Financial Indicators Surveillance Tracker
(FiST)

by

Muhammad Zulhimi Bin Bachok

Dissertation submitted in partial fulfillment of
the requirements for the
Bachelor of Computer Science (Hons)
(Business Information System)

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Universiti Teknologi PETRONAS
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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Business Information System Programme
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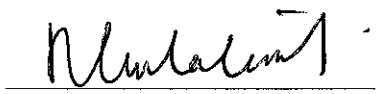
Approved by:



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TRONOH, PERAK

May 2011

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

MUHAMMAD ZULHIMI BIN BACHOK

ABSTRACT

To get a lot of money, it needs a lot of hard work. Now it is time to make your money work for you. Besides, world of investment, have a thousand product to choose. Nowadays, young generation are very lucky to have an updated technology environment especially internet that currently connected with all things that people need as their interest. To invest in stock market, new generation of investor such as young investor needs to have the knowledge and financial circumstances. As a solution, Financial Indicators Surveillance Tracker (FiST) is a web-based platform providing young investor to start learning on how to choose which Public Listed Companies (PLCs) and move a step ahead to invest in stock exchange. The main objective of this application is to develop a financial web-based platform for young investor, which provides important financial ratios of PLCs. This application will also help to identify financial performance of PLCs and propose a guideline on how to have a quality decision making to the young investor. In relation with the problem statement, this web-based platform will analyse the requirements given by Bursa Malaysia, Malaysia's stock exchange and come out with the functionalities of financial ratios, designing the interface consists of database and to provide financial data provider as addition information for young investor. Numerous literatures studies have been done in order to get comprehensive information regarding what kind of financial ratios need to be used, ten different financial ratios been identified and will be included in this web-based platform. It is purposely to ensure the user understand both technical and fundamental analysis that frequently done by the investment analysis. The significance of this project is that, FiST allows the users to focus on financial ratios by comparing with other related ratios. It will be a good platform for young investor to start invests in stock market actively.

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- Mohd Hafizul Bin Mat Rahim (Executive, Surveillance Research and Development Department)
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LIST OF ABBREVIATIONS

ACRONYMS	FINANCIAL RATIO (ALERTS)
CR	Current Ratio
GC	GN3 Consecutive Two Financial Year End Losses
GE	Gearing
IT	Inventory Turnover
MI	Movement in Inventory
NH	Net Profit Attributable to Equity Holders
NL	Net Loss and Net Current Liability
OC	Operating Cash Flow
PR	PE Ratio
SE	PN17 / GN3 / Watch list – Shareholders' Equity

CHAPTER 1
INTRODUCTION

1.1 Introduction

This chapter will describe the background of study, problem statement, objective, limitation, pre-requisite, tools / equipment required and short summary of the research project.

1.2 Background of Study

The internet has played a major role in opening the world of investing. Financial data providers that available in the internet are all specific for a company financial data only. This would be a problem for a new investor. To buy a stock or shares of a company, investors need to compare and clear which stock need to be chosen. Financial information and data will help them to do some analysis to ensure their prediction of a company to increase in value and bring profit to them.

The existing financial data provider such as Google finance, Yahoo finance, Bloomberg and Reuters are those leaders in providing financial data for all company in the world. Study and research among few existing financial systems been made. It is to guarantee the quality of the project and grow to be as one of the financial data provider.

It is crucial to know and understand each of the existing system, so that it will be more advantage for this web-based platform to growth. However, each of the system has a different point of view and it can be seen in the Figure 1. There are also no comparison of financial data provider between company been made.

Generally, all the information had been provided by those financial data providers is basically for the active investor, broker and people who really understand the fundamental of financial data. With an analysis been made, it can help the users to make their own assumption on what company that is in good or bad performance. Table 1: Comparison between the famous financial data providers in the internet:

Item / Financial Data	For young investors	Guideline to invest	Links to any investment website	General Info	PLCs financial data	Comparison financial data (PLCs)
Reuters	NA	NA	/	NA	/	NA
Bloomberg	NA	NA	/	NA	/	NA
Yahoo Finance	NA	NA	NA	/	/	NA
Google Finance	NA	NA	NA	/	/	NA
Bursa Malaysia (Website)	NA	/	/	/	/	NA

*NA = Not available

Table 1: Comparison between financial data provider

This project is aim to address the problem that become a common to the new generation of investors by developing Financial Indicators Surveillance Tracker (FiST). FiST is believed can help young investors to understand the unhealthy and potential growth company based on their financial ratios that execute using web-based platform, technically using code in Microsoft Visual Basic / Asp.net. This should be a positive step to understand the stock market. Generally, the purpose of FiST is for the user to understand the financial ratios in detail. The features and functionalities of the FiST enable young investors to start their future step ahead by gaining money in stock market industry.

The significant of this project is that, it ensures the target user to have some idea of information on how to determine a company that having a good or bad in term of their financial performance. If a company having positive and sustainability finance, logically the company is in a good performance. By using FiST, young investors will familiar with investment alternatives and can develop a realistic investment plans. By having quality and informative analysis, it should positively increase your chance of achieving financial success.

1.3 Problem Statement

The accessible of information that compare among PLCs is not available yet. Besides, it is difficult for young investors to understand and master some of the financial ratio detected especially for the new investors. Thus, it is important to integrate financial data to formulate those ratios. Furthermore, the knowledge to assist the strength of a PLC's financial data is very hard to understand. By having easy-to-read information about the financial ratios, it will attract young people to start their investment. This also should be a good tool for the new generation of investors.

1.4 Objectives

The main objective of this project is to develop a financial application, which provide important financial ratios, identify unhealthy PLCs and propose a guideline on how to have a potential quality decision making to the user. Other objectives of this project are as follow:

1. Analyse user requirements of financial ratios

   (Functionalities of FiST)

2. Design user interface, database and architecture of a financial application
3. Develop a web-based financial application that allows user to:
   - Detect abnormal trend of financial ratios (make the financial ratios in colour)
   - Provide user with ten important financial ratios

   (The information to generate these ratios is comes from three different sources of Bloomberg, Reuters and Bursa Malaysia's website)

1.5 Scope of Study

Based on current resources available, the application will have to abide a few constraints and limitation as follows:

I. This application is limited for the data latest by December 2010 (this is because of the limitation of sources from Bloomberg Terminal, Reuters Terminal and Management Information System of Bursa Malaysia website – list data of Public Listed Company in Bursa Malaysia)

   Example: If there is a new listed company, it may need time to get the Referential data from Information System Business Unit (ISBU) Department of Bursa Malaysia Berhad

II. There shall be only few parameters each alert can be changed, it is because some alert having a lot of parameters. It is easier to fix the parameters as well

III. Some of the complex alert may require times to generate the output

1.6 Pre-requisite

- ✓ Basic knowledge of finance
- ✓ Full list of Public Listed Companies (PLC) in Bursa Malaysia Berhad (latest by December 2010)
- ✓ Financial data from Bloomberg and Reuters

1.7 Tools

- ✓ Microsoft Visual Studio 2005, using ASP.net as web development platform
- ✓ Web browser Internet Explorer V6.0 and above
- ✓ Microsoft Excel 2003 and above
- ✓ Microsoft Access 2003 and above

1.8 Summary

From this chapter of introduction, the rationalization is to enable the target audience to understand and know their roles and responsibilities in an effective manner to use the application. With that, the success of this project will be realized throughout the project, FiST really meets the objectives and settle all the problem statement.

CHAPTER 2
LITERATURE REVIEW AND THEORY

2.1 Introduction

Chapter 2 will be more detail on the reason why young investors need in this application. It is to ensure the importance of using FiST will be successful transferred to the target user, which are young investors.

2.2 Investment Goals

Individual who are interested invest in stock market is so-called investors. As investors, they really want a satisfaction of gettilng profit from the PLCs that they were invested. *Investment goals are the financial objectives that investor wish to achieve by investing* (Gitman & Joehnk, 2010). It is important for investor to rolling back their money or in investment they called it return.

2.3 Analysing Financial Data

The motivation for investing in stocks is to watch your money grow. Unfortunately, for every story of great success in the market, there are many else story that do not end so well. Satisfaction investment is *that offers a level of expected proportionate to the amount of risk involved, also it must be sufficiently profitable – in the sense that investor would expect it to generate a return that is through some analysis* (Gitman & Joehnk, 2010).

2.4 The Internet Investor

(Ann, Tiffany & Susan, 2006), state that the *impact of Web site design and the activity of investments are based on consumers' trusting beliefs.* Consequently, the data that been provided by FiST should be important for young investors intentions, if the application can forecast the important information of PLCs and it will be good for the new generation of investors. As we all know, Internet is a search engine for the users to find out specific information. It is true that internet's viewer should take this opportunity to understand the trend of financial ratios for a company to invest. Besides, it is a new learning curve nowadays.

2.5 Financial Ratios Analysis

A financial ratio (or accounting ratio) is defined as the relative magnitude of two selected numerical values taken from an enterprise's financial statements, (http://encyclopedia.thefreedictionary.com). These words are often used in accounting term, especially when to evaluate the company's financial condition. Financial ratios are used to determine the stability of the company. Commonly, ratios always been benchmarked against something ratio related to it, for example the ratios always been compare or measure based on past performance, through Time trend (yearly basis) or Peer trend (company in the same sector).

Financial ratios play a big role especially to determine a systematic framework of financial statement analysis. If the research results in financial ratio analysis are to be useful for the decision makers, the results must be empirically general, (Timo Salmi and Teppo Martikainen, 1994). Hence, the important to understand financial ratios is important for young investors because this is the key to success especially if they want to maintain the profit by investing in stock market. A changeable decision in a company announcement, new project, joint venture and any press release, are all the possibility news that need to be compare and contrast with financial ratios that given by FiST.

Financial ratio analysis utilizes data from financial statement, thereby consent of information will help investor to have a good view regarding decision on buy, hold or sell. Financial Ratios allows for better comparison through time or between companies. All ten financial ratios of alert been using in FiST is been categorised from Table 2.4.1 until 2.4.5:

- **Short-term solvency or liquidity ratios**; the ability to pay short-term obligations
- **Long-term solvency or financial leverage ratios**; the ability to meet long-term obligations such as loans
- **Assets management or turnover ratios**; efficiency of asset use
- **Profitability ratios**; efficiency of operations and how this translates to the 'bottom line'
- **Market value ratios**; how the market values of the firm relatives to the book values

(Stephen A., Randoplh W. and Jeffrey Jaffe, 2010)

2.5.1 Categories of Financial Ratios / Alert Management

This user requirement and detail of the financial ratios / alert management are already been finalized by the developer to come out with these ten alerts, Table 2:

Financial Ratios Categories ALERT(s)
Short-Term Solvency or Liquidity Ratios 1. CURRENT RATIO (CR)
Long-Term Solvency or Financial Leverage Ratios 2. GEARING @ DEBT-EQUITY RATIO (GE)
Asset Management or Turnover Ratios 3. INVENTORY TURNOVER (IT) 4. MOVEMENT IN INVENTORY (MI)
Profitability Measure 5. NET PROFIT ATTRIBUTABLE TO EQUITY HOLDERS (NH) 6. NET LOSS AND NET CURRENT LIABILITY (NL) 7. OPERATING CASH FLOW (OC)
Market Value Measures 8. PRICE-TO-EARNINGS (PE) RATIO (PR) 9. GN3 – CONSECUTIVE TWO FINANCIAL YEAR END LOSSES (GC) 10. PN17 / GN3 / WATCHLIST – SHAREHOLDERS' EQUITY (SE)

Table 2: Financial Ratios / Alert Management Categories

2.6 Summary

In this chapter, the theory of why FiST exist were explained, the source where the developer get the user requirement from and the fundamental of ten financial ratios / alert management were shown. Main function of FiST is covering all the ten alerts or financial ratios.

CHAPTER 3
METHODOLOGY

3.1 Introduction

Chapter 3 describes the scope of study for FiST. Mainly this project has 4 stages that need to be completed. The 4 stages are:

- Planning Phase
- Analysis Phase
- Design Phase
- Testing Phase

The procedure for each phase above will be discussed below. Figure 2 shows the overall methodology of the project.

3.2 Throwaway Prototyping Methodology

This project will use throwaway prototyping to develop the project. Figure 1 below demonstrate the stages/phases in the methodology that been used. It is important to perform all the stages to make sure the entire task lists that been planned could be accomplish according to the schedule.

For early stages of the project, it is important to understand the entire concept that involved in the project. In a way to provide better understanding, an appropriate method will be used besides using the manual method. And for that, it will reduce lesser time to complete the project. For FiST, user requirement of the project was sent through email by Bursa Malaysia Berhad staff that involved or working in Corporate Surveillance Governance (CSG) Department. More or less this department is well-known with all PLCs and always having a consultation with them.

