

To Study Graphical Representation of Data

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ABSTRACT

The use of visualization to present information is not a new phenomenon. It has been used in maps, scientific drawings, and data plots for over a thousand years. Examples from cartography include Ptolemy's Geographia (2nd Century AD), a map of China (1137 AD), and Minard's map (1861) of Napoleon's invasion of Russia a century and a half ago. Most of the concepts learned in devising these images carry over in a straight forward manner to computer visualization. Edward Tufte has written three critically acclaimed books that explain many of these principles. Computer graphics has from its beginning been used to study scientific problems. However, in its early days the lack of graphics power often limited its usefulness. The recent emphasis on visualization started in 1987 with the publication of Visualization in Scientific Computing, a special issue of Computer Graphics. Since then, there have been several conferences and workshops, co-sponsored by the IEEE Computer Society and ACM SIGGRAPH, devoted to the general topic, and special areas in the field, for example volume visualization. It is the image processing. Most people are familiar with the digital animations produced to present meteorological data during weather reports on television, though few can distinguish between those models of reality and the satellite photos that are also shown on such programs. TV also offers scientific visualizations when it shows computer drawn and animated reconstructions of road or airplane accidents.

Keywords: - Visual Basic 6.0 Programming, Database, Visual Basic Programming Control i.e. ADO and Reporting tool Crystal Report.

INTRODUCTION

A chart is a graphical representation of data, in which "the data is represented by symbols, such as bars in a bar chart, lines in a line chart, or slices in a pie chart". A chart can represent tabular numeric data, functions or some kinds of qualitative structure and provides different info. The term "chart" as a graphical representation of data has multiple meanings:

- A data chart is a type of diagram or graph that organizes and represents a set of numerical or qualitative data.
- Maps that are adorned with extra information (map surround) for a specific purpose are often known as charts, such as a nautical chart or aeronautical chart, typically spread over several map sheets.
- Other domain specific constructs are sometimes called charts, such as the chord chart in music notation or a record chart for album popularity.

Charts are often used to ease understanding of large quantities of data and the relationships between parts of the data. Charts can usually be read more quickly than the raw data that they are produced from. They are used in a wide variety of fields, and can be created by hand (often on graph paper) or by computer using a charting application. Certain types of charts are more

useful for presenting a given data set than others. For example, data that presents percentages in different groups (such as "satisfied, not satisfied, and unsure") are often displayed in a pie chart, but may be more easily understood when presented in a horizontal bar chart. On the other hand, data that represents numbers that change over a period of time (such as "annual revenue from 1990 to 2000") might be best shown as a line chart.

Features of a Chart

A chart can take a large variety of forms; however there are common features that provide the chart with its ability to extract meaning from data. Typically the data in a chart is represented graphically, since humans are generally able to infer meaning from pictures quicker than from text. Text is generally used only to annotate the data.

One of the more important uses of text in a graph is the title. A graph's title usually appears above the main graphic and provides a succinct description of what the data in the graph refers to.

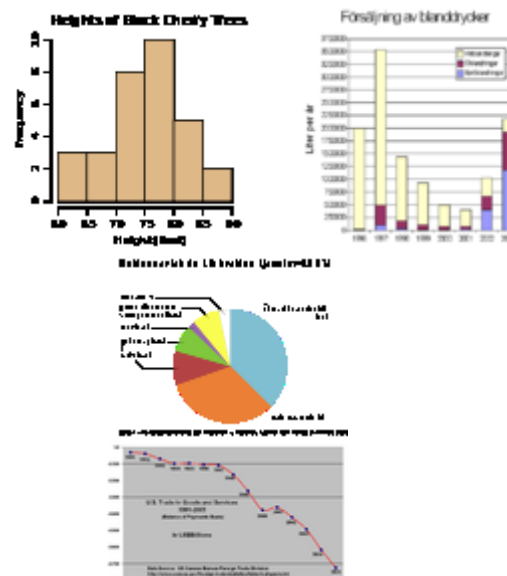
Dimensions in the data are often displayed on axes. If a horizontal and a vertical axis are used, they are usually referred to as the x-axis and y-axis respectively. Each axis will have a scale, denoted by periodic graduations and usually accompanied by numerical or categorical indications. Each axis will typically also have a label displayed outside or beside it, briefly describing the dimension represented. If the scale is numerical, the label will often be suffixed with the unit of that scale in parentheses. For example, "Distance traveled (m)" is a typical x-axis label and would mean that the distance travelled, in units of meters, is related to the horizontal position of the data within the chart.

