

Worksheet 9 – Writing and reading to files

This worksheet is designed to teach you how to read and write to files using the **fopen** and **fclose** commands. The worksheet today should not take the entire lab. If you finish early, either continue working on the coursework or you can download last years exam from **moodle** and have a go at the questions.

1. Loading and writing to files the easy way:

- a) From **moodle** download the data file 'co2.dat' and load it into memory using the **load** command, then plot the data.
- b) Save the array to a new file called 'co2_out.dat' using the **save** command. Try opening the file using notepad or word, to see if it worked.

2. Writing data to a file:

- a) Use the **fopen** and **fclose** commands to write the following text to a file: “The value of pi is 3.14159”
- b) Use the **fopen** and **fclose** command to write the numbers from 1 to 100 to a file. Each number should be on a new line.
- c) Use the **fopen** and **fclose** command to write your name to a file 1000 times, put a tab between each instance of your name.

3. Reading from files:

- a) Use the **fopen** and **fclose** commands to read the first line of 'co2.dat' into two variables 'x' and 'y'.
- b) Use **fopen** and **fclose** to read the first ten lines of 'co2.dat' into an array 'x' and an array 'y'
- c) Use **fopen** and **fclose**, and **feof** to read the entire file 'co2.dat' and print each line to the screen.

4. Reading from a file and writing to another file:

- a) Use **fopen** and **fclose** to read the file 'co2.dat' one x/y coordinate at a time and write the data line by line to the file 'co2_out.txt'. This should make an identical copy of the file.

5. Appending data files:

So far you have used the 'w' option with **fopen** to write to files and the 'r' option with **fopen** to read from files. There is also a 'a' option, which will allow you to append text to files. Appending is the computer term for adding data at the end of a file.

- a) Use the **fopen** and **fclose** commands to write the following text to a file: “Hello my name is ???”, where ??? is replaced by your name.
- b) After having closed the file make your script reopen the file and append the text “It's sunny outside!” to the end of the file.