INTELLIGENT INVENTORY FORECASTING SYSTEM

A Project paper submitted to the MARA University of Technology
In partial fulfillment of the requirements for
Bachelor of Science (Hons) Intelligent System
Faculty of Information Technology
And Quantitative Science

By

FADZLINOR BIN MUSTAPA
2004218586
BSc (Hons) INTELLIGENT SYSTEM
FACULTY OF INFORMATION TECHNOLOGY AND
QUANTITATIVE SCIENCE

27th APRIL 2006
DECLARATION

I hereby declare that this research report together with all of its contents is no other than those of my own work, except for some information taken and extracted from other sources that have been quoted respectively.

27th April 2006

FADZLINOR BIN MUSTAPA
(2004218586)
ACKNOWLEDGEMENT

In the name of god, Glory and praise to Allah, with his blessing, I was able to finish this written report within time duration given. This has proven that if there is a will, there is a way.

Firstly, my null appreciation goes to Cik Norzaidah Md Noh as my supervisor who has tries to enrich me with her ideas and opinions in order for me to complete this project. Her ideas and opinions help me a lot in acquiring new knowledge and skills. Thanks for your commitment during the consultation hours with me.

Special thanks to Assoc. Prof Zaidah for your guidelines, Motivation, and support in conducting this research. With her expertise, I was able to conduct a research on specific domain that I'm doing now.

My deepest gratitude and love also goes out to both of my parents and all of my siblings who have given me inspiration and support during this project. Without the courage and wisdom that they have given to me, I will not have a strong will to finish this project.

I would like also to thank all of my friends who contributed to my research. They are course mates in CS223, my housemates and my best friends who were always there when I need them. I would like to thank to all of you. God bless you.

27th April 2006

FADZLINOR BIN MUSTAPA
ABSTRACT

This project is about producing a prototype of forecasting system by using artificial neural methods that will forecast stock level in the inventory. More specifically the project forecast the stock level of rice in the inventory for a specific period of time. This project has three objectives to be achieves. First, this project will doing a study on the inventory management and gathers all knowledge regarding the inventory. Second, the project with gather all knowledge about artificial neural network method. Lastly, this project must achieve an objective of developing a prototype of intelligent forecasting system that can make a prediction of the rice's stock level in the inventory. This project is hopefully can be beneficial to others. The general finding for this project is that with Back propagation algorithm, the suitable learning rate for forecasting prototype is 0.1 with architecture 7-11-1 that is seven nodes employed in the input layer, eleven nodes in the hidden layer and lastly one node employed in the output layer.
# TABLE OF CONTENT

| TITLE PAGE | i |
| ACKNOWLEDGEMENT | lii |
| ABSTRACT | iv |
| LIST OF TABLES | viii |
| LIST OF FIGURES | xi |

## CHAPTER

### I INTRODUCTION

1.1 Introduction 1
1.2 Background of the project 2
1.3 Problem statement 2
1.4 Objectives of the project 3
1.5 Scope of the project 3
1.6 Significance of the project 4
1.7 Summary 4

### II LITERATURE REVIEW

2.1 Introduction 5
2.2 Logistics or inventory 5
2.3 Artificial neural networks 9
- 2.3.1.1 The basics components of neural networks 10
- 2.2.1 Application of the neural network 11
- 2.2.2 Feed forward Back propagation learning algorithm 13