CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter will discuss about the flow of this Final Year Project from the beginning until finish this project. The flow chart is very important to illustrate the sequence of operations to finish the work. The flowchart is generally drawn in the early stages. It will guide to finish the works. Meanwhile, the Gantt chart shows how the project is planned and seen instantly whether the project is behind or ahead of the schedule. The function of the Gantt chart is to guide towards the direction of the project plan. So, these two charts are very important to guide us to finish up the projects.

Moreover, in this chapter also will discuss about the concept generation. There were four design of product. Then, list the advantage and disadvantages of each of the product design. After that, proceed to finalize concept. This finalize concept is to choose the good one from the four design. The best product will proceed to another step, which is fabrication process. Before that, the material selection is needed to do. This is to select the suitable material that being to use. The material selection is also followed by the function of the product.
3.2 FLOWCHART OF THE PROJECT

Flowchart is very important to illustrate the sequence of operations to finish the work. It use symbol to represent of a process. Each of steps in the process is represented by different symbol and contains a short description of the process step. The top of the flowchart will begin with start.

**Figure 3.1:** Flow chart for Final Year Project
Then it followed by literature review. On this step it will discuss about the currently method use. That is collecting by using hand, by scoop and basket and rake. Apart from that, there is list of advantage and disadvantage of each method. By doing so, know that which one is the efficient and which one is take short time in collecting.

### 3.3 CONCEPTUAL DESIGN

Next is conceptual design. On this stage, is need to design four products that function as to collect the loose fruit. At this stage also, it has been listed the advantages and dis advantages of each design. The advantages and disadvantages is carry out by the design and some criteria like storage, portability and easy to maintenance.

#### 3.3.1 The First Concept

![Figure 3.2: The First concept](image)

The idea was comes idea from grass cutting machine. This concept uses the roller to collect the loose fruit. This concept is handles by push forward. The loose fruit that have been collected will move to the box that placed at the back. Besides, it have four wheel that to easy the worker to handle it.

In the other hand, there have some advantages that are easy to use and easy to handle. This is because it have wheel that easy to move it to everywhere. Other than that, this concept is confortable in use.