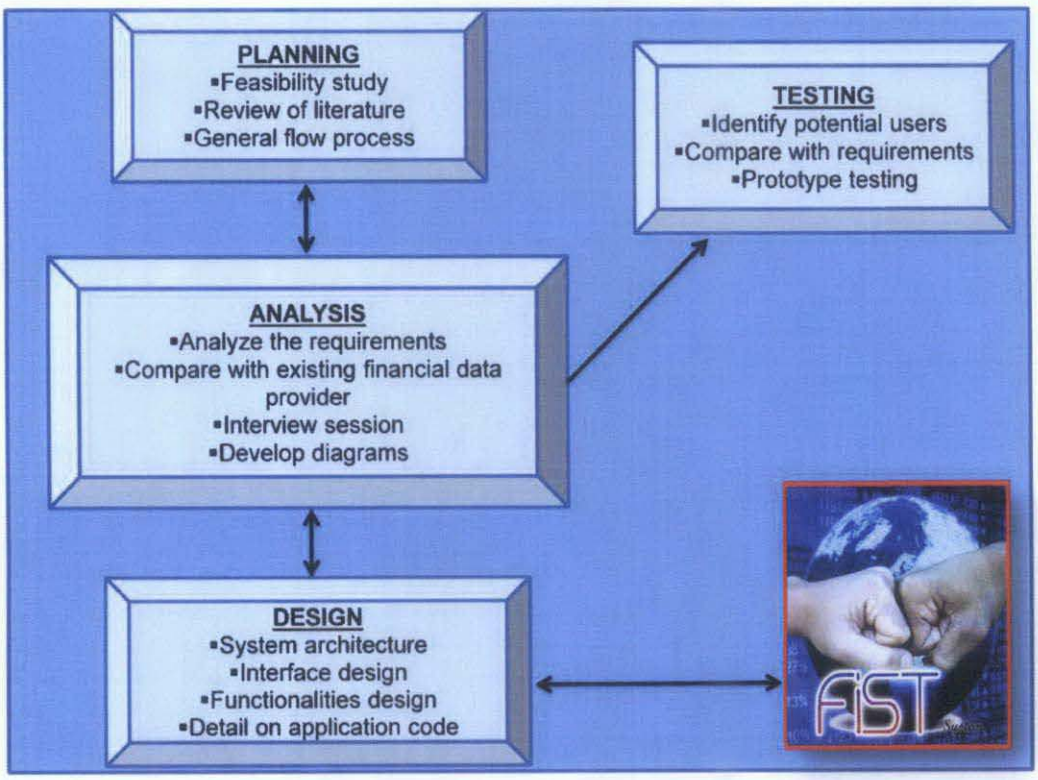


Figure 1: Edited methodology from, Throwaway Prototyping Methodology

3.2.1 User Requirement

User requirement of FiST been developed by Corporate Surveillance Governance (CSG) Department of Regulation Business Unit, Bursa Malaysia Berhad. The main purpose of the user requirement is to highlight the fundamental and technical document of the specification requirement for FiST. The details out on how features / functions of the financial ratios's alert should be working. Based on Table 6, it is about the functionalities of the alert based on year and quarter basis.

3.2.2 Planning

At the stage of planning, a feasibility study had to be done. It really desires the developer to be more aware that it will relate with a lot of information. The information had been compiled from a various sources such as Reuters, Bloomberg, Bursa Malaysia's website, Investment Portfolio Management subject and Corporate Finance subject are very important to ensure young investor. This phase had been structured well by the developer using Gantt Chart, developer follow the timeline that been schedule along the way to finish this FiST.

3.2.3 Analysis

Analysis phase, where some research on other financial data provider is conducted. Few common financial data provider had been viewed, based on Jupiter Online's website, Yahoo Finance, Google Finance, Reuters, Bloomberg and Bursa Malaysia's website. Some of the activities that already been done is interview session through email and also been supported by Corporate Surveillance Governance Department of Bursa Malaysia Berhad.

Pursue further activity in analysis phase is by creating diagrams for all process, flow and the technical execution for FiST. The illustration had been exposed using context diagram, use-case diagram, class diagram and windows navigation diagram.

3.2.3.1 Interviewing

An interview session had been done to get all the information related with the financial ratios. It is important for the functionalities for FiST. The information

details had been retrieved from Mr. Arshad Azizi Kamaruddin (Head Department of Surveillance Research & Development, Bursa Malaysia Berhad) with the help of Mr. Shashi and Mr. Bonis, both managers from Corporate Surveillance Governance Department and Surveillance Research & Development Department of Bursa Malaysia Berhad. They are working together to come out with the user requirement for FiST.

By having all the details of the financial ratios, it will surely easier for the developer to give out the output to the user. Due to the complicated of the formulation (financial ratios), it needs time and discussion to clear all the logic that would help to get the output of the application from FiST. For that reason, one of the method been used are through phone and email discussion. Further notification and explanation been cleared with collaborator-supervisor, Mr. Md. Akhir Mohd Sharif (corporate finance lecturer). It is important to follow the guide from the expert because FiST is targeted to achieve the objective of the project.

Some of the specification also been discuss through the interviewing session, which would be include in the application, such as:

- Capability of the application to make an output in Microsoft Excel format. This to ensure the investor can manage to use the data wisely through their own analysis.
- The application provides the parameter change button that makes the user can control the limitation of the ratio based on current situation. As an example, investors need to change the parameter because it is a factor to consider such inflation and few factors in investment environment.
- Audit trail: to track the activity of the investor when they using the FiST

3.2.4 Design

Design phase involves the design of the interface and system architecture (functionalities) of the project. At this particular phase, the design need to be show as the best design to ensure the concept is still in the right track. Designing of the

interface consists of the main page and the application functionalities. It is important to have an interactive interface to guarantee the sharing information or knowledge for young investors is clear, interactive and friendly to use by the user. The interface of FiST is one of the activities in the design phase.

3.2.4.1 Financial Data Flow

These are the general idea on how the data from Reuters, Bloomberg and Bursa Malaysia's website been integrated from different sources and how the extraction process happened. Figure 2: The flow process of financial data.

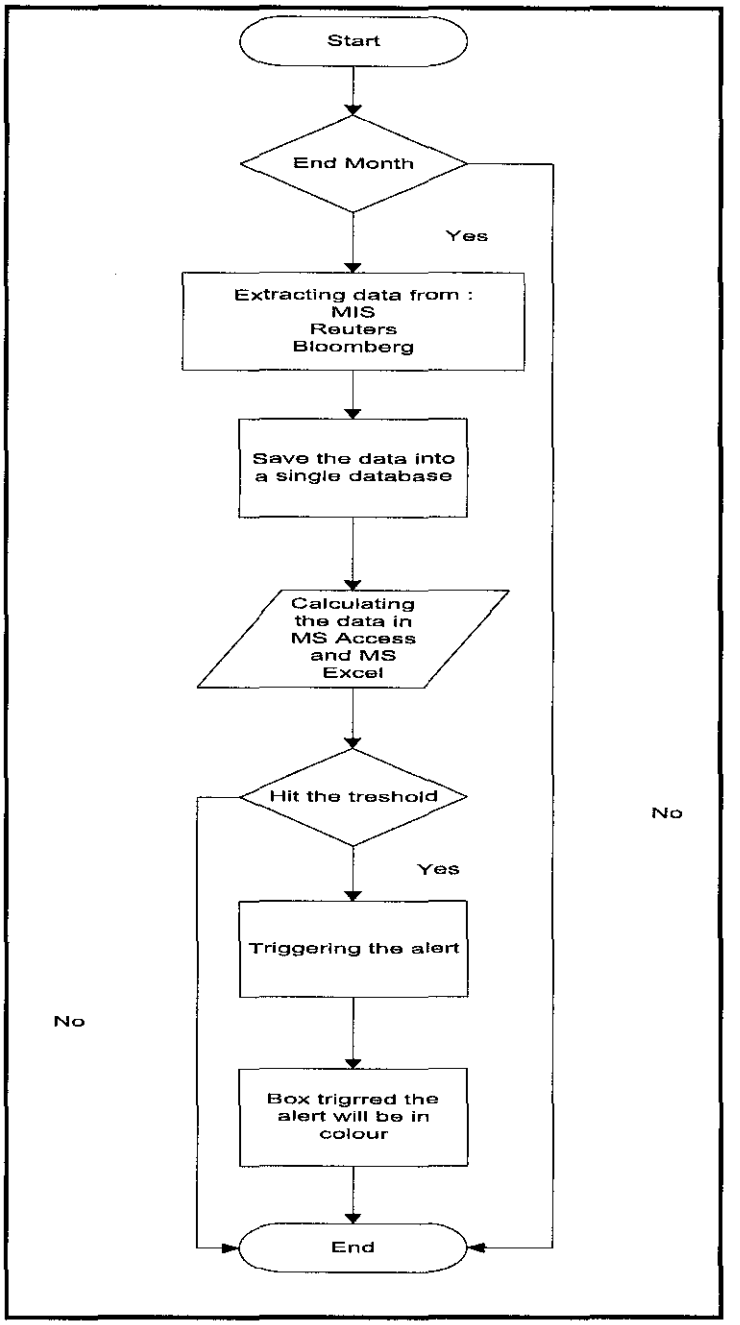


Figure 2

3.2.5 Testing

Testing phase of FiST prepare the process of testing the application. This process need to be documented and for that testing script is the solution. First thing first, is to identify the potential user such young investors.

The main purpose of prototype testing is to check whether this application meets the requirements and achieve the objective of the project. The testing process are also been divided into two part, internal that involved supervisor, collaborator-supervisor and between colleagues in UTP and others universities as well. Another one is for the external testing process, it will be tested by expert in the industry such as broker, existing investor and maybe representative from Bursa Malaysia Berhad.

3.3 Summary

Chapter 3 gives detail more on throwaway prototyping methodology. This method could provide less time constraint plus it provides the application to interact with others and it is a good for the project as a whole for the reason that it will minimize risk that will be at the stage of the end user. Following with the diagram, flow process and this is why Throwaway Prototyping Methodology is been used for FiST because constantly development of the application need to be done from time to time according to the task.

CHAPTER 4
RESULT AND DISCUSSION

4.1 Introduction

This chapter will more focus relatively with methodology chapter, where the the entire questionnaire / survey that had been done, diagrams and interface been mentioned earlier will be shown here.

Once the FiST period reach seventh week of development process, the prototype of the financial system was taken out to be tested on their effectiveness and efficiencies to the young investor and few lecturers that involved. This chapter presents the current findings of the project. The discussion will focus on the ten financial ratios. It includes alert's information, formulation and source of the data needed. Besides, the prototype of FiST prototype interface also been designed.

4.2 Questionnaire Analysis

A questionnaire survey entitled "Investment in stock market for young investors: Financial Indicators Surveillance Tracker (FiST)" was distributed to 48 students. The following shows the results of the survey conducted.

The intention of the questionnaire is to gather information on future young investors to ensure they know which the best information is and whether FiST is really efficient to be executing in the internet. The questionnaires consist of 7 questions all together, that covers young investors' perception, exposed by showing Figure 3 until Figure 9:

1. Is it true that you face problem in making decision for your investment portfolio?

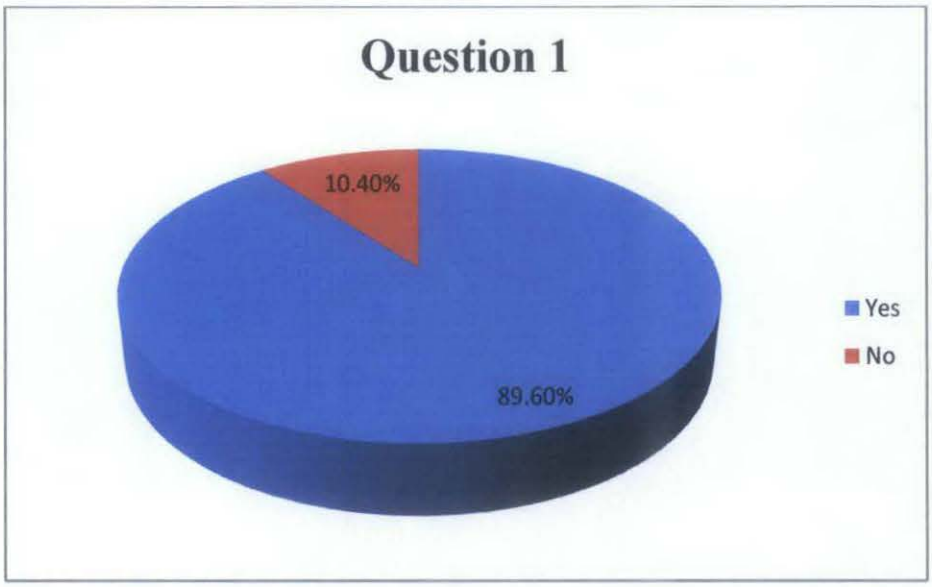


Figure 3 : Pie Chart in 3D

What had been answer by most of the student is they agree (89.60%) that to make a decision for an investment needs some knowledge. For that, FiST will provide a good platform for those young investors to learn on how to start their investment and in the future can make their own portfolio.

