

THE MAKING OF SYSTEM DATABASE USER FRIENDLY ON SMALL AND MEDIUM INDUSTRY (SMI) OF AUTOMOTIVE IN CENTRAL JAVA

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Abstract. This paper about the making of system database user friendly on small and medium industry of automotive component in Central Java. The objective of this research is to make system data base with appearance user friendly and to know how high the level of customer's satisfaction on the appearance of system database implemented on SMI automotive. This type of research is applied research, the research design uses evaluation research. This research result among others are resulted system database with appearance user friendly and the customer's satisfaction level on appearance system data base is very high namely the average percentage is 97%.

Keywords: *automotive component, system database, SMI, user friendl.*

Abstrak. Tulisan ini tentang pembuatan database pengguna sistem ramah pada industri kecil dan menengah komponen otomotif di Jawa Tengah. Tujuan dari penelitian ini adalah untuk membuat sistem data dasar dengan penampilan user friendly dan untuk mengetahui seberapa tinggi tingkat kepuasan pelanggan pada penampilan sistem database diimplementasikan pada SMI otomotif. Jenis penelitian ini adalah penelitian terapan, desain penelitian menggunakan penelitian evaluasi. Hasil penelitian ini antara lain mengakibatkan sistem database dengan penampilan user friendly dan tingkat kepuasan pelanggan pada penampilan basis data sistem sangat tinggi yaitu prosentase rata-rata adalah 97%.

Kata Kunci: komponen otomotif, sistem database, SMI, pengguna.

INTRODUCTION

The advancement and the development of technology are factors which influence the capability of industry to keep competing and defending. In Central Java Province has been formed cluster SMI (Small Medium Industry) automotive component which produce local automotive component products. SMI automotive component are demanded to be able to increase the quality of product and to maintain time appropriateness of its delivery to automotive industry which become its business partners. One of the impacts is the need of technology of information system in order every worker and SMI owner can get information, process data, and do control on the products fastly. One of technology of information system is database. Connolly defines database is a single, large repository of data which can be used simultaneously by many departments and users [1]. While Nugroho says that database is collection of data which are organized in such a way so that easy to store and to manipulate (renewed, searched, processed with certain calculations, also deleted) [2].

CV. Densuko Jaya Semarang and PT Trimbulindo Part Juwana Pati are SMI in Central Java which operate in the field production of automotive component. Most of SMI automotive component which are located in Semarang City and Pati haven't had any system database. The general barriers which appear on SMI because they do not have technology of information system (database) among others is the storage of data product which is not regular, so that the users cannot find information data product fastly, there is duplication of data, loss of data because there is no good data storage system, moreover most still use documentation of data use the books. Because there is no good data storage system, so that the users cannot access the data information of product which

have been produced, data customer orderer, data product which are identic, so that often must do planning and reengineering.

This research aims to produce database with appearance user friendly (easy to use) for SMIs automotive component in Central Java, and to know how high the level of customer's satisfaction (user friendly) system database which is implemented on SMI automotive component. Database used by SMI automotive component must have appearance which simplify users because the users (workers and the owners of SMI automotive component) haven't had any good knowledge on information technology. According to Dwijo (2013) the owner of PT. Trimbulindo Part Juwana Pati and also as the chief of cluster SMI automotive component in Juwana Pati says that the workers and the owners of SMI automotive component in the area of Juwana Pati haven't yet mastered the technology of information system well, this is proved by there is no system database on companies and most still document their products manually through notebook.

Software which is used in making of system database in this research is Microsoft Access 2010. Microsoft Access is an interactive, relational database management system. A database is an organised collection of data stored in categories that are accessible in a logical or practical manner. Relational databases enable data to be stored in multiple tables linked together via data indexes. This makes working with the data faster and easier. Once entered into the database, the data may be manipulated or viewed in various ways such as by sorting or by specially set-up queries and reports [3]. The advantages of Ms. Access is allows the user to manipulate large amounts of data, the different components and features of Access lend to its easy-to-use, quick-learn format and make it beneficial for small and large office environments [4].

The use of this research is; it is prouced system database with appearance user friendly for SMIs automotive component in Central Java, with the produced system database it is hoped that it can increase the performance of SMI automotive component so that can increase product quality and maintain time appropriateness of delivery to their business partners.

