to subversion and run program as normal.