2. How do you calculate financial ratio of a company?

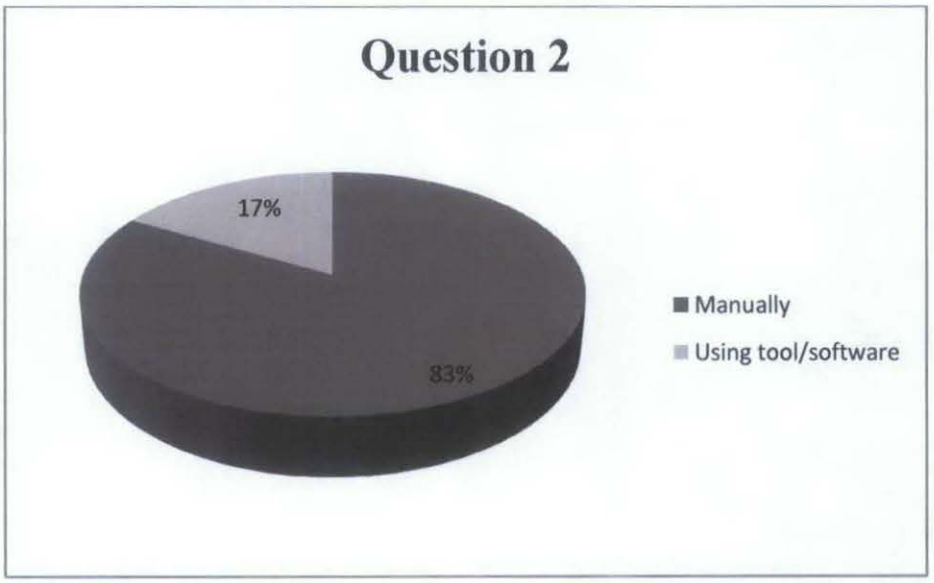


Figure 4 : Pie Chart in 3D

The majority of respondents are doing their financial ratio manually, that represent 83% instead of using tool and software, which only make an output of 17%. It is really effective to and accurate to have an application such FiST to provide the financial ratios automatically. It is also will ensure an accuracy of a calculation.

3. (Skip this question if your answer for question 2 is manually) Is there any weakness of tool/software that you are using currently? Please specify.

These are few responses from the student:

- Can be utilized manually (arithmetic)
- Not too accurate
- Take too much time
- Does not have real time information/updated version

Almost all of the respondents are having a problem, supposedly a tool or a software will make an advantage for the user to use it. Again, this is the opportunity for the developer to build a informative platform for young investors.

4. What is the relevant feature that a financial tool/software should have? You may tick more than 1.

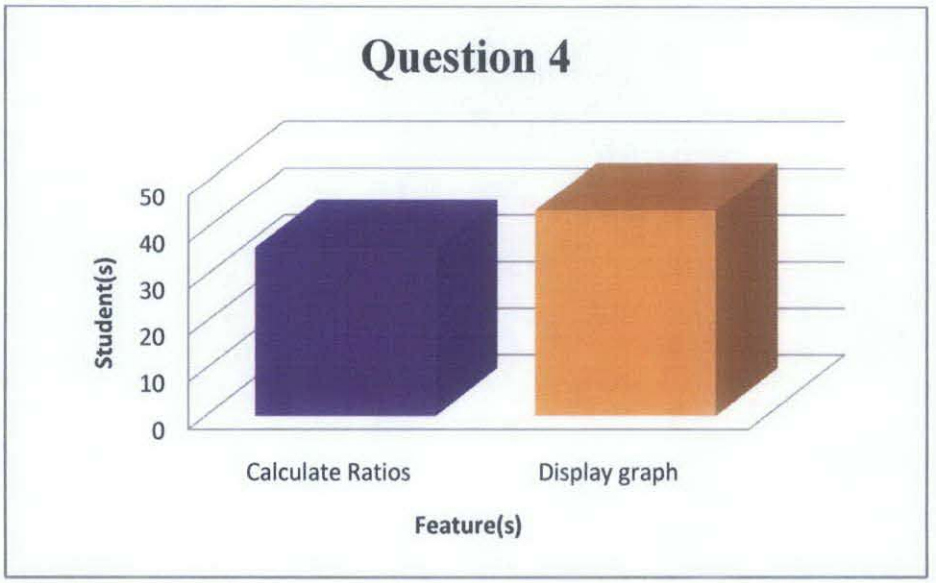


Figure 5 : Column Chart in 3D

Out of all the respondents, most of them prefer to have the feature that can calculate ratios and display a graph. For the time being, FiST just provides only automation on calculating the financial ratios only. For the future development, FiST could provide with an addition on the functionalities to display the graph.

5. Do you agree that current financial tool/software is not sufficient in helping you make decision?

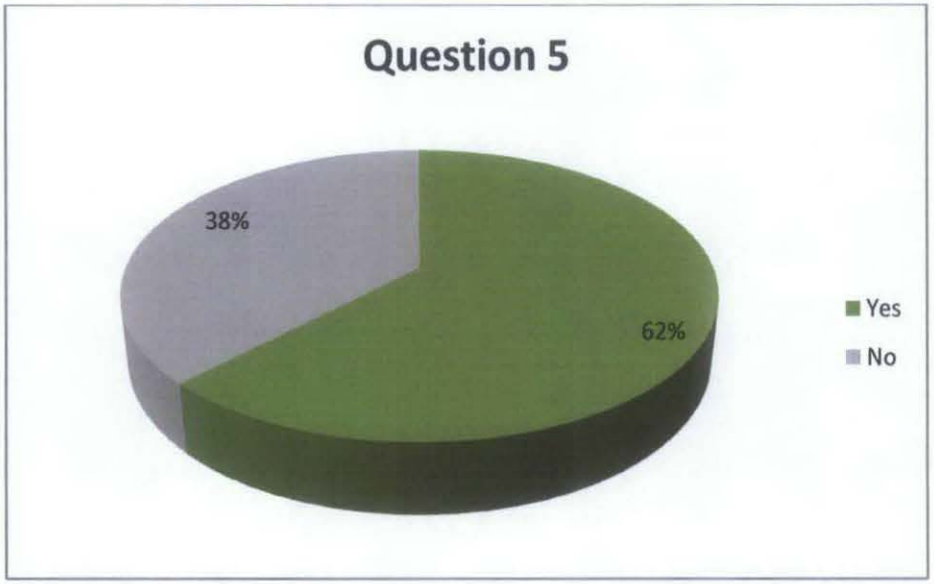


Figure 6 : Pie Chart in 3D

A significant percentage of 62% of all the respondents agree with the question. There must be a good application to ensure it will be easier for them to start invest in stock market.

6. Do you need an application that can help you in deciding on financial decision?

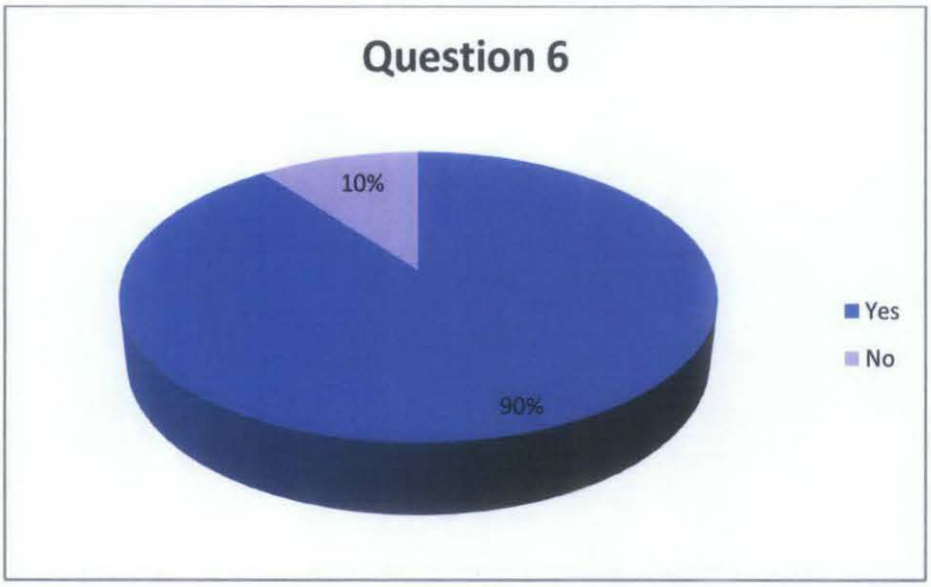


Figure 7 : Pie Chart in 3D

The overwhelming majority of 90% respondents wanted to have an application such FiST. So, it is significant to do this application and would be good to be used by young investors as soon as possible.

7. What are you expecting from an automated financial calculation for decision making, besides the calculator function?

- To be able to take any account not only the quantitative data but also to reflect the influence from qualitative data
- A system that could raise issues regarding future expenditure prospect. Example: how much in a year that I have spent on monthly payment.
- Maybe some explanation about the graph display
- Expecting good and accurate result with precise answer
- Give the more accurate decision and display graph and updated info or tips
- To calculate based on monthly and annually
- Can predict the future situation based on trusted data given
- Give pro and con -profit n time margin -updated with government policy i.e tax rate,etc
- It can give some advice / recommendation on what are the next steps to take.

- No more simple mistakes count the number
- Arrangement for set of decision and problem solution which can be used for future and a analytical tools
- An provide best investment with convincing justification
- Historical data that related to the matter
- It would be better if the system could show and explain on how to calculate the ratios. It will somehow can also lead to a learning process
- Risk Analysis Aid
- Should be easy to understand and give recommendation
- Giving me the ultimate return without a single penny lose
- Powerful enough to give detailed explanation, so that student doesn't need to elaborate more
- Simple to understand even for a beginner who know nothing about investment
- Have some information for those who not understand the basic financial ratios
- From the figure and graph, there will be some comment about the figure just clicking the button, there will be some comment to view about the figure wish to have that
- Provide decision and choices of investment products
- To automatically calculate the beta for each securities and giving the information of weight for every securities (advicing percentage of money to be invest in a security

The responses to the question are really related with the objective of doing FiST. Thus, FiST is an application that will ensure the increasing number of young investors in the future.

4.3 Diagram

The diagrams below are symbolic representation of information according to some visualization technique through context diagram, use-case diagram and class diagram. It is the output for the analysis phase and came from methodology been applied in FiST. Each of the diagrams had specified the visualization of its information and specifies visual display for the purpose of FiST.

4.3.1 Context Diagram

This context diagram, Figure 8 exposed to the user and developer that fundamental of FiST are from various sources and existing of the user is to choose the financial ratios that related with what analysis would be done by the investor. The diagram will be explained the details:

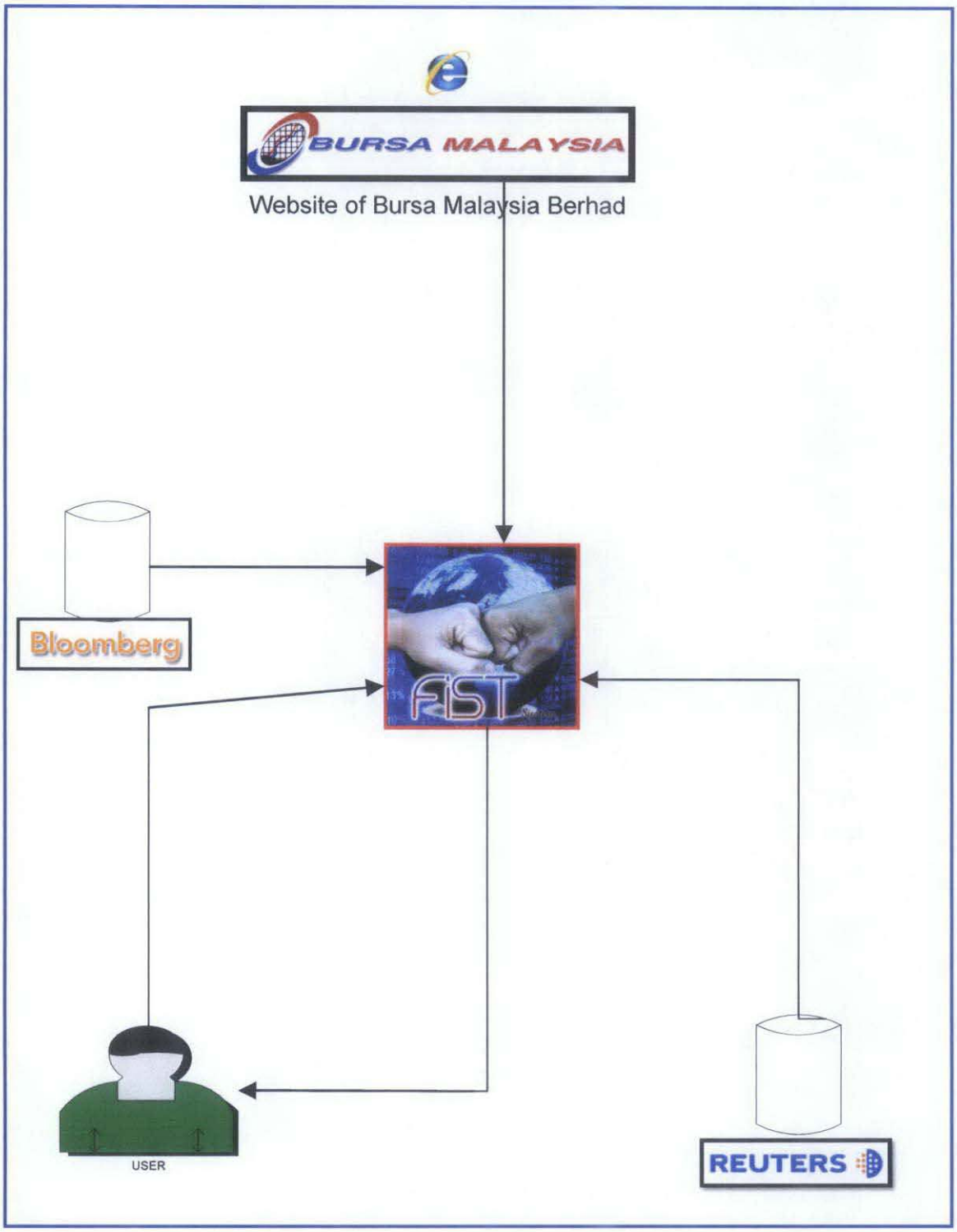


Figure 8

4.3.2 Use-case Diagram

From the use case diagram, Figure 9: show the normal user and developer of FiST have their own specific admission on the application:

