BORANG PENGESAHAN STATUS TESIS

JUDUL: WEB-BASED DATA ANALYSIS TOOLS (WeDA)
SESI PENGAJIAN: 2013/2014

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DECLARATION

I hereby declare that this project report entitled

WEB-BASED DATA ANALYSIS TOOLS

(WeDA)

is written by me and is my own effort and that no part has been plagiarized without citations.

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SUPERVISOR : _____ Date: 28/8/2014

(DR. AZAH KAMILAH BT DRAMAN @MUDA)

DEDICATION

To my beloved parents whom I shall make them proud.

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I would also like to thank to my friends who gave me suggestion and advice during the development of this project.

ABSTRACT

A manual way of generating graph by inserting formula on the desired data is not efficient and time consuming. Not all users have that kind of knowledge on using manual data analysis tools such as Microsoft Excel. The purpose of this project is to give users a platform to analyze their desired data without any manual formula input required. The proposed system is hopefully capable to give the convenience to users to analyze data.

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CHAPTER 1

INTRODUCTION

1.1 Project Background

A collection of data plays an important role for decision making to a personal, or/and a company. Data can be measure in terms of qualitative and quantitative. Data can be found anywhere, such as temperature of a weather, personal income, friendliness of a system, size of an object, and so on. Hence, it is important to keep the record of a data.

The "Web-based Data Analysis Tool (WeDA)" is a proposed web-based tool to produce a set of statistical result based the data input by the user. In this project, user is required to input a set of quantitative data only in order to allow the tool to formulate the data provided, while data results is the results shown based on the user input and desired results in different type of charts and diagram.

This project covers quantitative data set only.

1.2 Problem Statement

1. The user input data in the existing data analysis tool such as Microsoft Excel is done by manual, the results also depends on the user input the formula on the desired data.
2. The data input by the user and the results produced by the tools in existing data analysis tool cannot be saved and export to the current workspace used.

1.3 Objective

1. To allow user only input the desired data and produce the charts and diagrams by selecting the preset functions given in WeDA.
2. To provide the convenience to the user as WeDA is a web-based tools which can be access anywhere at any time, with workspace and internet connection provided.
3. To allow the user to login and save the analysis result in the server.

1.4 Project Scope

The scope of project: All user whoever have their own data set which wish to be analyze by the analysis tool. This project is consisting 9 modules and the system boundary will discuss more detail at below:

1.4.1 Target User

The propose system are available for all user whoever have their own data set which wish to be analyze by the proposed system. User can choose either want to use the tools with or without a membership account. If user register an account in the system, they can keep their data set inside the system's database and user will be able to view back their analysis result. Besides, user also can edit or update their existing data set that had been store inside the system's database. If the user use the system without a membership account, the system will still analyze the data set that had been insert by the user and produce the analysis result but the user will not be able store their analysis result in the server.

1.4.2 System Module

The proposed system consists the modules as mention below:

a. Member Login Module : This module allows user who has membership account to login to the system.

b. User Register Module : This module allows user to register to be member for the system.

c. User Profile Module : This module allows user to update their profile.

d. Data Management Module : This module allows user to upload or edit their data set.

e. Data Analysis Module : This module will analyze the data set that had been insert by the user and produce analysis result as chart or diagram form.

1.4.3 Boundary of System

The scopes of the project boundary are listed as follows:

a. The system is built based on 3-tier web-based application architecture which the framework concept is based on the Model-View-Controller (MVC) model concept.
b. The system is built using hypertext markup language (HTML), JavaServer Pages (JSP), Javascript, My Structured Query Language (MySQL) and Java programming language.
c. For data analysis module, the system will analyze data set by using basic statistical method and the analysis result will produce as chart or diagram form.

1.5 Project Significance

The importance of this data analysis tools is to allow user to analyze their data set at anytime and anywhere. Registered user able to store their analysis result in the system database server. Besides, the analysis result that produce by the system is in chart or diagram form which makes user easier to understand the analysis result.

1.6 Expected Output

The proposed data analysis tools will analyze the data set that had been input by the user. The tools will produce chart or diagram based on the analysis result. In the data analysis module, user are required to input their data set which they wanted to be analyze by the tools. The analysis tools will analyze the data set by using basic statistical method or technique and it will produce the analysis result as in chart or diagram form.

1.7 Conclusion

This chapter includes project background, problem statements, objective, project scope, project significant and the expected output of the project. As a conclusion, the proposed system is a data analysis tools which it will analyze the data set that had been input by user. The system will analyze data set by using basic statistical methods and techniques and the analysis result will be produce as chart or diagram form.

CHAPTER 2

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

Literature review is a summary of the finding and facts found through the related sources. Literature review provides supporting facts to develop the proposed tool. The purpose of having literature review is synchronized with existing literature on data analysis tool, which will be the foundation of developing Web-based Data Analysis Tool (WeDA). This can be used as justification for future research on data analysis tool.

From literature reviewed, an appropriate methodology is required to develop the proposed tool. An appropriate methodology will enhance the overall development process and guide the developer to develop high quality software in shorter time and lower cost.

