CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter is involved about the discussion to build the project which consists of hardware design and software design to complete the coin counter and sorter. The detail of each part will be discussed along with the figure related.
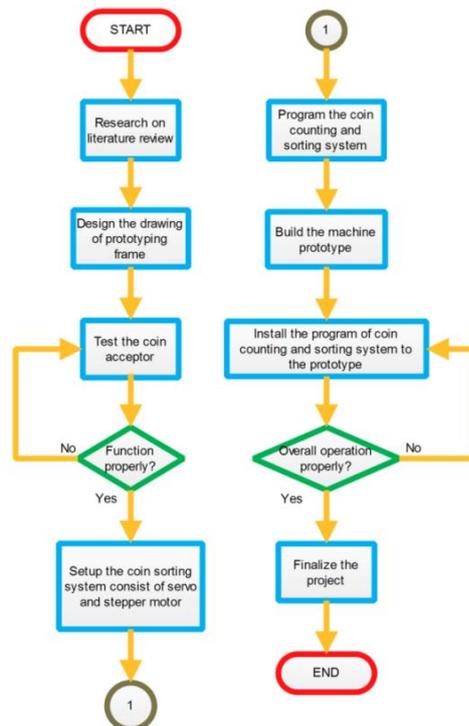
3.2 PROJECT FLOWCHART

Figure 3.1: Project Flowchart

Figure 3.1 shows that the overall flowchart to complete the project from the beginning to the end. First, start the project by revise literature review of related article, journal and scholar through online or the books in library. After that, the fundamental and the basic concept of the project will be known and understand. The concept to programming the counting system and the mechanism of build the sorting system should be clear. Next, the counting system will be designed as the coin acceptor is the device to count the coin value and it is interface to the computer through ARDUINO. The design of the counting system will be detail explained in the part below. Then, the sorting mechanism is being designed to allow 6 different coins to sort and store in the box respectively. The design of the sorting system will be detail explained in the part below. Next, both hardware and software is combine and assembly and the overall test to the machine is making to ensure that the machine is performing well. Finally, the data and result through the project is obtained to analysis the overall performance.
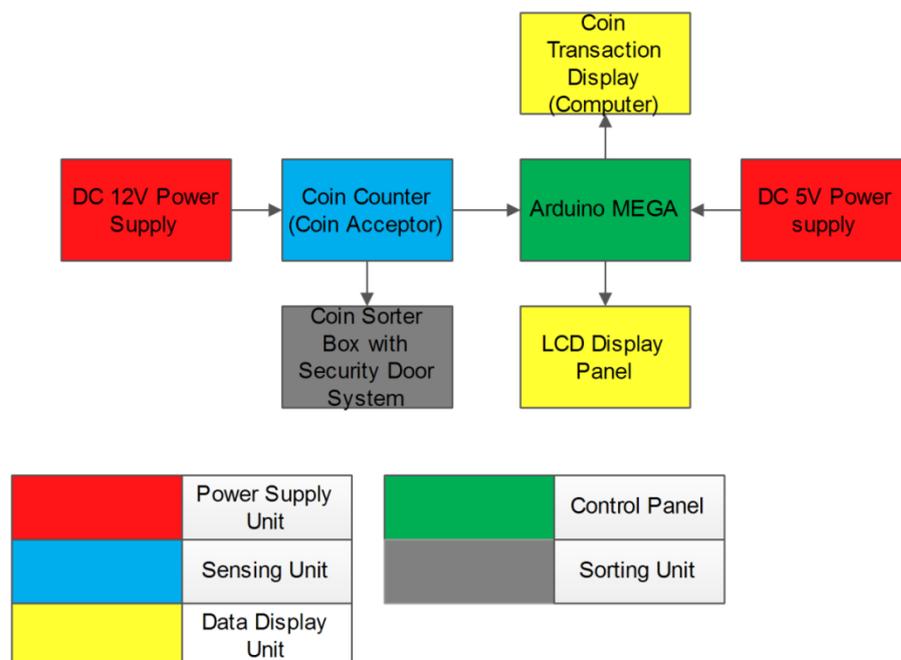
3.3   BLOCK DIAGRAM

Figure 3.2: Block Diagram of the Coin Counting and Sorting Machine

Figure 3.2 shows the overall block diagram of the project. It consists of five main parts which is the power supply unit, sensing unit, control panel, sorting unit and the display unit. The power supply unit consists of DC 12V power supply and DC 5V power supply is circuited to power on the coin acceptor and the microcontroller ARDUINO respectively. The sensing unit which is the coin acceptor is used to identify the 6 different Malaysia coins and forbid the foreign coin or counterfeit coin. The control panel which is the ARDUINO MEGA is the unit to count the quantity and total amount of the coin deposit in this machine. The sorting unit which is the coin sorting box is to sorting 6 different coins into the holder respectively. The security door system implement to the box that the coin only can be taking out if the correct password is enter. Otherwise, the magnetic door lock will remain lock and the user cannot open the sorter box. The display unit which include of LCD display unit to display the quantity and total amount of coin inserted, and the computer monitor unit are to display the coin transaction that record down all the history of the coin machine of each coin inserted with date and time.