RESEARCH METHOD

This research is applied research, the research design uses evaluation research. Where the research flow chart is shown on figure 1.

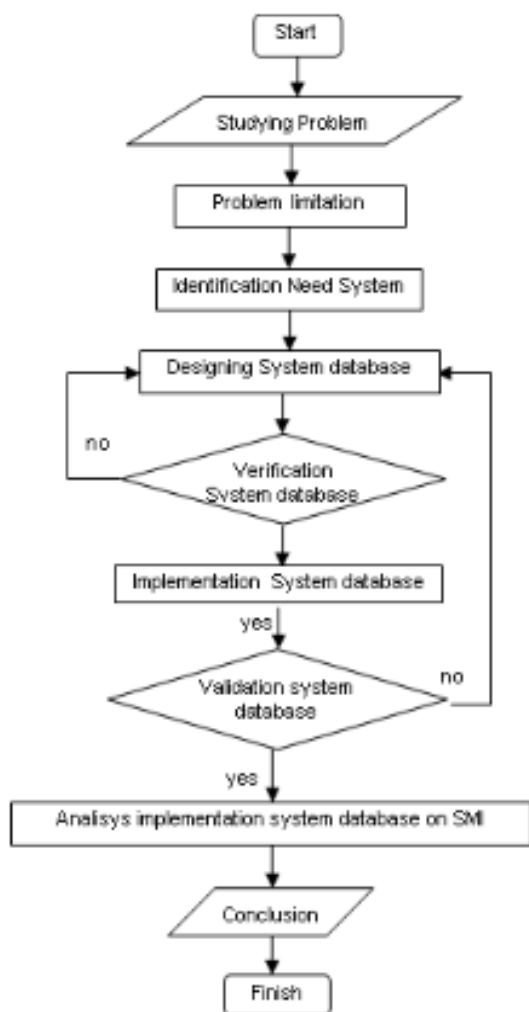


Figure 1. Research flow chart

Figure 1 shows research flowchart where phases of research activity is started by studying problem, then do problem limitation, and continued with do identification need system. Identification need system consist of list data need which is managed by SMI automotive component. To know list data need is done beginning observation on SMIs automotive component. List of the specification need is basic to do designing system database. After the system database is resulted, then the next phase is to do verification test of system database, namely to test whether system database run suitable with the design or not. If suitable so the next phase is implementation system database, and if it is not suitable so return to phase designing system database.

Implementation system database by users is continued by validation test of system database to users namely SMI automotive component. Phase evaluation system data base aim to do evaluation system database which has been made by doing evaluation of use. Validation test aim to test whether function system data base has been suitable with purpose of users to get information and data which is needed.

If system database is not suitable with need users so research phase return to phase designing system database. If system database suitable witj ned users so to be continued analsys implementation system database on SMI.

Method of collecting data on this research is method observation and interview. Method observation and interview is done by observing dan by asking directly when implementation/operation system database by SMI automotive component. Location of research namely on the place of SMIs in Juwana Pati and in Semarang.

IDENTIFICATION NEED SYSTEM

List technical specification of system database consist of data product about; Item product, Model product, Serial number product, Time production product, unit price product, Volume production, Customer, Description product, Attachment figure in details, Note and history product, Categori product, Location product

1. Database can be grouped based on data product such as item product, model product, time production product, category product, and location product.
2. Database can be printed in appearance report suitable with need grouping list on No.2.
3. Software database is easy to operate, or appearance tend user friendly.

DESIGN OF SYSTEM DATABASE

Database is made by using Microsoft access 2010 based on identification of users' need. Now flowchart input data product on system database is shown on figure .2

The figure above shows flowchart

process input data product, data which is input is list of data product needed for.managing the next data. Appearance result of planning database uses Microsoft access 2010 on part input data product is called “product details”, as shown on figure 3.

