**Floyd, T, L & Buchla, D, M (2009) Electronics fundamentals. Circuits, Devices and Applications.** **Boston : Pearson, Prentice Hall. Eight Edition** 

I recollect using this book at the Communications technology stage of my Bachelor of Science Degree back in 1998. It was the first edition and I remember it as being easy to use, well organised and very easy to find information on the precise subjects needed.

I decided to research the latest edition to establish if it could be of use for exploring the requirements I will need in designing the part of the app that specifically deals with the fundamentals of basic electricity and electronics, which initial analysis of the information gathered in the focus group questionnaire indicated as important to the target group.

The primary layout of the contents section is broken into three easy to understand sections Part 1 is DC Circuits, Part 2 is AC Circuits and Part 3 is Electronic devices. These sections are further subdivided, with Part 1 broken into 7 chapters, Part 2 broken into 8 chapters and Part 3 comprising of a further 6 chapters. The vast size and comprehensive nature of this book, over 1000 pages might make it seem arduous at first consideration, but its well-defined layout overcomes this challenge, the content I require for the initial consideration of DC circuits within the basic electricity and electronics section of the app are dealt with comprehensively in Chapter 1, 2 & 3.

**Chapter 1** Quantities and Units

1-1   Scientific and Engineering Notation

1-2   Units and Metric Prefixes

1-3   Metric Unit Conversions

1-4   Measured Numbers

1-5   Electrical Safety

**Chapter 2** Voltage, Current, and Resistance

 2-1 Atoms

 2-2 Electrical Charge

 2-3 Voltage

 2-4 Current

 2-5 Resistance

 2-6 The Electric Circuit

 2-7 Basic Circuit Measurements

**Chapter 3** Ohm’s Law, Energy, and Power

3-1   Ohm’s Law

3-2   Application of Ohm’s Law

3-3   Energy and Power

3-4   Power in an Electric Circuit

3-5   The Power Rating of Resistors

3-6   Energy Conversion and Voltage Drop in a Resistance

3-7   Power Supplies

3-8   Introduction to Troubleshooting

The content required to construct the information needed to cover the section of the app dealing with AC Circuits within the basic electricity and electronics section of the app are dealt with systematically in Chapter 8.

**Chapter 8** Introduction to Alternating Current and Voltage

8-1   The Sinusoidal Waveform

8-2   Sinusoidal Voltage Sources

8-3   Voltage and Current Values of Sine Waves

8-4   Angular Measurement of a Sine Wave

8-5   The Sine Wave Formula

8-6   Analysis of AC Circuits

8-7   Superimposed DC and AC Voltages

8-8   Nonsinusoidal Waveforms

8-9   The Oscilloscope

In an analysis of the information gathered at the focus group, on the subject of the maths requirements essential to a basic understanding of electronics the following topics were dicussed and there was agreement amongst the target group for their inclusion in the app; a) Scientific Notation (b) Electrical Units and Metric Prefixes (c) Metric Unit Conversions (d) Measured Numbers; Significant Digits; Rounding Up-Rounding Down. This information is provided in chapter 1.

There was a general conversation amongst the participants in the focus group about exploring putting some historical context or milestones in electronics, and maybe using this information as an introduction to the app, in the context of this book many of the milestones in the development of electronics are examined in the preface. Biographies of some of the early pioneers in electronics are dicussed in short historical notes which are located in their specific areas of contribution throughout the text.

Another area of interest to the participants of the focus group is the topic of careers in electronics, the target group attached importance to receiving good quality information on this topic as confirmed in the focus group results. This book gives a short general review of the various career paths available in electronics, with brief explanations of the following roles, Service Shop Technician, Industrial Manufacturing technician, Laboratory Technician, Field Service Technician, Engineering Assistant, Technical Writer and Technical sales.

I believe that the contents dicussed will be of significant help to me in the development of content for the app.

**Reference:** Floyd, T. (2009). Electronics fundamentals: circuits, devices and applications. Boston: Pearson, Prentice Hall, 2009. Edition: 8th revised edition