

Programming Technique II – SCJ1023

File Operations

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What is a file?

- A file is a collection of data stored on a computer's disk, either primary or secondary disks.
- Programs can:
 - read from file
 - write to files

File data types

- There are 3 data types used to perform file operations : `ifstream`, `ofstream` and `fstream`.
- `ifstream` - an input file stream that is for reading data only - from files into memory.
- `ofstream` - an output file stream that is for writing data only - to create files.
- `fstream` - an input/output file stream that is for creating file, writing data to file, and reading data from files.

File Output Formatting

- The library `<iomanip>` may be included to manipulate the format of the output of the file.
- Example of functions are:
 - `setw(x)`,
 - `showpoint(x)`,
 - `showprecision(x)`, etc.

Passing File Stream Objects to Functions

- File stream objects should always be passed by reference to functions to ensure internal consistency
- Examples of the file stream member functions:
 - `getline()` - reads a line of data including whitespace characters
 - `get()` - reads a single character from a file
 - `put()` – writes single character to a file

What is binary file?

- Binary file contains data that is not necessarily stored as ASCII text.
- Random Access means the ability to access data nonsequentially from a file