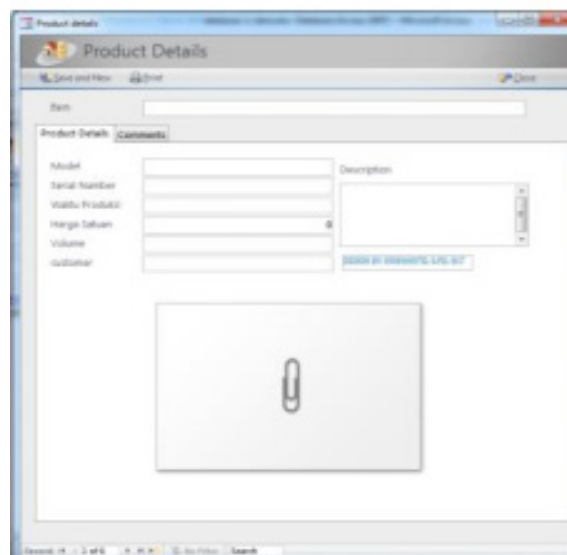


Figure 3. Appearance of input data product

Figure 3 shows appearance of input data product which contain list which

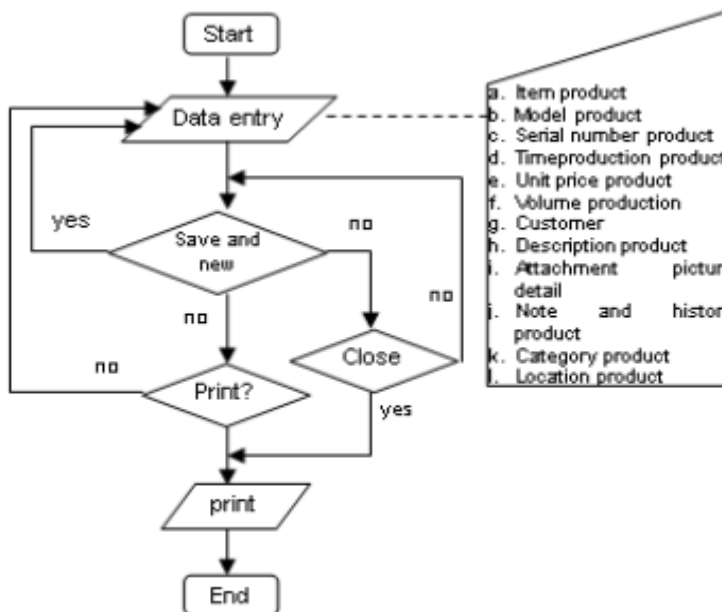


Figure 2. Flowchart input data product

must be filled about product completely suitable with list of users' need. Through this menu the data which is input can be printed directly or be stored. Data about figure and specification can be stored on attachment menu.

EVALUATION OF SYSTEM DATABASE

On evaluation of this system there are two evaluations namely verification and validation. On evaluation verification which has been done get result that system database has run as design. Data products which are input have been stored and can be access again, to be able to be changed or printed in appearance report. Validity of system database is done on phasr implementation system database on users. On validation test about function of system database get result that system database has been suitable with users' want. Data matching both the evaluation results is proved with some appearances system database on the figure below.

Figure 4 shows appearance list of data product on companies. On this menu has

loaded all data product list of users' need. On this menu data of all products is summarized in one menu. On this menu users can access data product, process data product, and add data product. List of product can be shown in order based on function short by letter or by sizes. By this menu also list of product can be sent through function e-mail service, and can be stored in various data format. Appearance catalog data product is shown

$$\% \text{ satisfaction} = \frac{N_1}{N_o} \times 100\%$$

e use(\$)
the data.

Figure 6 above shows appearance report data product overall. Although the form appearance report of companies but on column item can be accessed to do data change or data addition. For example access on one of products shown on figure 7 below. On figure 7 shows that data product in details can be opened or be accessed.

