CHAPTER I

INTRODUCTION

1.1 Background of Study

In this global economic era, enterprises compete for their business, especially in world markets. Enterprises should improve their strategy through the use of analysis, technology, skills, and especially the craftsmen to make the greatest enterprises. Called business, because there are customers that interact and make some relationship with the company. In his book [1] argued that companies need to shift their production policy, from the old world of mass product where "standardized products, homogeneous products, and long product life and development cycles were the rule" to the new world where "variety and customization supplant standardized products". Pine argued that building one product is simply not adequate anymore. In other words, companies need to be able to develop multiple products that meet multiple customers' needs. While e-commerce hasn't necessarily allowed businesses to produce more products, it has allowed them to provide customer with more choices. By increasing choice, however, it has also increased the amount of information that customers must process before they are able to select which items to meet their need. To address this information overload, e-commerce stores are applying mass customization principles not to the products but to their presentation in the one-line store [1]. The good way to persistent patterns in order to offer related goods together and track related sales on different levels with market basket analysis.

Market basket analysis is an important component of the analytical system in retail organizations. The widely definition is market basket analysis targets customer baskets in order to monitor buying patterns and improve customer satisfaction.

Apriori is the algorithm that powerful and famous in finding frequent itemsets with using association rule technique. Apriori algorithm was proposed by Agrawal and Srikant 1994 as an algorithm for mining frequent itemsets for

Boolean association rules. This algorithm works on the prior knowledge of frequent itemset properties [2]. Apriori property is used to improve the efficiency of the level wise generation of frequent itemsets. Another algorithm that can used to analyze sales transaction data is Frequent Pattern-Growth (FP-Growth). Like Apriori, the FP-Growth algorithm starts by counting the number of items that appear in dataset.

Problems the availability of transaction data in my enterprises hasn't been utilizing yet for making purpose. On the other hand, several method that can be used to determine frequent itemsets including association rule. In this study, the transaction data will we used to determine frequent itemsets took from "Sinar Karya Furniture" will be used for finding customers' shopping patterns to support making the program.

1.2 Problem Statement

From the problems explained above, the problem of study that can be taken is:

1. The transaction data hasn't been utilizing yet, although it can be used to find the frequent itemset by customer habit.
2. The need to build an application to find the customers habit by using web mining.

However, it can be used to support decision-making in the company. Therefore, build an application which utilizes the data is needed. The goal is to build an application with PHP and MySQL database.

1.3 Scope of Study

In order to this final year project, the study only discusses building an application for frequent itemset based on sales transaction within 6 months (from January 2012 until July 2012). And marketing strategy using frequent itemset.

1.4 Objectives

Based on the problem statement above, so the objectives of study are:

1. Analyzing the sales transaction based on customer buying habits.
2. Developing the software application in order to find the buying patterns using apriori algorithm.

1.5 Benefit of Study

1.5.1 Benefit for author

1. Study the implementation of data mining approaches into a retail store.
2. To fulfill requirement for finishing Bachelor Informatics Engineering in Computer Science Faculty of Dian Nuswantoro University

1.5.2 Benefit for academic
1. As a measurement of the understanding and mastery of the proposed study.
2. As an academic evaluation method to raise education quality.
3. As a reference for those who want to develop the founding of this study.

1.5.3 Benefit for Sinar Karya Furniture
1. Help the store to find purchasing patterns based on the sales data.
2. Ease the store to plan the best marketing strategies.