**Files**

Files provide a way to store data when a programme isn’t running (persistent storage). When planning a project you need to decide which kind of file is best for the job (text files, csv files or databases).

**Text files are the simplest way of storing data.**

Simple text files can be handled using the Python code, as follows:

**text\_file = open(“my\_file.txt”, “r”)** - this opens a file named my\_file.txt. The “r” prepares the file for reading from. text\_file is a variable that represents a file object.

**text\_file.close()-** this closes the file after use

**text\_file.read(x)-** this will read x number of characters from the file. Repeating this statement will pick up reading from where the last one left off.

**text\_file.read()-** if you don’t specify a number the whole file will be read and returned as a string.

**text\_file.readline()-** this will read all characters from the current line into a string.

**text\_file.readlines()-** this will read all lines from a file into a list.

**text\_file = open(“my\_file.txt”, “w”)** - this opens a file named my\_file.txt. The “w” prepares the file for writing to. text\_file is a variable that represents a file object.

**text\_file.write()-** this will write one line of text to a file. Newline characters can be inserted by writing “\n”.

**text\_file.writelines()-** this will write all strings from a list into a file. Newline characters can be inserted with \n.

**csv files (comma separated value)**

These files are another commonly used file format. This versatile file format can be thought of as a grid, or 2D array. A csv file contains items of data usually separated by commas (though other characters maybe used as “delimiters”). Python has a module called **csv** designed to work with these files.

To use the module you must include: **import csv** at the start of your programme.

The code below can be used to read from a csv file. Each row of data from the file is returned as a list of strings:

**import csv**

**with open('mycsvfile.csv', 'r') as csvfile:**

**csv\_file= csv.reader(csvfile)**

**for row in csv\_file:**

**print (', '.join(row))**

The code below can be used to write to a csv file. Each row of data written to the file is from a list of strings:

**import csv**

**with open('mycsvfile.csv', 'w') as csvfile:**

**csv\_file= csv.writer(csvfile)**

**csv\_file.writerow (['Hello', 'Lovely Spam', 'Wonderful Spam'])**

**csv\_file.close()**