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CS 2024: Assignment 10 Report

The problem we are solving in this assignment is to print out the size of certain types. We are to use the sizeof operator on various types to discover the sizes of these types and then write the types and their sizes to a file. After the types and their sizes are written to the file, we should then print out the file to make sure everything was written properly.

In order to do what is specified above, I declare an ofstream instance that will write to a file called “datasize.dat.” After creating the ofstream instance, I check to see if the file was properly opened, and if it is, I begin writing to the file. Each line I write starts with the name of the type and is followed by the size of the type. To ensure that everything looks good, I used the setw function to align everything properly by offsetting the size value by the lineoffset value minus the length of the type name. That way, the size of the type always begins at an offset of lineoffset in every line. To discover the size of each type, I used the sizeof function on each type and returned the value to write to the datasize.dat file. Once everything has succeeded in writing to the file, I declared an instance of ifstream to read the datasize.dat file. Then whatever is found in the ifstream’s read buffer of the file is printed out to the console using the rdbuf() function.

The most difficult part of this assignment was aligning the data into columns. Using setw adds a certain amount of spaces, but since the names of the types were all of different lengths, the space offset would have to be different for each line. Finally, reading the file proved a small challenge in that if I didn’t use the buffer, I began to have trouble with spacing.