Within the graph a grid of lines may appear to aid in the visual alignment of data. The grid can be enhanced by visually emphasizing the lines at regular or significant graduations. The emphasized lines are then called major grid lines and the remainders are minor grid lines.

The data of a chart can appear in all manner of formats, and may include individual textual labels describing the datum associated with the indicated position in the chart. The data may appear as dots or shapes, connected or unconnected, and in any combination of colors and patterns. Inferences or points of interest can be overlaid directly on the graph to further aid information extraction.

When the data appearing in a chart contains multiple variables, the chart may include a legend (also known as a key). A legend contains a list of the variables appearing in the chart and an example of their appearance. This information allows the data from each variable to be identified in the chart.

Types of Charts



Histogram
Pie Chart

Bar Chart
Line



LITERATURE REVIEW

A literature review goes beyond the search for information and includes the identification and articulation of relationships between the literature and our field of research. While the form of the literature review may vary with different types of studies, the basic purposes remain constant:

Abdalkhaleq.H, at all “Addressing Burdens of Open database Connectivity Standards on the Users” Third International Symposium on Data of Conference: 21-22 Nov. 2009, Pages 305-308, E-ISBN 978-1-4244-6421-0 , INSPEC Accession Number: 11154016) We present in this paper Application Program Interface (API) is a general term used to identify a set of high-level routines that can be used by an application program to access and keep track of lower-level services in Operating System (OS), Database Management System (DBMS), graphics system, or a network. Open Database Connectivity (ODBC) is an API, which initially is defined by the SQL Access Group (SAG) to provide access to different database systems from MS windows platform. The ODBC not only becomes widely accepted standard to database tier-connectivity but also enables database's application to access a heterogeneous data on multi-tries environment and able to connect many registered database engines and simultaneously issuing SQL commands. This paper investigates the recent ODBC capabilities and issues after a radical change in ODBC component and functionality and becoming DBMS-independent constituent using the practical way of benchmark between Oracles vs. MS SQL. [1][2]

Garuba, M, at all. “Impact of external security measures on data access implementation with online database management system” Date of Conference: 4-6 April 2005, Pages 243 - 248 Vol. 1, Print ISBN: 0-7695-2315-3, INSPEC Accession Number: 8530544) we present in

this paper the creation and phenomenal growth of the Internet has spawned the emergence of a global information society. The scientific, engineering, and educational communities are all using the Internet as an indispensable tool for collaboration and rapid dissemination of information on advances and practice at all levels of scientific and engineering endeavors. All of these benefits that the Internet can provide are subject to disruption by Internet-based cyber attacks that use the speed and global connectivity of the global computer network to cross national boundaries with ease. The local and global implications of an increasingly critical societal dependence on the Internet makes necessary the ability to deter, or to minimize, the effect of cyber attacks, by enhancing the security. The implementation of additional layers to enhance security in either a client/server or online database management system environment does have an impact on the response time for queries. The research presented in this paper was conducted at Howard University as part of a research project at the graduate school. [3][4]

Swaroop, V. at all, “Mobile distributed real time database systems: A research challenges” Date of Conference: 17-19 Sept. 2010, Pages: 421 – 424, Print ISBN: 978-1-4244-9033-2, INSPEC Accession Number: 11661877) we present in this paper Modern Electronics devices and electronic commerce applications characterized by high volume of transactions can't survive without an online support of computer system and database technology. It gave birth to distributed real-time database systems, a new form of distributed database system, in which, transactions have deadlines or timing constraints. Again, the rapid growth in Mobile Computing Technology has provided a new platform for Distributed Real Time Database Systems (DRTDBS). DRTDBS are becoming ubiquitous and critical component in mobile environment today. More recently, In fact, this paper first discusses the performance issues that are important to