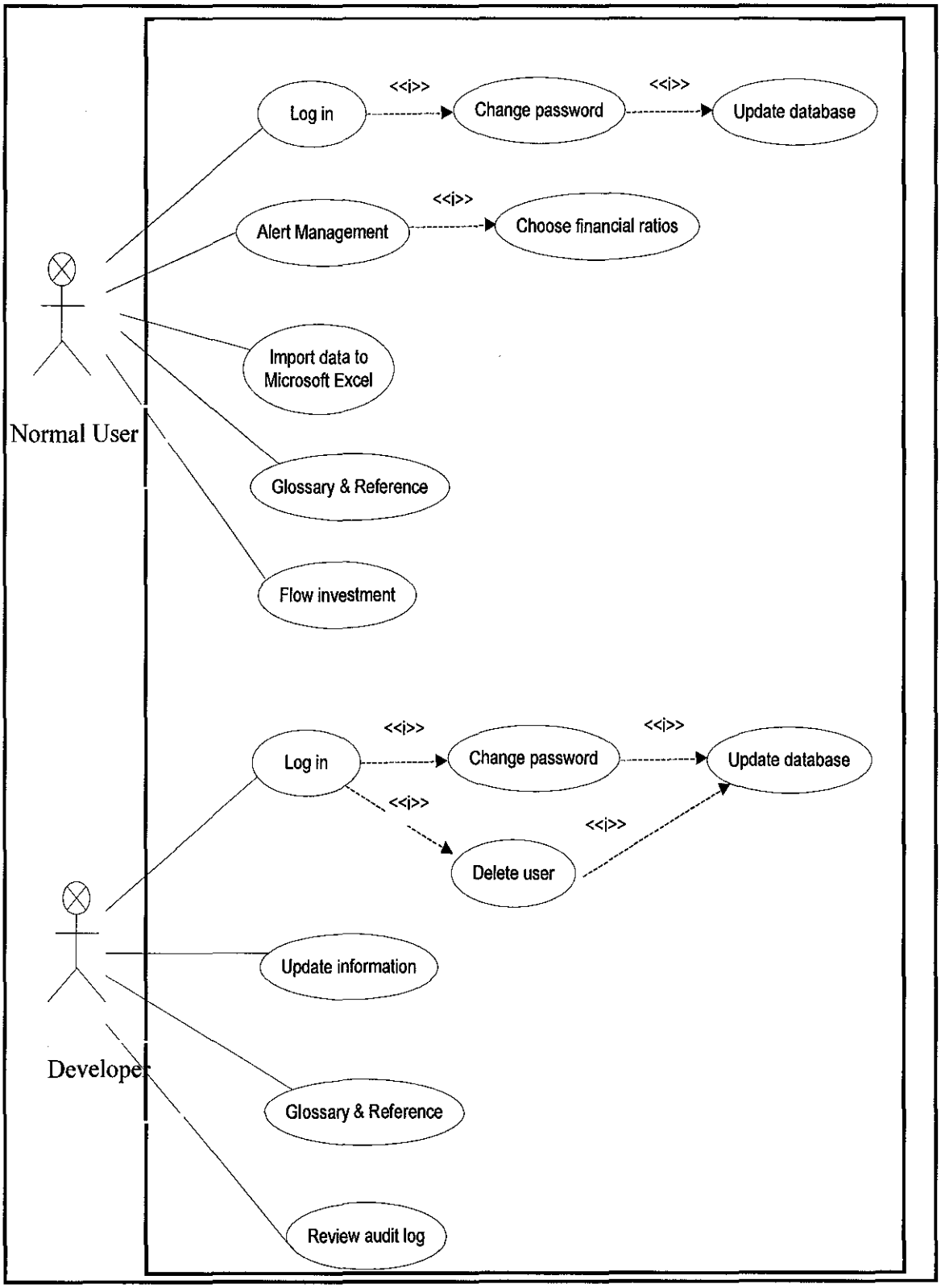


Figure 9

4.3.3 Class Diagram

Figure 10: Class diagram below shown the details of the declaration in the database structure that also been applied in Microsoft Access.

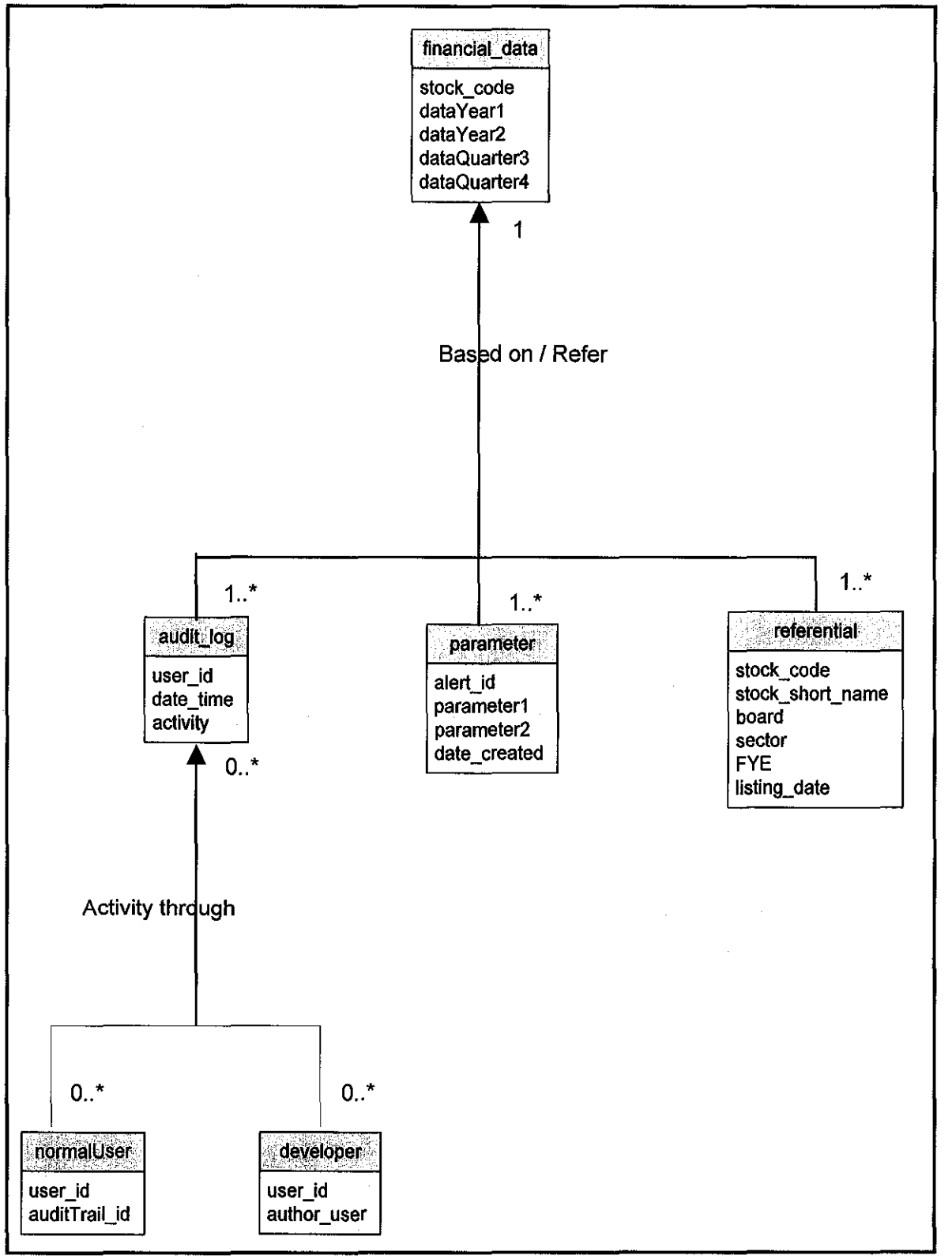


Figure 10

Classes are depicted as boxes with three main sections, the top one indicates the function of the class. Consist of financial data from financial data provider of Reuters and Bloomberg. The middle one list the attributes of the class, where each of the box having a different task for the FiST, that are audit log, parameter management and referential data. The third one lists detail of one of the attributes, audit log. The boxes capture the different activity from two different users in the application that are normal user (investors) and the developer (programmer).

4.4 Prototype Design

Prototype design of FiST had been developed with Microsoft Visual Studio 2005, using ASP.net as web development platform. All the basic function already can be function well and as an addition in the future there will be some rectification based on prototype comments from various perspectives. Figure 11: Show the Windows Navigation Diagram for FiST. It is the platform for user activity that enables the user to retrieve specific page.

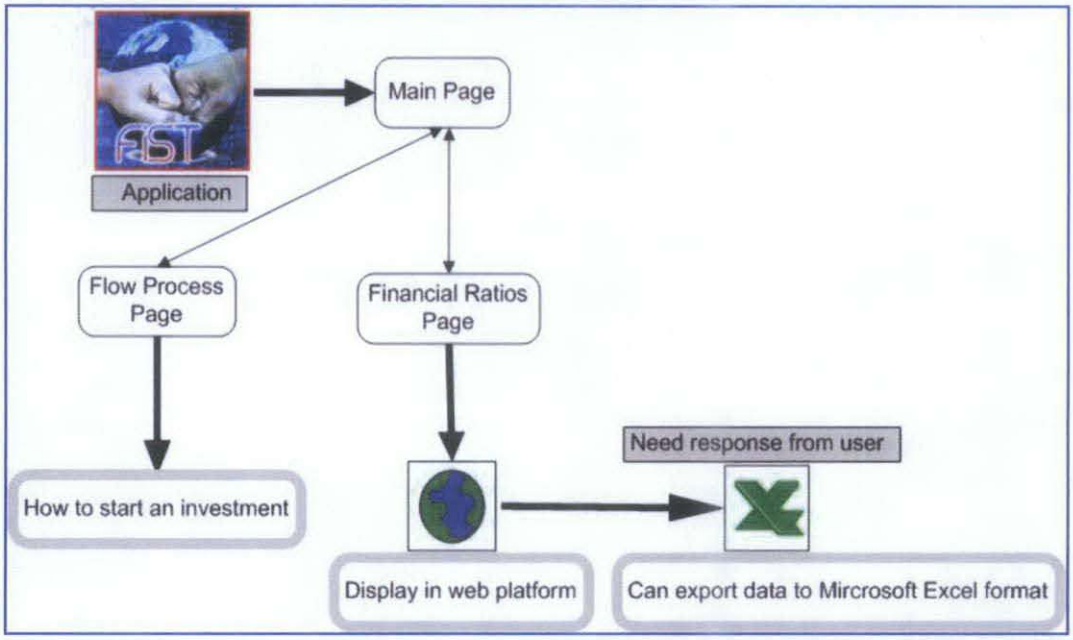


Figure 11

4.4.1 Database Structure

Database structure is based on class diagram that shown the details of the declaration in the database inside Microsoft Access, Figure 12: FiST tool for the database.

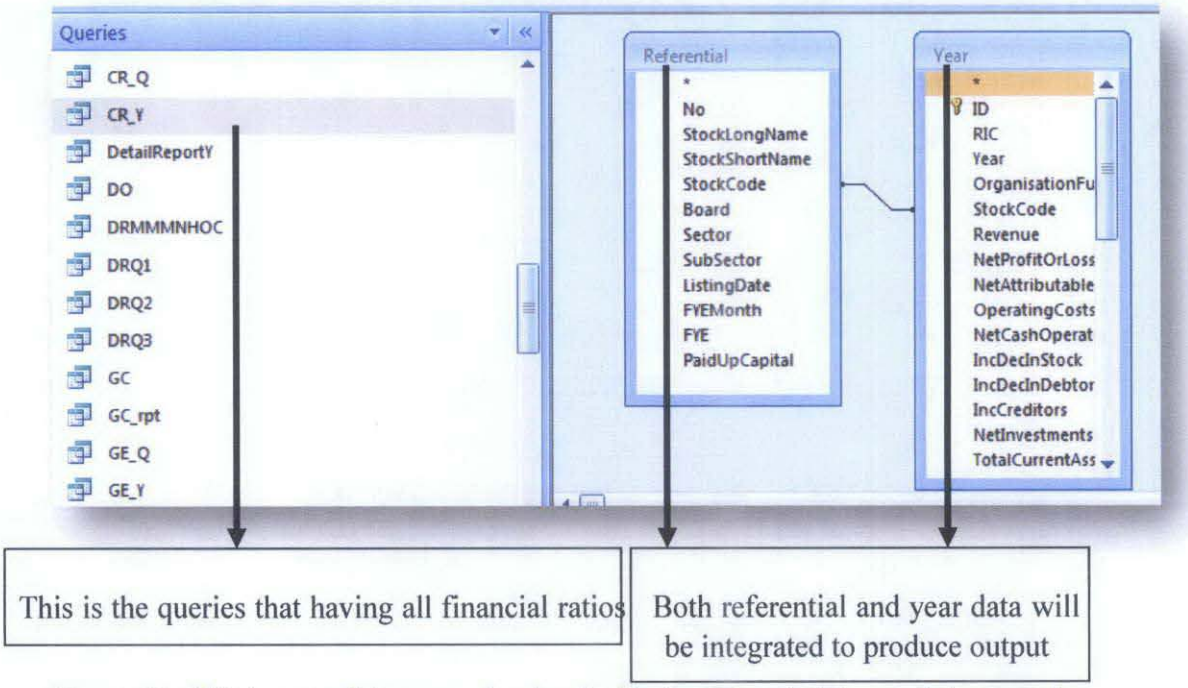


Figure 12: This is one of the examples for the Design View in Microsoft Access of FiST's database

4.4.2 Interface Design

Figure 13: The existing FiST is edited using Microsoft Visual Basic, fundamental design of Web-based as the main platform.