Hence, there are multiple methodologies will be proposed based on the facts of reason to select a methodology and principle of methodology. Project can be categorized into three sizes, which are small, medium and complex system. Aspects such as size, composition, priorities, and criticality determines the different level of projects. Personal bias is commonly in a project team, based on their experiences, principles and preferences towards a project. These will affect the project quality and optimality.

2.2 Facts and Findings

2.2.1 Domain

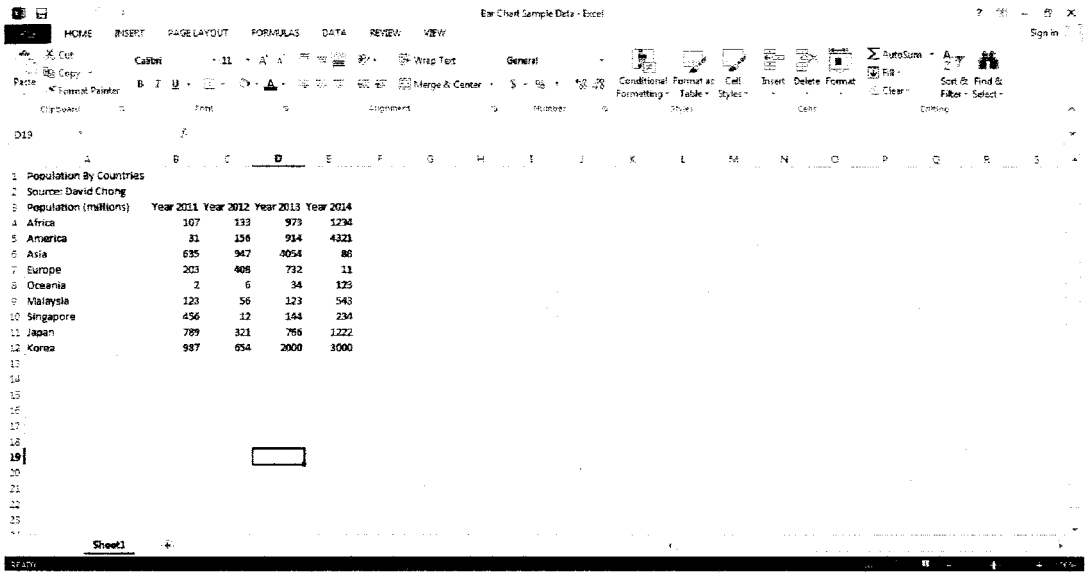
Data analysis tool is a documented and tested step-by-step method aimed at smooth functioning through standard practices. It is used in variety of industries which need analysis report, generally include the graph such as (1) pie chart, (2) line graph, (3) bar chart and (4) analysis based on the graph.

Data analysis tool provides the ease of use, discovering information and suggesting conclusion which can support decision making. The most commonly used data analysis tool, Microsoft Excel is not user friendly. This problem is emerging because the data input and formula are done manually. Hence, the proposed tool is developed for the user who does not familiar with formula to be used, such as formula to calculate mode and mean. This data analysis tool is expected to able to solve the problems faced by beginner user of Microsoft Excel.

2.2.2 Existing System

Currently, Microsoft Excel is using manual formula input to generate different types of graph. Hence, the existing systems will be used as a foundation to develop the tool.

2.2.2.1 Microsoft Excel



Population By Countries				
Source: David Chong				
Population (millions)	Year 2011	Year 2012	Year 2013	Year 2014
Africa	107	133	973	1234
America	81	156	914	4321
Asia	635	947	4054	88
Europe	203	408	732	11
Oceania	2	6	34	123
Malaysia	123	56	123	543
Singapore	456	12	144	234
Japan	789	321	766	1222
Korea	987	654	2000	3000

Figure 2-1 Microsoft Excel

Microsoft Excel is a spreadsheet application developed by Microsoft for Microsoft Windows and Mac OS.

This tool is developed to allow the user to organize data manipulation such as arithmetic operations. In this tool, it has a variety of interactive features which allows the user interface hides the spreadsheet completely. Interactive features can be customized with colors, styles and pattern to present the spreadsheet. Hence, the spreadsheet can also be known as decision support system (DSS).

The basic functionality in Microsoft Excel are calculation, graphing, macro programming and pivot tables. With the main objective to aid the user, there are many formulas can be input to allow calculation based on data and formula. There are wide range of formulas and functions available, and is categorized based on user's usage. Besides, different types of graph can be produced based on the data calculated.

Furthermore, Microsoft Excel of Windows version supports programming language, which is Visual Basic Applications (VBA). VBA also allows spreadsheet manipulation by writing code using Visual Basic Editor (VBE). It is suitable for programmers who prefer code module organization environment. They can implement automating tasks such as formatting or data organization in VBA. Any intermediate results by calculation done can be reported back to the spreadsheet.

Microsoft Excel has the following features:

1. Graphical Representation
    - Charts
        - Line chart
        - Bar chart
        - Pie chart
        - Combo chart (combines both line and histogram)
        - Stock chart
        - Pivot chart
    - Graphs
    - Histograms

2. Conditional formatting
    - Highlight cell rules
        - Greater than...
        - Less than...
        - Equal to...