Figure 8 and figure 9 show menu data grouping based on category and location. This is suitable with users' want list no.1. enough, satisfied and very satisfied. From the five answers then narrowed. The percentage of satisfaction is calculated using the equation:

ID	Item	Model	Description	Waktu Produsi	Harga Satuan	Volume	Custome	No seri
1					0	0	(0)	
2					0	0	(0)	
3					0	0	(0)	
4	ENGINE MOUNT	ASRD	<div>Engine m		300000	0	astra	5234-124
5	Rubber Fender	Type-V	<div>BANTAL		500000	0	PT. TRIMBU	SA306-1000
6	Rubber fender	TYPE D	<div>BANTAL		200000	0	UNNES	SA232133
Total					3	500000	0	

Figure 4. Appearance list of data product on companies

Item	Description	Condition	Acquire	Purchase Price	Current Value	Category	Serial Number	Purchase Price	Insured	Location	Manufacturer
2	Rubber: BANTALAN KARET DERMAS	(2) Good		\$0.00	\$0.00						
3	THORSE Engine mount yamaha	(2) Good		\$300,000.00	\$0.00	SA330-1000	PT. TRIMBULUN				1500
4	Rubber: BANTALAN KARET DERMAS	(2) Good		\$300,000.00	\$0.00	SA330-1000	YAMAHA				25
5		(2) Good		\$0.00	\$0.00						450
6		(2) Good		\$0.00	\$0.00						
7		(2) Good		\$0.00	\$0.00						

Figure 5. Appearance catalog data product

Item	Condition	Category	Current Value	Manufacturer	Model	Location
Rubber: Bantalan	(2) Good		\$0.00			
Rubber: Bantalan	(2) Good		\$0.00	1500	Type V	
Rubber: Bantalan	(2) Good		\$0.00	25	AGRD	
Rubber: Bantalan	(2) Good		\$0.00	450	TYPE D	
	(2) Good		\$0.00			
	(2) Good		\$0.00			

Figure 6. Appearance of report data product

Item	Model	Serial Number	Invoice Number	Purchase Price	Volume	Customer
Rubber: Bantalan	AGRD	3234-1234	5/10/2014	300000	25	YAMAHA

Description: Engine mount yamaha
 Location:

