CHAPTER 1

INTRODUCTION

1.1 PROJECT MOTIVATION

Vending machine is a coin operated machine for selling merchandise (Merriam Webster Dictionary). Vending machine provides various product such as snacks, beverages, water, tickets, and others product. Vending machine has many benefits such as no need human energy, flexible in time, and saving time [10].

Firstly vending machine benefit is not using any human energy on it. The vending machine is managed by operator. Machine manufacturers sell machines to the operator that decides which payment system [11]. The labor work can be saving from having operators that’s operated on it.

Secondly, vending machine is flexible in time that does can operate in 24 hours a day, seven days a week; each consuming between 2,500 to 4,400 kWh per year [9]. The vending machine can be operated anytime although that was holiday or weekend.

Thirdly, vending machine can save a time. In a business, an employee does not need to waste time for lunch. With a vending machine in the cafeteria, all they have to do is place some coins and push some buttons to get a drink or a snack [12].

As conclusion, the vending sector has seen significant growth over the years and it will continue to do so in the years to come [12]. The vending machine now needs to improve to give more contribution and benefits to human being.
1.2 PROJECT BACKGROUND

The specific problem having with vending machine is technical problem. Vending machine has many technical problems such as method of payment, level of security, very heavy structure, and product capacity.

Firstly, problems occur with payment method. Coin acceptors often jam up, especially if a bill or other foreign object is inserted into the coin slot. When the coin box was full with the coins, no more payment can be accepted thus preventing from another purchase [10].

Secondly, problems occur with the security level. Many vending machines today easy broke and the money also easily can be taken by a thief. The doors are pried open, coin mechanisms; money bill acceptors with the bills in tact, money pans, the money and the products in the vending machines are stolen [13].

Thirdly, problems occur with the machine weight. Every year, a few people are killed when machines topple over on them, either while trying to steal from them, or venting frustration on them, especially when a malfunction causes the machine to fail to dispense the purchased item or the proper change. 15 cases recorded which men trying to get a can out of the machine were crushed [3].

Lastly is the problem with machine capacity. Vending machine actually cannot exceed many products. For the example vending machine made from china named Glass front Snack and beverage Vending Machine having a large body dimensions (height:(183cm), width:(73.5cm), depth:(78.5cm) ). This machine can have 153 product capacities. While others product Box or Bag Living Consumable Vending Machine (LT-X64) having a small dimensions (height :( 42cm), width :( 20cm), depth :( 60cm)) can have only 60 product capacities. This prove that a big vending machine to insert more product in it [14].
For the conclusion, the vending machine needs more improvement to overcome the problem that’s occurring. This project wants to solve a problem in vending machine that related to the payment method.

1.3 PROJECT PROBLEM STATEMENT

From the previous project background, the problem that the project wants to solve is the problem with the payment method. The method used now is using a coin and note money. The problem with the payment is the tank full with a coin; the notes cannot be read and also the notes or coin always stuck in the machine [15].

Firstly, problems occur for vending machine in tank area. When the tank was full, no more coin can be accepted. This will cause no more purchase can be made thus vending machine will stop the operated [10].

Secondly, the problem with the notes cannot be read. For vending machine using notes as method payment, the notes must be in good condition. The term of good condition refer to the good shape of the notes, not folded, and original one. When using notes with bad condition such as crumpled and dirty, the vending machine cannot read the note and then rejected the payment.

Lastly, the problems occur when notes or coin stuck in machine. Actually when the coin or the notes inserted not in the right direction, this problem will occur. The only way to remove the notes or coin stuck is called the vending machine company to repair that machine [15].

As conclusion with the current method of payment, there are many problem occurs. So, this project will develop a new system for vending machine that uses prepaid method.