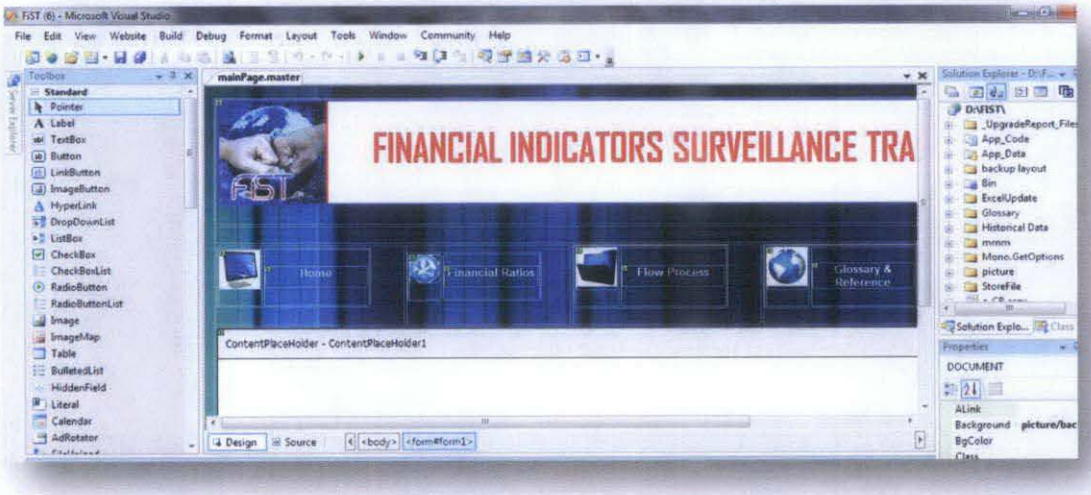


Figure 13: Microsoft Visual Studio, using ASP.net as web development platform

As been mentioned earlier, by using this Visual Basic as the main platform the developer manages to compile the application as an output in web browser of Internet Explorer.

4.4.3 Main Page

Figure 14: The main or home page of FiST.

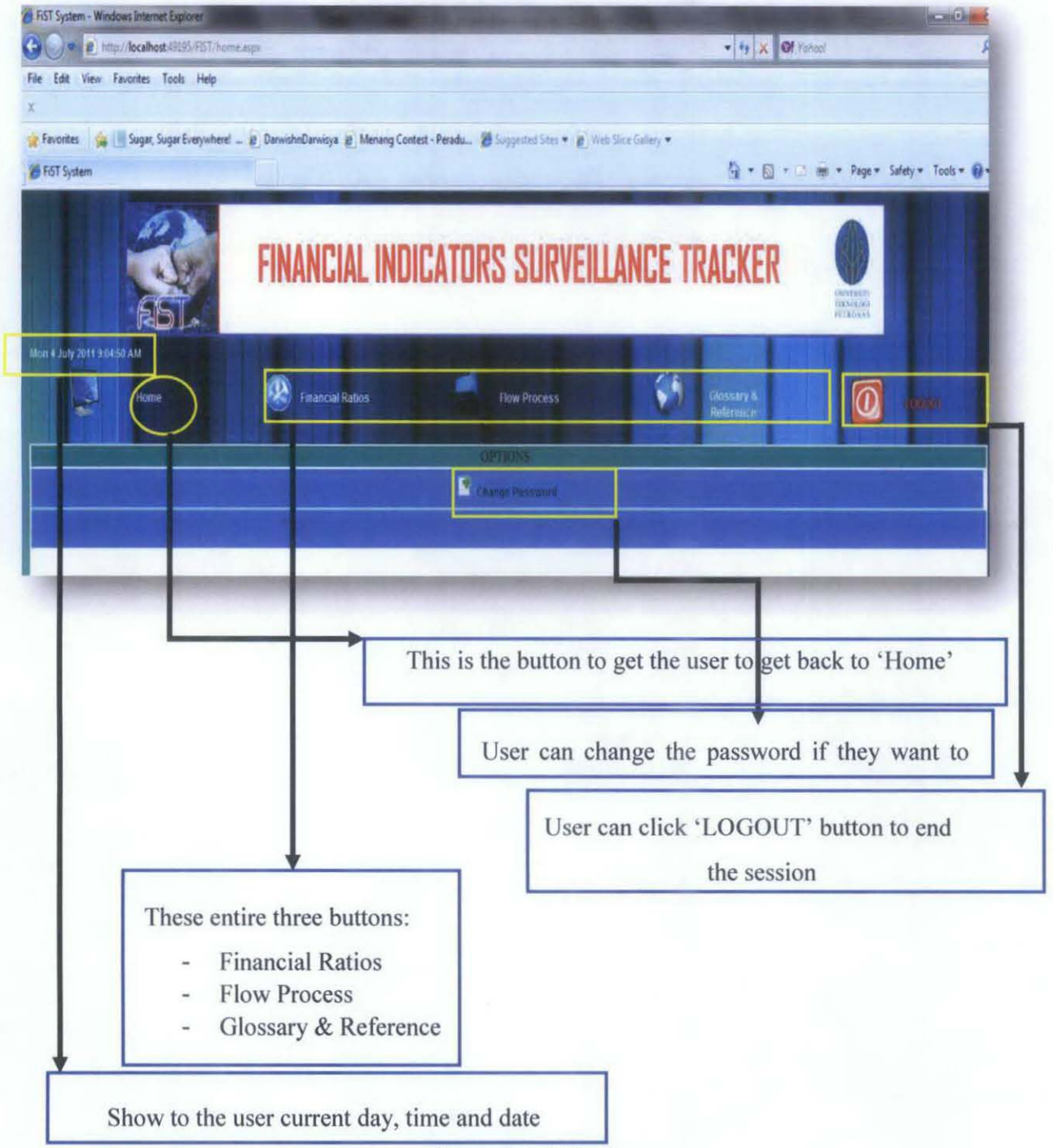


Figure 14: Main Page

4.4.4 Flow Process Page

As a new investor, user needs to understand the flow process of investment. Figure 15: Show the flow process for the investors, on how to start investment.

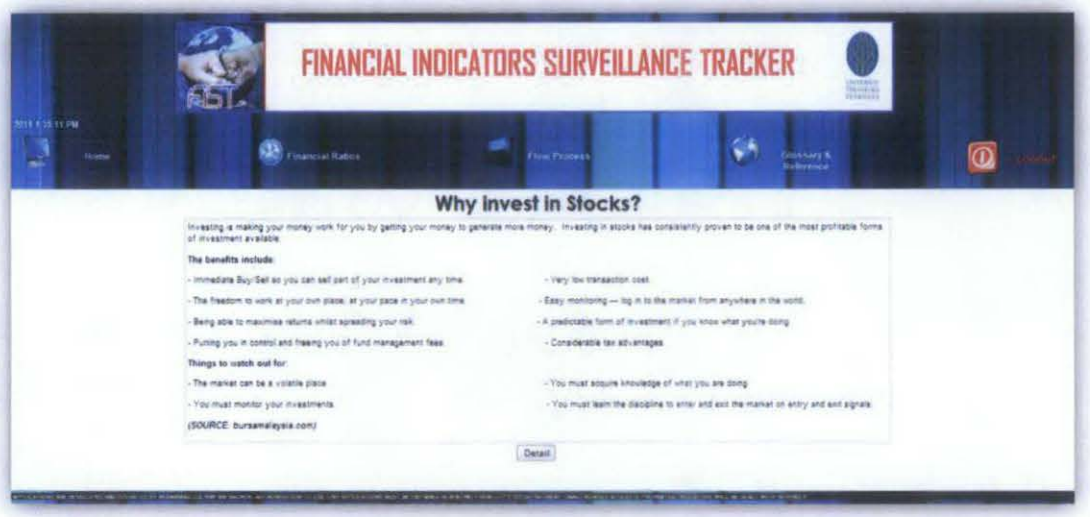


Figure 15: Flow Process on How to Start Investment

4.4.5 Financial Ratio / Alert Management Page

Figure 16: Ten financial ratios / alerts management.

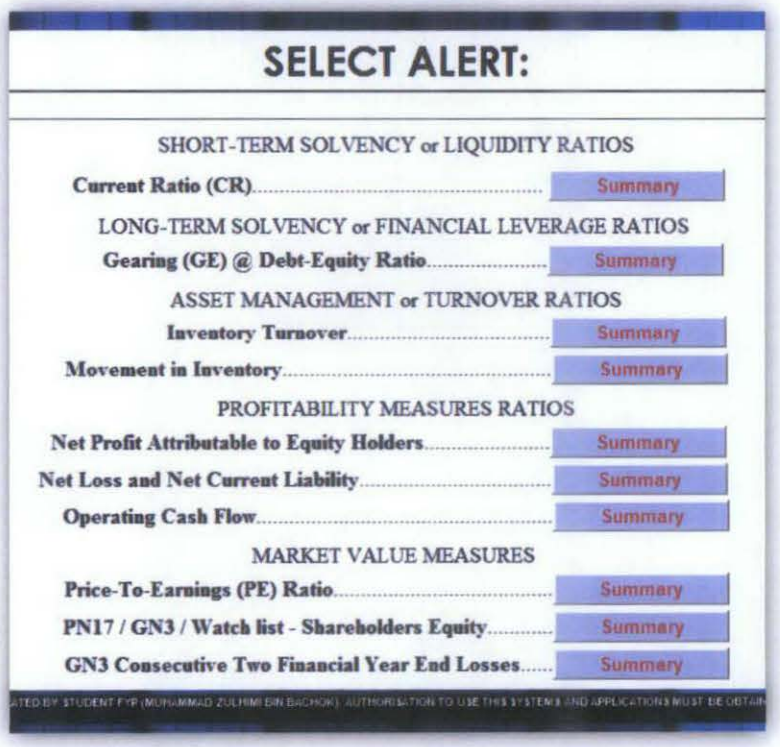
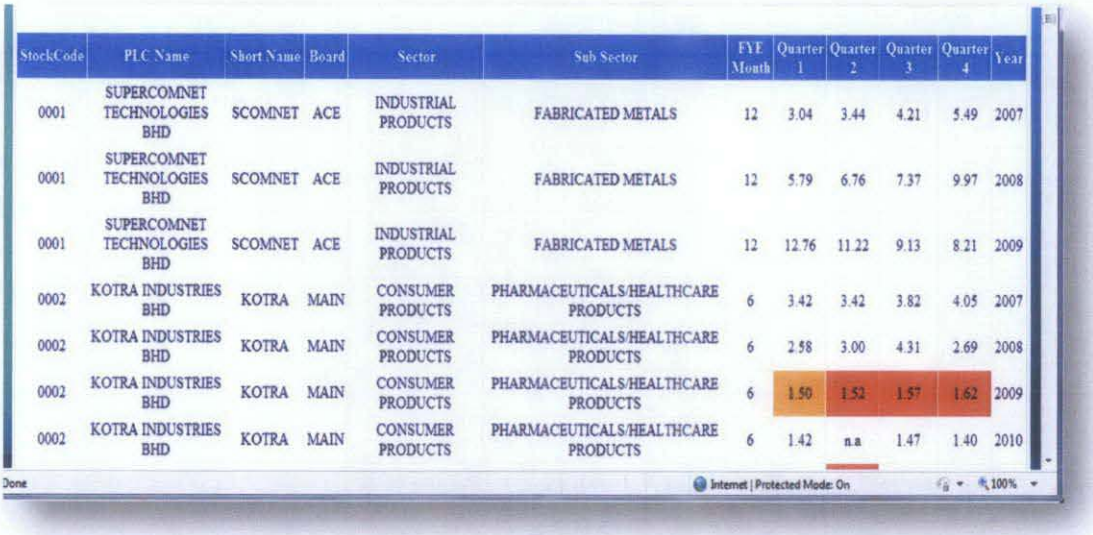


Figure 16: User can select any alerts related with their own analysis

From the alerts above, the output could be in two formats:

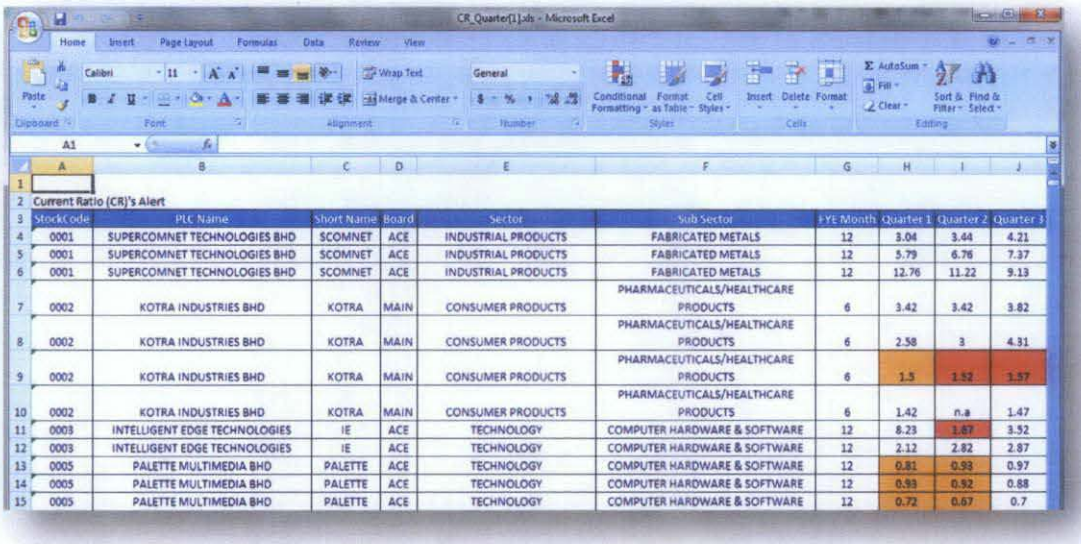
1) Figure 17: In web-based platform of FiST.