MDRTDBS, and then surveys the research that has been done so far. In fact, this study provides a foundation for addressing performance issues important for the management of very large mobile real time data and pointer to other publications in journals and conference proceedings for further investigation of unanswered research questions. [5][6]

Bazghandi, “Web Database Connectivity Methods (using Mysql) in Windows Platform” Publication Date: 2006, Pages 3577 – 3581, Print ISBN: 0-7803-9521-2, INSPEC Accession Number: 9086031)

We present in this paper Retrieving data from web databases and developing dynamic web pages are essential and important problems to construct web site. It is felt updating web pages is necessary today, against the past. There are many approaches for connecting and retrieving data for web documents in various platforms. Among databases are used, Mysql is the most popular open source database system available today, and is currently installed on over two million servers worldwide. The paper reviews web database connectivity methods at first, and then investigates three Mysql connecting methods: Php, Asp and Perl in windows platform. IIS web server was used in this research. Finally, the paper compares performance of these methods at similar circumstances [7]

GUI Xu Chen; “Research of Auto-Dispensing Machine Based on Visual Basic Database” Publication Date: 6-7 March 2010, Pages 574 – 577, E-ISBN: 978-1-4244-6389-3, Print ISBN: 978-1-4244-6388-6, INSPEC Accession Number: 11290958) we present in this paper Auto-Dispensing machine is one kind of typical multiple spindle motion control system based on stepping motor. But the key point is that this kind of multiple spindle motion control system lies in position controlled by stepping motor, which also called spindle coordinate figure establishment. There are lots of

coordinate figures should be input when dispensing machine work. In this paper, one typical figure establishment method that involving communication between MCU AT89C51 and PC based on VB database was advised. Research of dispensing machine based on Visual Basic Database was depicted clearly [8]

PROBLEM FORMULATION

Before developing research we keep following things in mind so that we can develop powerful and quality research.

PROBLEM STATEMENT

Problem statement was to design a module:

- Which will be user friendly?
- Which will restrict the user from accessing other user’s data?
- Which will help the user in viewing his data and privileges?
- Which will help the administrator to handle all changes?
- In which further additions can be made without changing its design drastically.
- Which would restrict the server traffic?

Another problem was that the data should be accessed from the server and accordingly changes should be made on the data in the server only. The main problem comes with understand the data or model, because when we enter the data on the form or any other sheets. We can’t understand concept with the data. When a company or any other organization provide us data and create the model or chart of the data. At that time we are totally helpless for that time.

FUNCTIONS TO BE PROVIDED

The various features that the proposed system will possess will be:



- The system will be user friendly and completely menu-driven so that users shall have no problem in using all the options provided.
- The system will be efficient and fast in response by careful programming.
- The system will be customized according to the needs of the organization.

It will provide overall security to database both from user as well as administrator side.

OBJECTIVE

According to the situation of the problem, a solution is provided to use Line Charts, Histogram, Bar Charts and Pie Chart in Visual Basic programming which has been used to create any diagrammally structure of any data of the organization. In the objective, we can organize the data, describe the data, read and interpret display of data, construct appropriate display of data, pictogram, bar chart, line bar chart, histogram, pie chart etc.

What is the best way to represent the collected data? Is the data discrete or continuous, is the data qualitative or quantitative, how does one change from one form of representation to another, what is the effect of changing scale? These are questions to be considered. Too frequently the emphasis is on operational understanding, on the techniques of drawing a bar chart, a pie

chart, a cumulative frequency curve while questions as to why to use the (most of the time) stated representation in the given circumstances (are they valid? are they appropriate?) are hardly considered. It should be left to the pupils to decide what the most appropriate way to represent their data is (and that is the difficult part—the actual drawing of chart is not the problem in general, and could be done by a computer). One way to do this is by comparing different forms of representing the data.

RESEARCH METHODOLOGY

What is Algorithm in Computer Science?

