PROJECT REPORT

Implementation of Least Square Algorithm for Stock Price Prediction

Pascalis Alfredho Kurniawan

11.02.0057

2014/2015

FACULTY OF COMPUTER SCIENCE

SOEGIJAPRANATA CATHOLIC UNIVERSITY

Jl. Pawiyatan Luhur IV/1, Bendan Duwur, SEMARANG 50234

Telp. 024-8441555 (hunting) Web: http://www.unika.ac.id

http://ikomunika.web.id/

APPROVAL AND RATIFICATION PAGE

PROJECT REPORT

Implementation of Least Square Algorithm for Stock Price Prediction

by

11.02.0057 – Pascalis Alfredho Kurniawan

This project report has been approved and ratified by the Dean of Faculty of Computer Science and Supervisor on 15 July 2015

With approval,

Examiners,

Suyanto Edward Antonius, Ir., M.Sc
NPP : 058.1.1992.116

Supervisor,

Hironimus Leong, S.Kom., M.Kom
NPP : 058.1.2007.273

Examiners,

a/n

Shinta Estri Wahyuningrum, S.Si, M.Cs
NPP : 058.1.2007.272

Examiners,

Rosita Herawati, ST., MIT
NPP : 058.1.2004.263

Dean of Faculty of Computer Science,

Hironimus Leong, S.Kom., M.Kom
NPP : 058.1.2007.273

STATEMENT OF ORIGINALITY

I, the undersigned:

Name : Pascalis Alfredho Kurniawan

ID : 11.02.0057

Certify that this project was made by myself and not copy or plagiarize from other people, except that in writing expressed to the other article. If it is proven that this project was plagiarizes or copy the other, I am ready to accept a sanction.

Semarang, 15 July 2015

Pascalis Alfredho Kurniawan

11.02.0057

iii

FOREWORD

Praise to the Lord Jesus for all the love and the gift so that it can complete the drafting of this final project entitled “Implementation of Least Square for Stock Price Prediction”. The preparation of the final project was filed to qualify for graduation at the Informatics Engineering Department, Faculty of Computer Science, Soegijapranata Catholic University, Semarang.

Project title search process takes struggle, among them turned several titles, first filed apriori and then denied, and finally select “Prediction” although still there are some titles that are rejected again, any stock originally rejected, gold prices also declined. In the end Mr. Marlon as the supervisor helped by giving the title which is about stocks, but using Least Square Algorithm. The process guidance experience up and down, and eventually got the gift for the following review II.

Once again thanks a lot to say Lord Jesus, parents Theodorus Sudimin and Chatarina Muryanti, the sister Eliza Shinta Maharani, supervisor Hironimus Leong, S. Kom., M. Kom, as well as other Lecturer Suyanto Edward Anthony, Ir., M. Sc, Shinta Estri Wahyuningrum, S. Si., M. Cs, Rosita Herawati, ST., MIT. Girlfriend Serlinda, friends Ikom Tiyok, Brillian, Wisnu, Puck, Yogas, Jeffri, Angger, Erik, Pandu, Pendi, Dody, etc. Friends like Jatu, Jojo, Thio, Drem, Hana, Azwar, Sadida, Ria, Leni, Pincuk, etc. Over the support.

Final project is far from perfect, for it please advice and criticism. Hopefully this final project is helpful for the readers.

PREFACE

This project is the Implementation of Least Square Algorithm for Stock Price Prediction. This Project is useful for predicting stock price of Indosat Tbk. 1 day ahead and a few days, a week, or a month and also recommendations of stock prices in the future. In this project there are several chapters.

Chapter I contains an introduction which contains background about what that prediction of stock, using Least Square algorithm, and the output of this program. In addition there are also the scope that contains the original data from which the stocks were taken, the use of Least Square algorithm, and the end result of this program. The last goal of the creation of the program, in order to help users find out the stock price in the future and can up or down in the recommendation the stock price.

Chapter II contains a literature study that, among other contents introduction data mining, there is an explanation and types. Then the introduction of Least Square algorithm, there are explanations, examples, and examples of these programs. Introduction to data structure usage, explanation, examples also exist. The last example uses algorithm and spelled out don't get too detailed.

Chapter III contains to research metodology, how the process of beginning to make this program untul the presentation, described using points. It is also necessary to know the schedule of project management from beginning to end, using tables and his time.

Chapter IV contains to analysis and design, enough with the flowchart only. There are described the flow or process the program uses symbol-symbol flowchart and are described as well as any plot or process.

Chapter V contains the implementation and testing, it contains examples of coding this program, but displayed only the important coding or the core of the program. Then there are also testing, contains an example of a program in the browsers, and should be described so that the reader can understand.

The last stage Chapter VI contains conclusion and further research, it will

conclude all of these programs, then further research contains a study for this program in the future want to how. All need to be explained more fully so that readers can understand.

ABSTRACT

Abstract — This program begins with stock data retrieval using a syntax curl. Stock data will be taken based on the choice of date for the selected user. In the syntax of such a program will take the curl site stock data that will be targeted, finance.yahoo.com and select stock data companies what want is taken, this project takes data company Indosat Tbk. and then select the historical prices. There will appear the history data's stocks many years and updated automatically. After the site is loaded, and then take what is taken from page, this program takes the CSV API to put programming language.

Prediction stock prices in this program using Least Square algorithm. Least Square algorithm is the algorithm that is used to predict future data came based on previous data. The more data that will be more predictable, then the results are more accurate. Beginning with the creation of tables analysis aims to conclude all of the stock data ad made into 1 stock. Taken stock data "high" only, as it would predict the highest stock price. After the analysis then the next entry to the Least Square formula. Least Square can only be to compute predictions 1 day ahead.

The end result of the program is in the form of prediction results and graph. There are two predictions for the results, i.e. Results prediction 1 day ahead and prediction a few days ahead, and also added captions up or down in the price of the stock. And then visualized in the form of a graph line and bar chart. The graph of a line and bar chart for how to actually call him stock data is the same, but are distinguished by a type, line and columns. With the graphics users can find out next day stock price developments and up or down.

Keywords : Data Mining, Prediction, Least Square Algorithm.

Table of Contents

TABLE OF FIGURES

TABLE OF TABLE