Activity 6

Comp 11 - Summer Session — Files and Multi-dimensional Arrays

---

With a partner(or two), discuss the following code sample and answer the questions below. The instructor and teaching assistants will let you discuss and then be around to answer questions. [1]

6.1   Description

File I/O (i.e File input and file output) is the ability to read and write to files. C++ provides us with libraries that allow us to read and write from files. What C++ does in this library, is give us different *types*.

In the code below, there are two functions

- createFile - Creates a new file where we can write to

- openFile - Opens a file and prints its contents to the screen.

---

[1]Activities do not need to be returned to instructors, they are for your benefit.

```cpp
#include <iostream>
// Our new file library.
#include <fstream> // ofstream and ifstream are now available

// Desc: Creates a new file with a file name in your current
//     directory
// Input Parameters: A filename
// Output: None (A file is created, but no function return type)
void createFile(std::string fileName){
  // If this file does not exist, then we create it.
  // c_str() is a special member function that converts our string
  // to a different type, known as a const char*. We'll talk more.
  std::ofstream myfile (fileName.c_str());
  // We call a member function to check if the file has been
  // created and is open.
    if (myfile.is_open())
    {
      // We write information to our file.
      // The <<'s point to where we write information, in this case
      // we are writing to the ofstream myfile
      myfile << "Hello\n";
      myfile << "This is a new file on your computer.\n";
      myfile.close();
    }
}

// Desc: Open a file from your current directory
// Input Parameters: A filename
// Output: None (A file is opened and text is output, but no
//     function return type)
void openFile(std::string fileName){
  std::string line;
  std::ifstream myfile (fileName.c_str());
  if (myfile.is_open())
  {
    while ( getline (myfile,line) )
    {
      std::cout << line << '\n';
    }
    myfile.close();
  }  else{
    std::cout << "Unable to open file";
  }

}

int main () {

  std::string ourNewFileName = "activity6.txt";
  createFile(ourNewFileName);
  openFile(ourNewFileName);

  return 0;
}
```

Listing 6.1: Input into a new file and open it

6.2 Questions

1. Read through, and type in the code sample above. Compile, save, and run the program.

2. What is the difference between a relative and an absolute filepath? Why might this be important to keep in mind when loading files?

3. (Review) What command can we type in the terminal to get our current working directory (i.e. filepath).

4. What is the type declaration, if we want to open a file to write to it?

5. What is the type declaration, if we want to open a file and read information from it?

6. What do you think the function getline(some_file, some_string) does?