This section deals with the next step, writing the important sections of your report: the introduction, conclusion and abstract. They are important because 9 times out of 10, readers will focus on these sections.

**Abstracts, introductions and conclusions—what's the difference?**

- **An abstract** is a brief statement which outlines the report in full; what was done, achieved, decided and concluded.
- **The introduction** is a section which states your aims and some required background knowledge. An introduction will also outline the body of the report (where you state what you will do).

Don't confuse the introduction with the abstract or summary; they are different and have different purposes. The common misconception is that one is simply a smaller version of the other (that the introduction is a rewritten, chopped-up version of the abstract). However, this is not the case.

**The abstract**

Most reports need an abstract, but they are generally more important for technical reports or scientific documents.

- An abstract is a succinct passage which provides a brief outline on what was achieved/decided/concluded in your report.
- An abstract is placed on a separate page before the contents page.
- An abstract can be written last so that every bit of necessary detail is taken from the finished report.
- An abstract is one part of a report that will certainly be read by a client/assessor/manager. The rest of the report is read if more detail is required.
- An abstract is about half a page in length. Sometimes a word limit is given. This can range from 50-300 words.

**Example Abstract**

A trailer rig was used to analyse the properties of an undamped system and experiment with a range of instrumentation. [1]

It was found that two modes of vibration exist, these being longitudinal vibration and rotational. The damping ratio and natural frequency were calculated and are included in this report. The damping was found to be linear. [2] While the experiment was useful it did not closely resemble road conditions. Actual road conditions would result in successive bumps and constant vibration while the wheels rotated the whole time. [3] Finally, it was decided that given cost considerations, the XY plotter provided accurate results and manageable data. [4]

**The introduction**

The aim of an introduction is to state what you have been asked to achieve and list your current of course of action.

**Example introduction 1**
This document compares a range of instrumentation of varying cost and sophistication and investigates the properties of undamped systems. [1] The natural frequency and damping ratio of these systems will give an indication of their behaviour when ‘excited’. Furthermore, an analysis of the mathematical model as compared to actual road conditions must be completed and equipment suggested for further studies of the trailer. [2]

**Example introduction 2**

Machinery and equipment in industry is heated up and brought on line gradually to avoid problems generated by thermal generated stresses. [1] In this experiment the severity of stress due to sudden temperature changes are examined. [2]

### The conclusion

The conclusion (along with the introduction and abstract) is generally the section most read by clients. If you can conclude your work /findings well, you facilitate your client’s understanding of your work’s significance, your achievements and whether your aims have been successful or not. Even in the face of failure, e.g. your experiments do not work, a proper conclusion would demonstrate an understanding of what you achieved. Here is how to do that:

- Note the shortcomings and pitfalls of the methods and/or equipment used
- State your findings from the analysis of your data
- Outline possible recommendations (e.g. provide suggestions for further research). Recommendations may form a separate heading if substantial.

**A note of caution**

Do not use your abstract to write your conclusion or vice versa as the reader will believe you have not put enough thought into why you are doing your work. Remember the abstract, introduction and conclusion have different purposes, different emphasis and different structures.

**Example Conclusion**

The results of the damping coefficient and the natural frequency of the system are fairly consistent given the small amount of data given and how prone this method is to error. [1] In looking at the data provided by the pointer and scale it is surprising that the results were so consistent. The equipment was difficult to use and read and not really adequate for this type of testing. [1]

The LVDT transducer provided clear results for the XY plotter and the digital oscilloscope, both providing graphs that were very clear. I recommend the use of the XY plotter over the digital oscilloscope due to their difference in price ($4000 for a XY plotter and $7000 for a digital oscilloscope). The XY plotter does not require the use of a computer and printer to get it into a hard copy form where the data can be analysed. [2]