StockCode	PLC Name	Short Name	Board	Sector	Sub Sector	FYE Month	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Year
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	3.04	3.44	4.21	5.49	2007
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	5.79	6.76	7.37	9.97	2008
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	12.76	11.22	9.13	8.21	2009
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	3.42	3.42	3.82	4.05	2007
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	2.58	3.00	4.31	2.69	2008
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	1.50	1.52	1.57	1.62	2009
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	1.42	n.a	1.47	1.40	2010

Figure 17: Output of FiST (Financial Ratio) - Those Company that in orange and red colours of their financial ratios are the weak company

2) Other functionalities included in FiST is that, there is a button to convert the output to Mircrosoft Excel format. Figure 18: Output of FiST in Microsoft Excel format - Investor could make an analysis from this.



Current Ratio (CR)'s Alert

StockCode	PLC Name	Short Name	Board	Sector	Sub Sector	FYE Month	Quarter 1	Quarter 2	Quarter 3
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	3.04	3.44	4.21
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	5.79	6.76	7.37
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	12.76	11.22	9.13
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	3.42	3.42	3.82
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	2.58	3	4.31
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	1.5	1.52	1.57
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	1.42	n.a	1.47
0003	INTELLIGENT EDGE TECHNOLOGIES	IE	ACE	TECHNOLOGY	COMPUTER HARDWARE & SOFTWARE	12	8.23	1.87	3.52
0003	INTELLIGENT EDGE TECHNOLOGIES	IE	ACE	TECHNOLOGY	COMPUTER HARDWARE & SOFTWARE	12	2.12	2.82	2.87
0005	PALETTE MULTIMEDIA BHD	PALETTE	ACE	TECHNOLOGY	COMPUTER HARDWARE & SOFTWARE	12	0.81	0.93	0.97
0005	PALETTE MULTIMEDIA BHD	PALETTE	ACE	TECHNOLOGY	COMPUTER HARDWARE & SOFTWARE	12	0.93	0.92	0.88
0005	PALETTE MULTIMEDIA BHD	PALETTE	ACE	TECHNOLOGY	COMPUTER HARDWARE & SOFTWARE	12	0.72	0.67	0.7

Figure 18

4.4.6 Prototype Comments

Throughout the execution project there are some comments and feedbacks occur which based on current output available, the application prototype had already been commented by various panel below:

I. My supervisor: Mr. Khairul Shafee Kalid

II. My collaborator supervisor: Mr. Md. Akhir Mohd Sharif

III. Young investor

(Student UTP that already involved with investment of stock market)

These are few comments that been found out:

1. Developer need to really understand that the main user of FiST is young investor, new generation or level of beginner in investment does not understand much about the stock market and how to start invest in Public Listed Companies (PLCs) that been listed in Bursa Malaysia board. FiST, need to be really informative, this to ensure the new investor could have the right decision to make.
2. Developer can be more interactive with the user by providing pop-up window that really can explain the details of the financial ratios. FiST provides the data that show some colours to differentiate a company data that really in bad performance.
3. Login page is very common, developer need to find out that is it necessary to insert login page inside FiST.
4. Developer could enhance the strength of FiST by having more information to the young investor. The idea is that to have pie chart, graph or anything related to make user understand easier on the way data be presented. Or else provide eas y access information.
5. To ensure the analytical analysis can be easy been done, the presentation of data need to be horizontal instead of vertical style.

4.5 Summary

In this chapter, it is a wrapping up on the result of an output that already been developed by the developer throughout seven weeks developed FiST.

CHAPTER 5
CONCLUSION AND RECOMMENDATION

5.1 Introduction

Chapter 5 brings to a close of what will be given by FiST to the user, which includes FiST benefits and advantages. Other financial data provider that already available in the internet will find out that FiST is also having a lot of function to the user especially young investors.

5.2 Project Conclusion

The aim of developing this project is to become a financial application provider by using web-based platform of Microsoft Visual Basic (Asp.net or similar with existing financial data provider). The variation of financial ratios will differentiate the effectiveness of the PLCs comparing the good performance company that had been listed in Bursa Malaysia. The strength of the company will be discovered throughout the informative presentation of data to the young investor.

User requirements are gathered based on the interview sessions conducted with users from Bursa Malaysia Berhad through email and phone. Bursa Malaysia Berhad as the main reference to ensure the developer can come out with this application that can be used for young investors. FiST could give clear idea on how to trace the market with the analysis been made. It is easy to use and is believe to interact with the user with the environment of investment just when using the application.

FiST provides a better platform for young investor that includes comparison of financial ratio data between all PLC in Bursa Malaysia. By having this application, there is a possibility to increase the number of young investor in Malaysia. Moreover, FiST is a new platform that facilitates young investor to understand and involve actively in stock market industry by knowing the flow on how to trade actively.

5.3 Recommendation

The inspiration of doing FiST is basically to make the young investors understand financial ratios and assist them in make their own analysis. Nonetheless, it is recommended to do integration database by combining the financial data provider from Bloomberg and Reuters to become a better idea of solutions. Instead of just using both financial data, FiST come out with comparison between Public Listed Companies (PLCs) listed under Bursa Malaysia.

By having this application, it will increase the excitement of invest shares in stock market. To invest share in stock market environment, investor needs to know what actually they are doing. And that is the main purpose of FiST to provide a better platform for young investor to really convince on what they are doing. When using FiST, the user can see an improvement of decision making in finding the best PLCs to invest. Several things can be done in order to improve the project:

- Make sure the entire rectification problem that had been notified from the testing process done frequently. Therefore repetition of issues or errors could be avoided.
- The performance of FiST is based on the accuracy data that will be good for user to have updated data from Reuters, Bloomberg and Bursa Malaysia's website.
- Study more detail such as the financial data provider that already existed. Besides, share the information of FiST to those people who are really expert in taught young investor to invest such as broker to ensure those people can comment in positive and effective way.

5.4 Summary

The final chapter of FiST clarify the conclusion on the application plus it also includes the recommendation been done from the user, supervisor, collaborator supervisor and UTP's colleagues.

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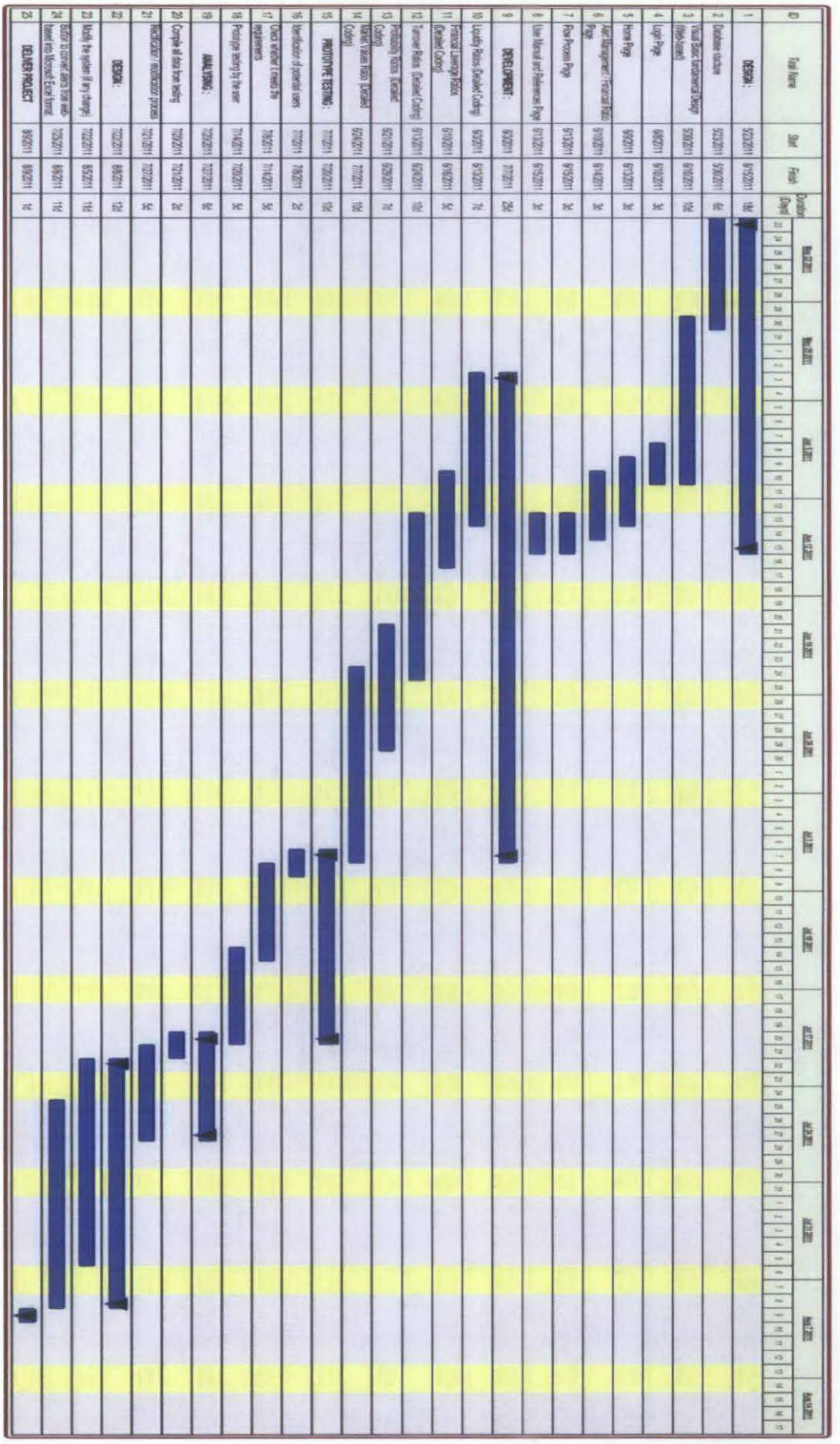
APPENDIX A

PROJECT GANTT CHART

FYPI and FYPII

No	Activities	Months								
		FYP I					FYP II			
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	**Planning**									
	Choose topic									
	Preliminary research on topic									
	Specify scope									
	Feasibility analysis									
2	**Analysis**									
	Understanding concepts									
3	**Design**									
	Diagram Design									
	Flow Chart									
	Prototype Design									
4	**Development**									
	Data Extraction									
	Integration data (Database structure)									
	Functionalities									
5	**Testing**									
	Unit Testing									
	Integration Testing									
	Process Testing									
	Acceptance Testing									

Detail Gantt Chart FYPII, development.



APPENDIX B

TESTING SCRIPT

No.	Test Case ID	Description	Scenario	Condition	Test Procedure	Test Data			Expected Result	Actual Result	Status		Remark
											PASS ( )	FAILED (X)	
1	Log In	Key in USER ID and PASSWORD	S1	Using USER ID that already been registered	User must registered with the admin first				User must be able to view the FIST System Web Application				
			S2	PASSWORD for the first time is fixed by the user	Password must be assigned first				User must be able to view the FIST System Web Application				
		Different type of user	S3	Admin	Change Password				Message box will appear: 'Successful change password'				
					Add User				New user will be added				
					View/edit user				Any changes been made will successfully save				
			S4	Normal User	Change Password				Message box will appear: 'Successful change password'				
2	Alert Management	User select the required alerts	S5	Select Period : Annual	Click Generate button				Alert will be triggered (coloured) based on the default parameter and user be able to export to excel				
			S6	Select Period : Quarter	Click Generate button				Alert will be triggered (coloured) based on the default parameter				
3	Glossary	allow user to view type of alerts and its requirement	S9	Select the required alert to view its details	Click selected alert				The details of the alert will appear				

APPENDIX C

ALERTS MANAGEMENT / FINANCIAL RATIOS

FINANCIAL RATIO(s) / ALERT(s)	
Purpose of the Process	Requirements Description
CURRENT RATIO	
To measures whether or not a firm has enough resources to pay its debts over the next 12 months	A financial ratio that measures whether or not a firm has enough resources to pay its debts over the next 12 months
GEARING @ DEBT-EQUITY RATIO	
To define ratio of a company's level of long-term debt compared to its equity capital	A financial ratio indicating the relative proportion of shareholder's equity and debt used to finance a company's assets
INVENTORY TURNOVER	
To show how many times a company's inventory is sold and replaced over a period	A measure of the number of days the inventory is held by the company before it is sold
MOVEMENT IN INVENTORY	
To know a list of goods and materials	A list for goods and materials available in stock by a business
NET PROFIT ATTRIBUTABLE TO EQUITY HOLDERS	
Calculating the net gain or loss and measure how profitable the company is over a period of time	Profit Attributable to Equity Holders (PAEH) is the profit after reducing Interest, Tax, Amortization, Depreciation and Minority Interest