Algorithm is a process of problem-solving in step by step to get result. Algorithm is very importance for programmers to do computer programming because it figures out the programming process. Algorithm is a part of problem-solving techniques. After the problem has been raise, we have to analyze the problem first then the inputs and outputs are defined. After that we start to design the algorithm that is a process to transform inputs into outputs.

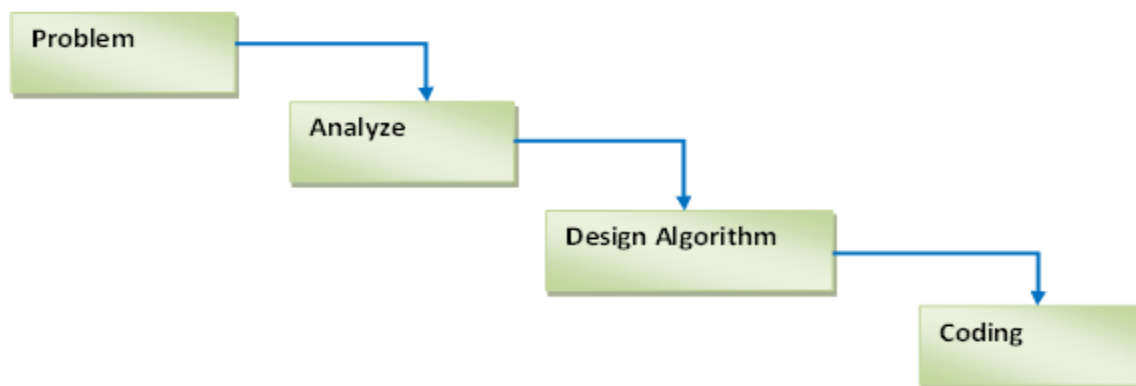


FIGURE: - Problem – Solving Technique



FIGURE: - Flow – Chart of a Problem

Problem: - First of all the main question arises that what is the problem? The problem was that the data should be accessed from the server and accordingly changes should be made on the data in the server only. The main problem comes with understand the data or model, because when we enter the data on the form or any other sheets. We can't understand concept with the data. When a company or any other organization provide us data and create the model or chart of the data. At that time we are totally helpless for that time. So in this problem we waste a lot of time cost for support the programming and increase the coding efforts. Finally we are unable to do with generate the Model or Structure of the data which is necessary for organizational need and other business purpose.

Analyze: - I analyze this problem which is serious and it should have easy solution. Then I have made an algorithm which is necessary to solve this problem. With the help of this algorithm and database model diagram in my research I am able to access the data or also able to generate the Chart system in visual basic programming and give the results better than data and other sheets or report.

Design Algorithm: - The steps of this algorithm used in my research are as follow:

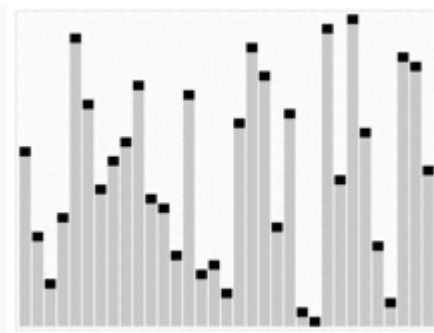
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One of the simplest algorithms is to find the largest number in a (n unsorted) list of numbers. The solution necessarily requires looking at every number in the list, but only once at each. From this follows a simple

algorithm, which can be stated in a high-level description English prose, as:

High-level description:

1. If there are no numbers in the set then there is no highest number.
2. Assume the first number in the set is the largest number in the set.
3. For each remaining number in the set: if this number is larger than the current largest number, consider this number to be the largest number in the set.
4. When there are no numbers left in the set to iterate over, consider the current largest number to be the largest number of the set.



An animation of the [quick sort algorithm](#) sorting an array of randomized values. The red bars mark the pivot element; at the start of the animation, the element farthest to the right hand side is chosen as the pivot.



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Quasi-) formal description: Written in prose but much closer to the high-level language of a computer program, the following is the more formal coding of the algorithm in pseudo code or pidgin code:

Algorithm Largest Number

Input: A list of numbers L.

