# Documentation for SO06

This code is at an early stage. The final code will use a TSI flow meter instead of the Alicat and it will have a GUI.

The flow rates returned by my code are in standard litres per minute, the volume passed in a pulse is given in millilitres and the times are in seconds.

All commands are entered through the command line

All letters entered in to the command line must be lower case.

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| Command | Function |
| E | Exits the program |
| r ‘INT’ | Records data until INT pulses have been recorded and analysed. |
| p ‘INT’ | Tells the program that the com port used by the flow meter is PORT. This should be run once on start-up. |
| o | Outputs analysed data to a text file.  This is not yet implemented |
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The com port needed by my code must be determined manually by using termite to look at each of the available com ports. If the port is not entered the program will not function.

Example user input:

p 6 r 10000

This will set the port to be 6 and then make the program record for 10000 milliseconds.

Something you should be aware of:

The program finds the volume in a pulse by finding when the flow rate rises above and then drops below 1 litre per minute flow rate then integrating the flow rate over time from a bit before to a bit afterwards. This means that if your pulses are very close together you can end up with flow on the edges of the pulses being counted twice. This can be fixed by reducing the amount on either side of the pulse that is included in the integration.

Peak flow- maximum flow rate, also about the average flow rate for that pulse

Duration- time taken by the pulse

Cycle time- time between the start of this pulse and the start of the next

Volume- volume passing out the main flow exit in the pulse measure in ml

Fdksla;jfkdsla;jfkds