NET LOSS AND NET CURRENT LIABILITY	
To know when expenses exceed the income produced	Net Loss: The loss after reducing Interest, Tax, Amortization, Depreciation and Minority Interest. Net Current Liability: When the current liability exceeds the current assets
OPERATING CASH FLOW	
To finance a company's amount of cash	The amount of cash a company generates from the revenues it brings in, excluding costs associated with long-term investment on capital items or investment in securities
PRICE-TO-EARNINGS (PE) RATIO	
To measure the average number of days that a company takes to collect revenue after a sale has been made	A financial ratio that illustrates how well a company's accounts receivables is being managed
GN3 – CONSECUTIVE TWO FINANCIAL YEAR END LOSSES	
To keep track of ACE Market which losses against Shareholder's Equity for 2 consecutive years	ACE Market which : □ Incurred an aggregated loss for 2 full financial years □ Loss 2nd financial year ≥ 50 % of 1st year loss (previous year) □ Shareholder equity for 2nd financial year ≤ 50 % of the Company's paid up capital
PN17 / GN3 / WATCHLIST – SHAREHOLDERS' EQUITY	
To keep track of the changes in shareholder's equity against paid up capital	The shareholders' equity of the listed issuer on a consolidated basis

APPENDIX D

SUMMARIZATION OF FINANCIAL RATIOS

No	Yearly Basis	Quarterly Basis	Financial Ratios (acronyms)
1	/	/	Current Ratio (CR)
2	/	NA	GN3 Consecutive Two Financial Year End Losses (GC)
3	/	/	Gearing (GE) @ Debt Equity Ratio
4	/	/	Inventory Turnover (IT)
5	/	/	Movement in Inventory (MI)
6	/	/	Net Profit Attributable to Equity Holders (NH)
7	/	/	Net Loss and Net Current Liability (NL)
8	/	NA	Operating Cash flow (OC)
9	/	/	PE Ratio (PR)
10	/	/	PN17 / GN3 / Watch list – Shareholders' Equity (SE)

APPENDIX E

TECHNICAL REPORT OF FIST

FINANCIAL INDICATORS SURVEILLANCE TRACKER

Muhammad Zulhimi bin Bachok

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Abstract - **To get a lot of money, it needs a lot of hard work. Now it is time to make your money work for you. World of investment, have a thousand product to choose. Nowadays, young generation are very lucky to have an updated technology environment especially internet that currently connected with all things that people need as their interest. To invest in stock market, investor such as young investor needs to have the knowledge and financial circumstances. As a solution, Financial Indicators Surveillance Tracker (FiST) is a web-based platform providing young investor to start learning on how to choose which Public Listed Companies (PLCs) and move a step ahead to invest in the stock exchange of Malaysia, Bursa Malaysia. The main objective of this application is to develop a financial web-based platform for young investor, which provides important financial ratios of PLCs. This application will also help to identify financial performance of PLCs and propose a guideline on how to have a quality decision making to the young investor. In relation with the problem statement, this web-based platform will analyse the requirements given by Bursa Malaysia and come out with the functionalities of financial ratios, designing the interface consists of database architecture and to provide financial data provider as addition information for young investor. Numerous literatures studies have been done in order to get comprehensive information regarding what kind of financial ratios need to be used and based on the studies, 10 different financial ratios been identified and will be included in this web-based platform. It is purposely to ensure the user understand both technical and fundamental analysis. The significance of this project is that it FiST allows the users to focus on financial ratios by comparing with other related ratios. It will be a good platform for young investor to start invests in stock market.**

I. INTRODUCTION

A. Background Study

The internet has played a major role in opening the world of investing. Financial data providers that available in the internet are all present the financial data specific for a company. This would be a problem for a new investor. To buy a stock or shares of a company, investors need to compare and clear which stock need to be chosen. Financial information and data will help them to do some analysis to ensure their prediction of a company to increase in value and bring profit to them. However, the financial data provider that comprises all the PLCs is not available yet. For the young investor as such, it is easier to compare and contrast between those companies if a financial data provider could provide this kind of information.

The existing financial data provider such as Google finance, Yahoo finance, Bloomberg and Reuters are those leaders in providing financial data for all company in the world. Study and research among few existing financial systems been made to guarantee the quality of the system. It is crucial to know and understand each of the existing system, so that it will be more advantage for this web-based platform to growth. However, each of the system has a different point of view. There are also no comparison of financial data provider between company been made. Generally, all the information had been provided by those financial data provider is basically for active investor, broker and people who really understand the fundamental of data analysis and can make their own assumption on what company that is in good and bad performance.

This project is aim to address the problem that become a common to the new generation of investor by developing Financial Indicators Surveillance Tracker (FiST). FiST is believed can help young investor to understand the unhealthy and potential growth company based on their financial ratios that execute using web-based platform, technically using

code in Microsoft Visual Basic / Asp.net. This should be a positive step to understand the stock market. Generally, the purpose of FiST is for the user to understand the financial ratios in detail. The features and functionalities of the FiST enables young investor start their future step ahead by gaining money in stock market industry.

The significant of this project is that it ensures the target user to have some idea of information on how to determine a company that having a good or bad in term of their financial performance. If a company having positive and sustainability finance, logically the company is in a good performance. With that, becoming familiar with investment alternatives by using FiST and developing realistic investment plans by having some analysis with it should greatly increase your chance of achieving financial success.

Below shown the comparison been done to the entire famous financial data provider in the internet:

Item / Financial Data	For young investors	Guideline to invest	Links to any investment website	General Info	PLCs financial data	Comparison financial data (PLCs)
Reuters	NA	NA	/	NA	/	NA
Bloomberg	NA	NA	/	NA	/	NA
Yahoo Finance	NA	NA	NA	/	/	NA
Google Finance	NA	NA	NA	/	/	NA
Bursa Malaysia (Website)	NA	/	/	/	/	NA

Figure 1: Comparison of financial data provider

B. Problem Statement

The accessible of information that compare among PLCs is not available yet. Besides, the understanding and mastering some of the financial ratio detected from PLCs financial report, is difficult for some of the users especially for the new investors. Thus, it is important to integrate financial data to formulate those ratios from multiple sources of database. Furthermore, the knowledge to assist the strength of a PLC's financial data is very hard to understand. By having easy-to-read information about the financial ratios, it will attract young people to start their investment. This also should be a good tool for the new generation of investor, to attract their interest.

C. Scope of Study

This application is limited for the data latest by December 2010 (this is because of the limitation of sources from Bloomberg, Reuters and Management Information System of Bursa Malaysia website – list data of Public Listed Company in Bursa Malaysia). Example: If there is a new listed company, it may need time to get the Referential data from Information System Business Unit (ISBU) Department of Bursa Malaysia. There shall be only few parameters each alert can be changed, it is because some alert having a lot of parameters. Some of the complex alert may require times to generate the output.

II. THEORY & METHODOLOGY

A. Investment Goals

Individual who are interested invest in stock market is so-called investors. As investors, they really want a satisfaction of getting profit from the PLCs that they were invested. *Investment goals are the financial objectives that investor wish to achieve by investing* (Gitman & Joehnk, 2010). It is important for investor to rolling back their money or in investment they called it return.

B. Analysing Financial Data

zThe motivation for investing in stocks is to watch your money grow. Unfortunately, for every story of great success in the market, there are many else story that do not end so well. Satisfaction investment is *that offers a level of expected proportionate to the amount of risk involved, also it must be sufficiently profitable* – in the sense that investor would expect it to generate a return that is through some analysis (Gitman & Joehnk, 2010)

C. The internet Investor

(Ann, Tiffany & Susan, 2006), state that the impact of Web site design and the activity of investments are based on consumers' trusting beliefs. Consequently, the data that been provided by FiST should be important for investor intentions, if the application can forecast the important information of PLCs and it will be good for the new generation of investors. As we all know, Internet is a search engine for users to find out specific information. It is true that internet's viewer should take this opportunity to understand the

trend of financial ratios and to learn the updated financial information that been provided. Besides, it is a new learning curve nowadays.

D. Financial Ratio Analysis

A financial ratio (or accounting ratio) is defined as the relative magnitude of two selected numerical values taken from an enterprise's financial statements, (http://encyclopedia.thefreedictionary.com). These words are often used in accounting term, especially when to evaluate the company's financial condition. Financial ratios are used to determine the stability of the company. Commonly, ratios always been benchmarked against something ratio related to it, for example the ratios always been compare or measure based on past performance, through Time trend (yearly basis) and Peer trend (company in the same sector).

Financial ratios play a big role especially to determine a systematic framework of financial statement analysis. If the research results in financial ratio analysis are to be useful for the decision makers, the results must be empirically general, (Timo Salmi and Teppo Martikainen, 1994). Hence, the important to understand financial ratios is important for investors because this is the key to success especially if they want to maintain the profit by investing in stock market. A changeable decision, project, joint venture and any press release, are all the possibility news that need to be compare and contrast with financial ratios that given by FiST.

Ratio analysis utilizes data from financial statement, thereby consent of information will help investor to have a good view regarding decision on buy, hold or sell. Financial Ratios allows for better comparison through time or between companies. All ten financial ratios of alert been shown below that been categorised from Table 2.4.1 until 2.4.5 that will be used in FiST:

- **Short-term solvency or liquidity ratios**; the ability to pay short-term obligations.
- **Long-term solvency or financial leverage ratios**; the ability to meet long-term obligations such as loans.
- **Assets management or turnover ratios**; efficiency of asset use.
- **Profitability ratios**; efficiency of operations and how this translates to the 'bottom line'.
- **Market value ratios**; how the market values of the firm relatives to the book values.

(Stephen A., Randoplh W. and Jeffrey Jaffe, 2010)

E. Throwaway Prototyping-based Methodology

This project will use throwaway prototyping to develop the project. Figure 2 below demonstrate the stages/phases in the methodology that been used. It is important to perform all the stages to make sure all the things that been planned could be accomplish according to the schedule.

For early stages of the project, it is important to understand the entire concept that involve in the project. In a way to provide better understanding, an appropriate method will be used besides using the manual method. And for that, it will reduce lesser time project. For FiST, user requirement of the project was through email by Bursa Malaysia Berhad staff that involved in Corporate Surveillance Governance Department.

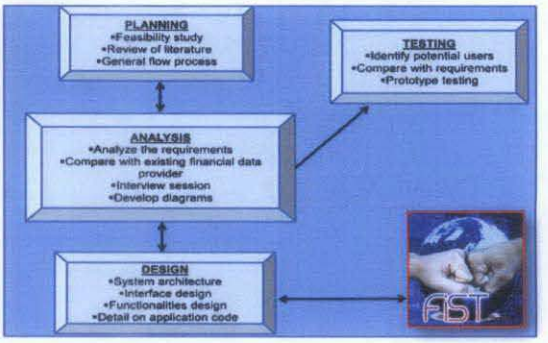


Figure 2: Throwaway Prototyping Methodology

F. User Requirement

FiST user requirements been developed by Corporate Surveillance Governance (CSG) Department of Regulation Business Unit, Bursa Malaysia Berhad. The main purpose of the user requirement is to highlight and formulate the specification requirement for FiST. The details out on how features / functions of the financial ratios's alert should be working.

G. Interviewing

An interview session had been done to get all the information related with the financial ratios. It is important for the functionalities for FiST. The information details had been retrieved from Mr. Arshad Azizi Kamaruddin (Head Department of Surveillance Research & Development, Bursa Malaysia Berhad) with the help of Mr. Shashi and Mr. Bonis, both managers from Corporate

Surveillance Research & Development and Market Surveillance of Bursa Malaysia Berhad. They are working together to come out with the user requirement for FiST.

By having all the details of the financial ratios, it will surely easier for the developer to give out the output to the user. Due to the complicated of the formulation (financial ratios), it needs time and discussion to clear all the logic that would help to get the output of the application from FiST. For that reason, one of the method been used are through phone and email discussion. Further notification and explanation been cleared with co-supervisor, Mr. Md. Akhir Mohd Sharif (corporate finance lecturer). It is important to follow the guide from the expert because FiST is targeted to achieve the objective of the project.