Output: The largest number in the list L.

Largest ← null

For each item in "L", do

 If item > largest, then

 Largest ← item

Return largest

EXPERIMENTAL RESULT

A chart is a graphical representation of data, in which "the data is represented by symbols, such as bars in a bar chart, lines in a line chart, or slices in a pie chart". A chart can represent tabular numeric data, functions or some kinds of qualitative structure and provides different info. The term "chart" as a graphical representation of data has multiple meanings:

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label and would mean that the distance travelled, in units of meters, is related to the horizontal position of the data within the chart.

My Research is To Study Graphical Representation of Data The research on **To Study Graphical Representation of Data** is completely attached with Overall Chart system. In this research we can attach programming language Visual Basic Programming. With the help of Visual Basic Programming we can create various types of charts that are used for define the overall structure of the data. So my research is that if we required enter the data on the visual basic form then we can create the various types of charts to show the overall model of the data. This research is completely based on coding. In this research a form in visual basic programming show the overall system to concerned the chart when we select any chart from the drop down list then automatically we can create that chart which we can select. The main thing is that if we rotate that chart in various axes then we can do it.

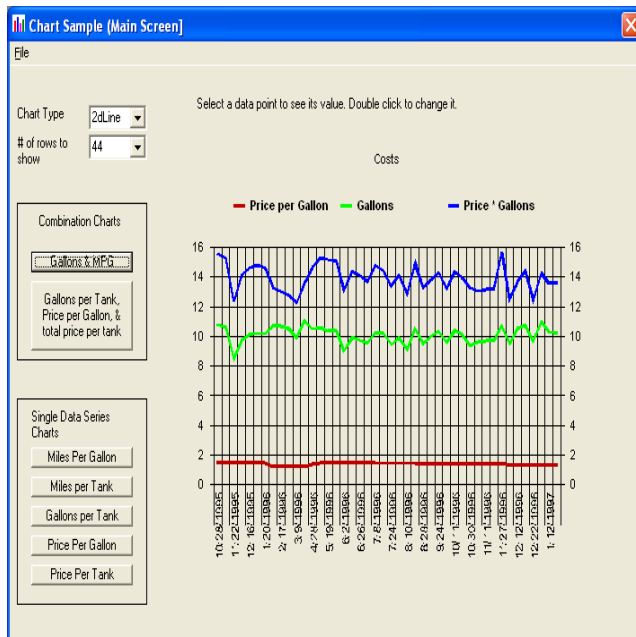


Figure Show the Main Chart Form which show the 2D Line chart with 44 rows.

CONCLUSION AND FUTURE WORK

This chapter is based upon the conclusion of what we have done so far and how the system can be further enhanced with an increase in requirements.

CONCLUSION

The presentation of statistics in the form of graphs facilitates many processes in economics. The main uses of graphs are as under:

- **Attractive and Effective presentation of Data:** The statistics can be presented in attractive and effective way by graphs. A fact that an ordinary man can not understand easily, could understand in a better way by graphs. Therefore, it is said that a picture is worth of a thousand words.
- **Simple and Understandable Presentation of Data:** Graphs help to present complex data in a simple and understandable way. Therefore, graphs help to remove the complex nature of statistics.
- **Useful in Comparison:** Graphs also help to compare the statistics. IF investment made in two different ventures is presented through graphs, then it becomes easy to understand the difference between the two.
- **Useful for Interpretation:** Graphs also help to interpret the conclusion. It saves time as well as labor.
- **Remembrance for long period:** Graphs help to remember the facts for a long time and they cannot be forgotten.
- **Helpful in Predictions:** Through graphs, tendencies that could occur in near future can be predicted in a better way.
- **Universal utility:** In modern era, graphs can be used in all spheres such



as trade, economics, government departments, advertisement, etc.

- Information as well as Entertainment: Graphs help us in entertainment as well as for providing information. By graphs there occurs no hindrance in the deep analysis of every information.
- Helpful in Transmission of Information: Graphs help in the process of transmission as well as information of facts.
- No Need for training: when facts are presented through graphs there is any need for special training for these interpretations.

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