Module 3 — Gearing up with Electronics

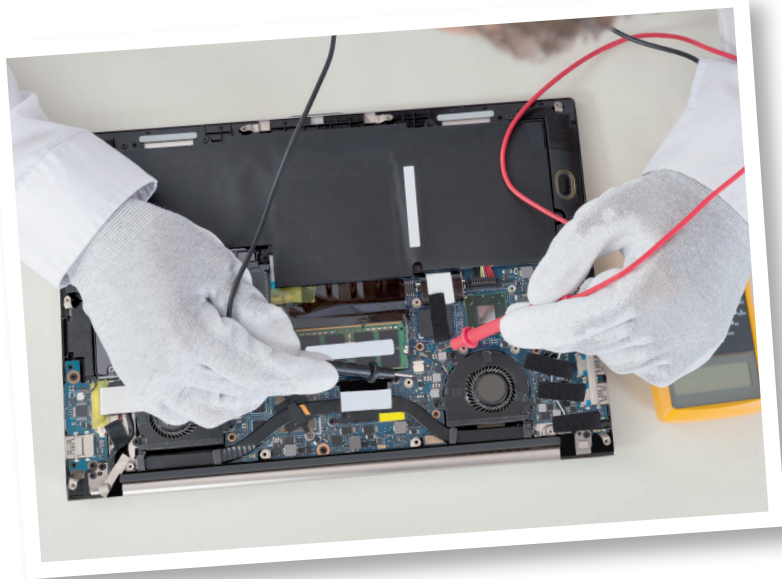## Unit 7 — How Does an Electronic Circuit Work?

Reverse Engineering

Reverse engineering , also referred to as deconstruction, reversing, backwards engineering, and back engineering, is the process of extracting knowledge from any device or electronic equipment.

It involves the need to deconstruct an entire circuit for further analysis of its components. Although the methods that will be employed are opposite to the process of creation, it is considered as a practical approach to learning circuitry. Moreover, reverse engineering gives light to Aristotle's concept that the key to understanding the operations of a device is to study each one of its parts. Back in the days, the field was limited to its employment on a circuit and other electronic equipment; now, in the modern world, the application of a "reverse" methodology includes almost anything – from children's toys and household appliances to neuroscience, computer programming, and analysing DNA.

Inarguably, reverse engineering is rather destructive and invasive. Some are not in favor of it since they do not welcome the idea of **tearing** their works **apart**. For others, however, it is a creative way of improving an already completed project; especially if the particular project is **outstanding**, they are granted the chance to make it even more outstanding.

Among the common projects that can be modified with the use of reverse engineering are alarm clock radios, coffee machines, and colored lamps. Alongside, the knowledge of internal systems, they can add a unique functionality that is not included during commercial distribution. For instance, you can add a new beeping sound to an alarm clock radio.

❖ Understanding the text

1. **Find terms and adjectives in the text that are associated with the ones below.**

1. .... circuit
2. .... analysis
3. .... approach
4. .... appliances
5. .... programming
6. .... systems
7. .... functionality
8. .... distribution

2. **Choose two correct synonyms for each of the terms below.**

1. **Although:** even if, notably, in spite of
2. **Moreover:** instead, furthermore, additionally
3. **Inarguably:** allegedly, undoubtedly, certainly
4. **However:** nonetheless, on the other hand, recently
5. **Alongside:** next to, together with, on the contrary

3. **Provide the information required.**

1. Definition of reverse engineering

   ....

1. Applications

   ....

2. **a.** Advantages

   ....

   b. Disadvantages

   ....

❖ Writing

Write a paragraph about reverse engineering. Focus on the following elements and use some of the terms from exercise 2.

- Your (or someone else's) personal experience

  ....
  ....
  ....

- Your opinion about it

  ....
  ....
  ....