Some of the specification also been discuss through the interviewing session, which would be include in the application, such as:

- Capability of the application to make an output in Microsoft Excel format. This to ensure the investor can manage to use the data wisely through their own analysis.
- The application provides the parameter change button that makes the user can control the limitation of the ratio based on current situation. As an example, investors need to change the parameter because it is a factor to consider such inflation and few factors in investment environment.
- Audit trail: to track the investor when they using the FiST

H. Flow process of FiST

These are the general idea on how the data from Reuters, Bloomberg and Bursa Malaysia's website been integrated from different sources and how the extraction process happened. The flow process of all the activities shown at Figure 3:

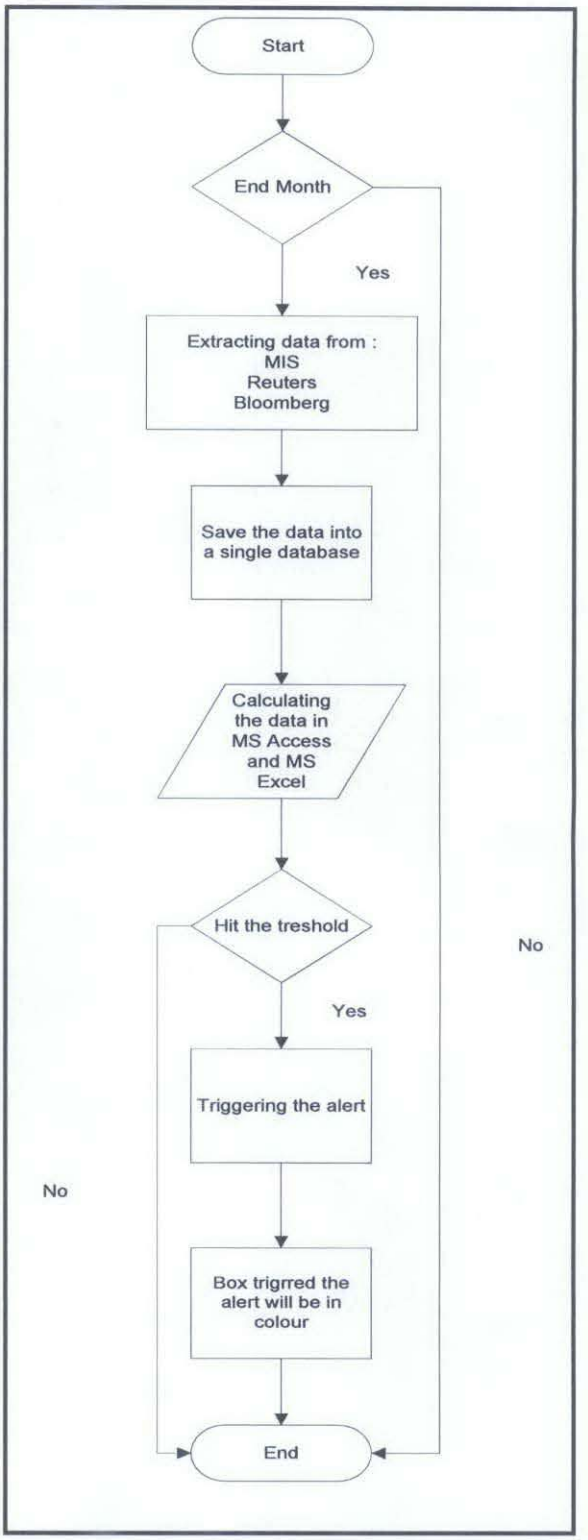


Figure 3

III. RESULTS & DISCUSSION

A. Diagram

Context Diagram

This context diagram, Figure 4 exposed to the user and developer that fundamental of FiST are from various sources and existing of the user is to choose the financial ratios that related with what analysis would be done by the investor. The diagram will be explained the details:

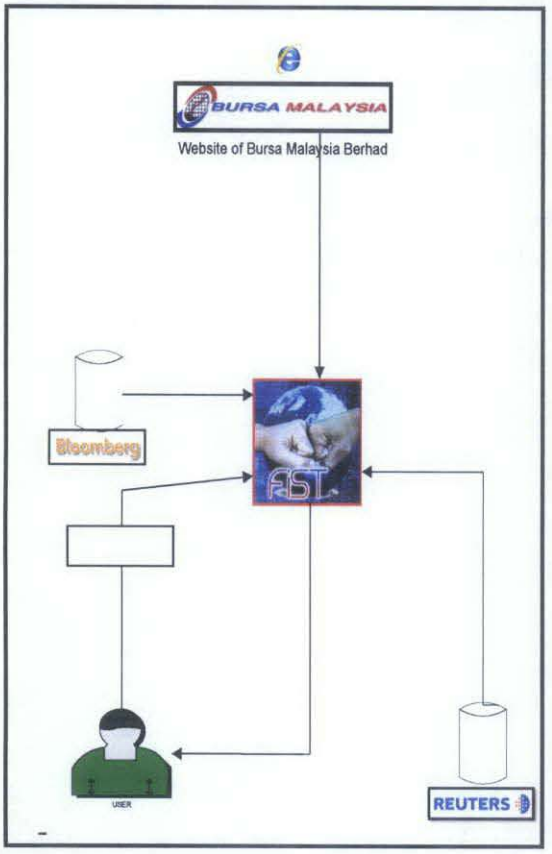


Figure 4

Use-case Diagram

From the use case diagram Figure 5 below, it in truth that the normal user and developer have their own specific admission on the application:

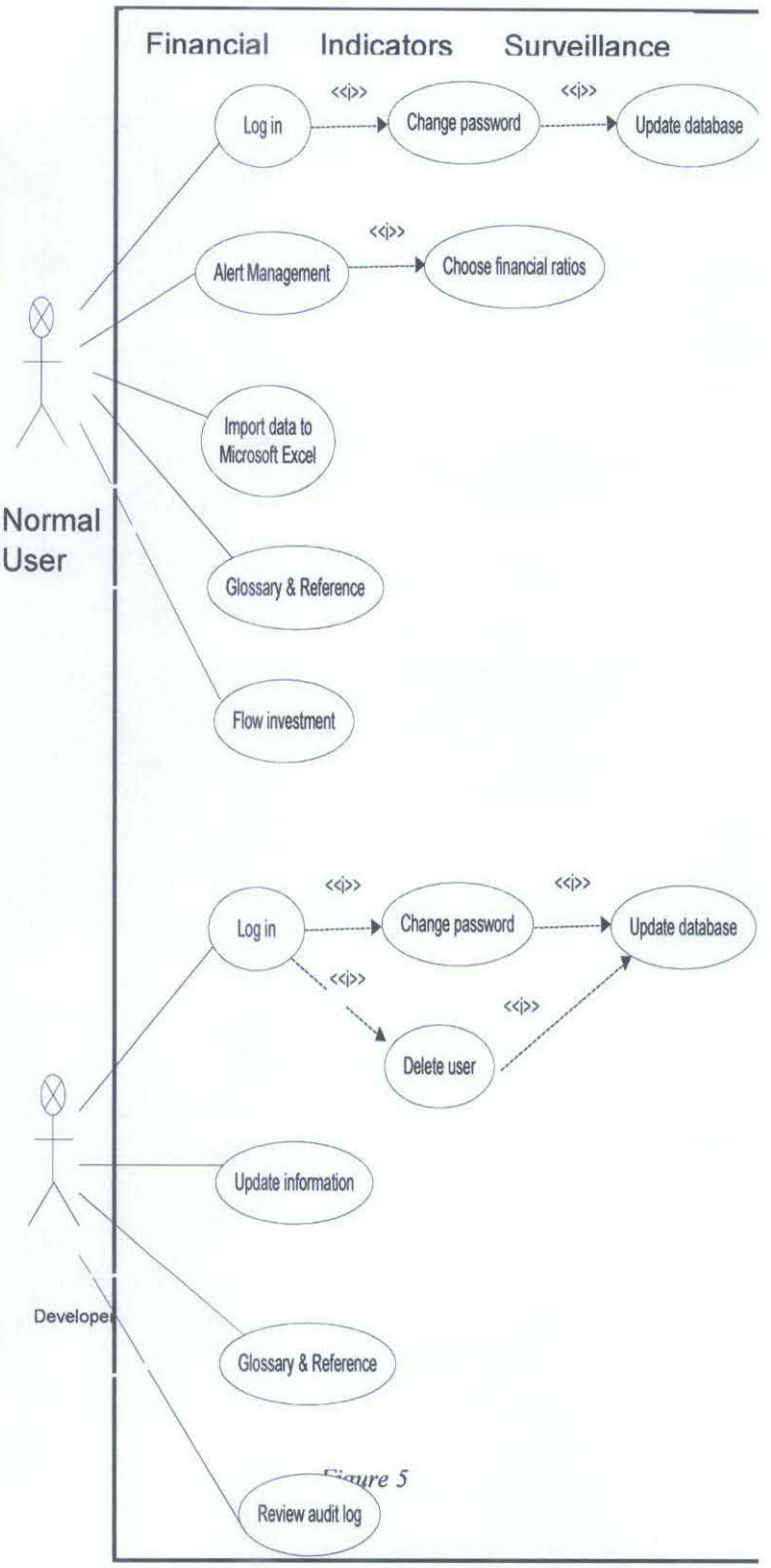


Figure 5

Class Diagram

Class diagram shown the details of the declaration in the database structure that also been applied in Microsoft Acces, refer Figure 6:

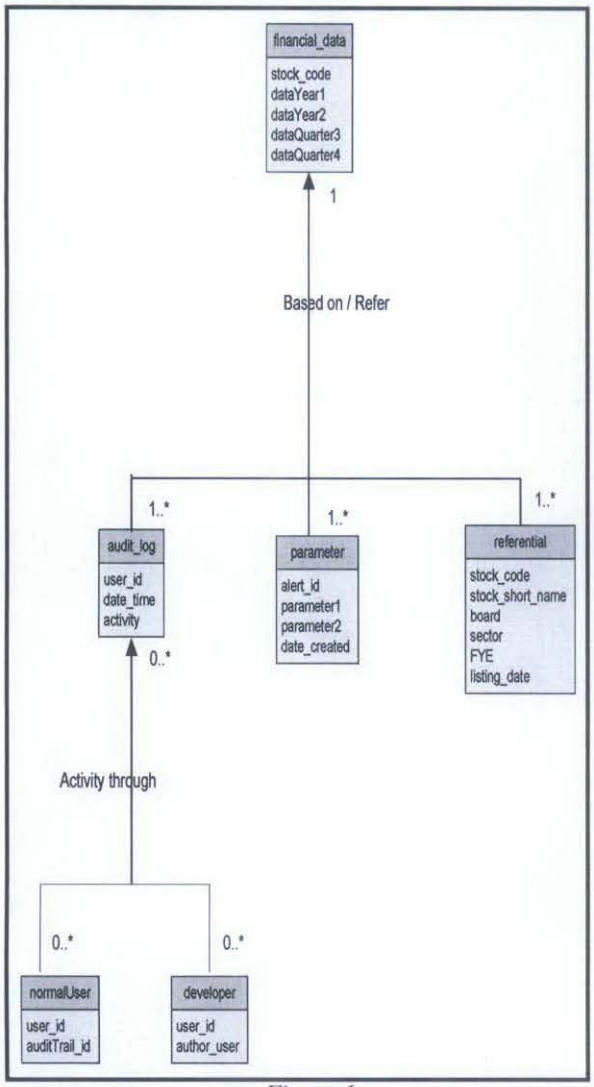


Figure 6

Classes are depicted as boxes with three main sections, the top one indicates the function of the class. Consist of financial data from financial data provider of Reuters and Bloomberg. The middle one list the attributes of the class, where each of the box having a different task for the FiST, that are audit log, parameter management and referential data. The third one lists detail of one of the attributes, audit log. The boxes capture the different activity from two different users in the application that are normal user (investors) and the developer (programmer).

B. Prototype Design

Prototype design of FiST had been developed with Microsoft Visual Studio 2005, using ASP.net as web development platform. All the basic function already can be function well and as an addition in the future there will be some rectification based on prototype comments from various perspectives. Below is the print screen of the entire interface:

Main Page

Figure 7

Based on the main page above, there are functionalities of home button, financial ratios (consist of comparison between PLCs financial ratios), flow process button (flow on how to invest for new investors), glossary and reference button (have the user manual of FiST and details of all financial ratios theory) and logout button.

Flow Process

As a new investor, user needs to understand the flow process of investment, through Figure 8:

Figure 8

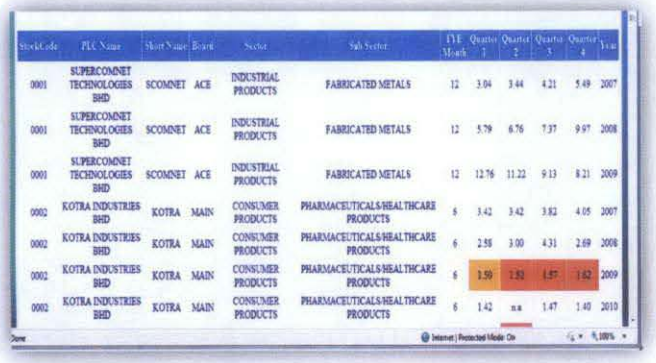
Alert Management / Financial Ratios

User has ten financial ratios / alerts which shown on Figure 9:

Figure 9

C. Data Gathering and Analysis

From the alerts above, the outputs are available in two formats (Microsoft Excel and Web-based style), Figure 10:



Stock Code	PLC Name	Short Name	Board	Sector	Sub Sector	FYE Month	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Year
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	3.04	3.44	4.21	5.49	2007
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	5.79	6.76	7.37	9.97	2008
0001	SUPERCOMNET TECHNOLOGIES BHD	SCOMNET	ACE	INDUSTRIAL PRODUCTS	FABRICATED METALS	12	12.76	11.22	9.13	8.21	2009
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	3.42	3.42	3.82	4.05	2007
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	2.58	3.00	4.31	2.69	2008
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	3.50	2.82	1.57	1.62	2009
0002	KOTRA INDUSTRIES BHD	KOTRA	MAIN	CONSUMER PRODUCTS	PHARMACEUTICALS/HEALTHCARE PRODUCTS	6	1.42	n.a	1.47	1.40	2010

Figure 10

Based on the output and some knowledge from the flow process of investment been understood, young investors can manage to do their own analysis and make decision on what stock to invest.

IV. CONCLUSION

FiST provides a better platform for young investor that includes comparison of financial ratio data between all PLC in Bursa Malaysia. By having this application, there is a possibility to increase the number of young investor in Malaysia. Moreover, FiST is a new technology based product that can facilitate young investor to understand and involve actively in stock market industry by knowing the flow on how to trade in stock market.

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