

CMPS 150 Workbook: Chapter 12 Section 1

Section 12.1: File I/O

1) What is output to the monitor screen and what is output to the file "example.dat" by the following program?

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

int main()
{
    ofstream outFile;
    outFile.open("example.dat");

    cout << "People are difficult ";
    outFile << "to govern ";
    outFile << "because they have ";
    cout << "too much knowledge.";
    outFile << "Lao-tzu";

    outFile.close();

    return 0;
}
```

2) What is output to the monitor screen and what is output to the file "stuff.txt" by the following program?

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

int main()
{
    ofstream myFile;
    myFile.open("stuff.txt");

    myFile << "I was born not knowing ";
    myFile << "and have had only a little time ";
    cout << "to change that ";
    myFile << "here and there. ";
    cout << "Richard Feynman";

    myFile.close();

    return 0;
}
```

3) Given that the file "packages.dat" has the following values in it,

```
34  54  19  24
16  32  17  13
```

what values are in the variables *height*, *width*, *depth* and *weight* after the following code is executed?

```
int height, width, depth, weight;
ifstream packFile;
packFile.open("packages.dat");
packFile >> weight >> height >> width >> depth;
```

4) Given that the file "grades.dat" has the following values in it,

```
75  85  67  25  13  26  87  99
```

what values are in the variables *exam1*, *exam2* and *exam3* after the following code is executed?

```
int exam1, exam2, exam3;
ifstream gradeFile;
gradeFile.open("grades.dat");
gradeFile >> exam1;
gradeFile >> exam2;
gradeFile >> exam3;
```

5) Given that the file "payroll.txt" has the following values in it,

```
Grubfer Paye
10.8    44.25
Justa Winneer
11.23   37.50
```

what values are in the variables *emp1*, *emp2*, *rate1*, *rate2*, *hours1* and *hours2* when the following code is executed?

```
double rate1, rate2, hours1, hours2;
string emp1, emp2;
ifstream payFile;
payFile.open("payroll.txt");
getline(payFile, emp1);
payFile >> rate1 >> hours1;
getline(payFile, emp2);
getline(payFile, emp2);
payFile >> rate2 >> hours2;
```

6) Given that the file "averages.txt" has the following values in it,

```
1.3
Luzi Student
4.0
Werks Hard
```

what values are in the variables *name1*, *name2*, *avg1* and *avg2* when the following code is executed?

```
string name1, name2;
double avg1, avg2;
ifstream gradesFile;
gradesFile.open("averages.txt");
gradesFile >> name1;
getline(inFile, name1);
getline(inFile, name1);
gradesFile >> name2;
getline(inFile, name2);
getline(inFile, name2);
```

7) Given that the file "temperatures.dat" has the following information,

```
40 30 50 20
```

What does the following code output to the monitor screen?

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

int main()
{
    cout.setf(ios::fixed, ios::floatfield);
    cout.setf(ios::showpoint);

    double temp, sum=0, count=0;
    ifstream inFile;

    inFile.open("temperatures.txt");

    if (!inFile)
    {
        cout << "No File!";
        exit(1);
    }

    inFile >> temp;
    while (inFile)
    {
        sum += temp;
        count++;
        inFile >> temp;
    }

    inFile.close();

    cout << "Average Temperature: " << sum / count << endl;

    return 0;
}
```

8) Given that the file "names" has the following information,

```
Big Guy
Dryves Lika Louri
Lucy Arnez
Justa Husker
Richie Rich
Pickoff Andropoph
Juan Moore Dae
```

What does the following code output to the monitor screen?

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;

int main()
{
    cout.setf(ios::fixed, ios::floatfield);
    cout.setf(ios::showpoint);

    string name;
    ifstream nameFile;

    nameFile.open("names.txt");

    if (!nameFile)
    {
        cout << "No File!";
        exit(1);
    }

    getline(nameFile, name);
    while (nameFile)
    {
        cout << name << endl;
        getline(nameFile, name);
    }

    nameFile.close();

    return 0;
}
```

- 9) Write a program that collects the address and phone number of the user and then stores this information in a file called "address.dat".

- 10) Write a program that collects the users name and then stores this name in a file called "name.dat".

- 11) Write a program that reads the data stored in the file "address.dat" created in #9 and displays this information on the monitor screen.

- 12) Write a program that reads the data stored in the file "name.dat" created in #10 and displays this information on the monitor screen.

- 13) Write a program that collects the height and weight of an unknown number of people and stores this information in a file called "stats.txt". The program should halt when the user enters a height or a weight of 0 or less.

- 14) Write a program that collects the final grades of an unknown number of students and stores this information in a file called "grades.txt". The program should halt when the user enters a grade of less than 0.

- 15) Write a program that reads the data stored in the file "stats.txt" of #13 and outputs the average height and the average weight of the data stored in the file.

- 16) Write a program that read the data stored in the file "grades.txt" of #14 and outputs the average grade.