Dimension: No. 02100, No. 02101, No. 02102, No. 02103, No. 02104, No. 02105

Figure 7. Example of access data product on report appearance

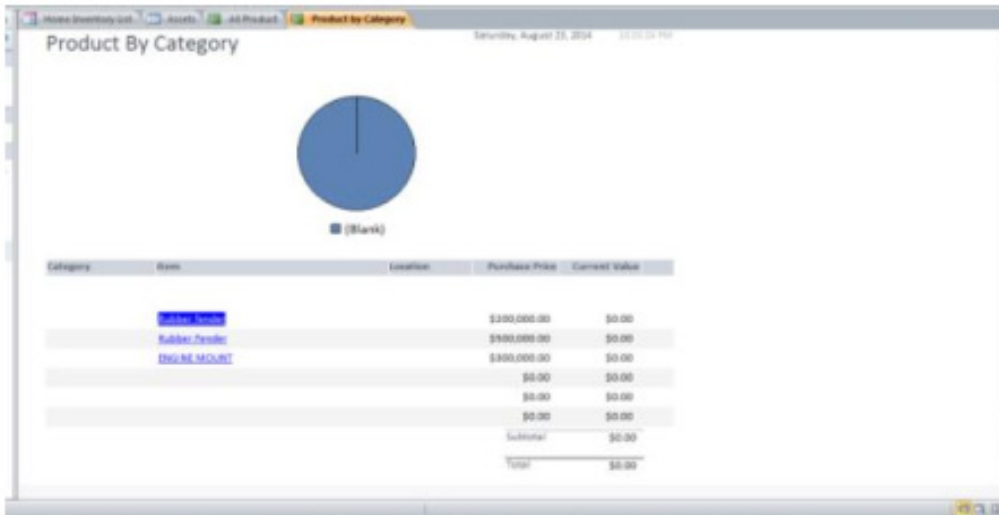


Figure 8. Data grouping based on category

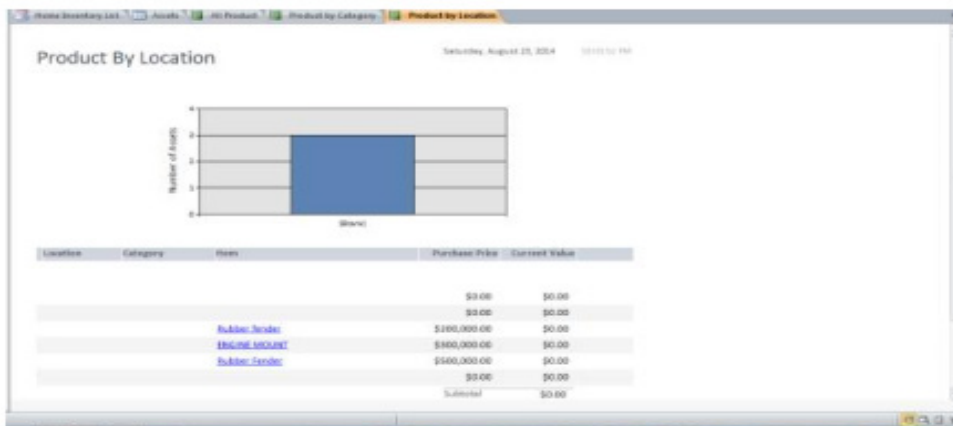


Figure 9. Data grouping based on location

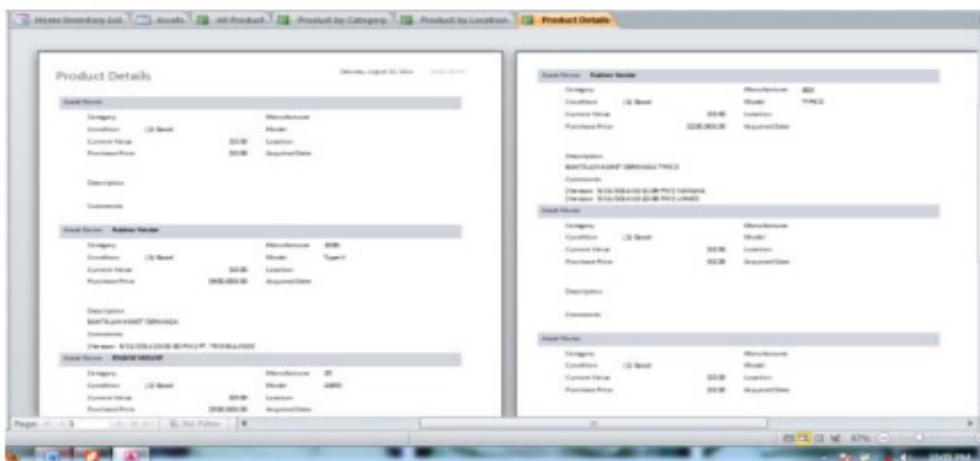


Figure 10. Report product detail overall

Table 1. Table Percentage of Users' Satisfaction On Appearance Of System Database User Friendly

Criteria of satisfaction	Percentage of satisfaction(%)		
	Not satisfied	Less satisfied	Satisfied and very satisfied
Simplicity in operating	0	0	100
Interesting appearance	0	10	90
Simplicity to access data	0	0	100
Simplicity to process data	0	5	95
Simplicity to print data	0	0	100
Average	0	3	97

Analisis implementation system database on users is resulted that system data base has appearance user friendly, namely appearance data base is easy to operate by users with the high percentage of users' satisfaction on appearance of system database user friendly average is

97%. This percentage result is got from data observation and interview directly when implementation system database. Sample of research are 20 people which come from SMI automotive component. Question list when interview consist of criteria simplicity in operating, interesting appearance, simplicity to access data, to process data and to print data, while the answers are classified on answer not satisfied, less satisfied, satisfied Where n_i is the number of answering, n_0 is the total sample.

CONCLUSION

System database data product for SMI

component automotive is made by using the software Microsoft Access 2010. System data base data product has been suitable with the users' want list and has appearance user friendly. The level of users' satisfaction on the appearance of system database very high namely the average percentage is 97%.

REFERENCES

- Connolly, T. M. Dan Begg, C. E., Database Systems, 3rd edition. USA: Addison Wesley, 2002.
- Nugroho A, Perancangan dan Implementasi Sistem Basis Data, Yogyakarta : Penerbit Andi, 2011.
- Microsoft Access. Download www.stu.qmul.ac.uk/primer/pdf/access.pdf
- Hunter Taylor. Benefits of Using Microsoft Access. download http://www.ehow.com/facts_4963940_benefits-using-microsoft-access.html 10 August 2014.