

Dashboard Information System for New Entrepreneur

E B Setiawan*, A Setiyadi

Universitas Komputer Indonesia, Jl. Dipatiukur 102-116 Bandung 40132, West Java, Indonesia

Email : eko@email.unikom.ac.id

Abstract. The more new entrepreneurs are created will have an impact on increasing the growth of the creative industry. The uneven growth of new entrepreneurs in a region will make it difficult for aspiring entrepreneurs to start a business. This research aims to display data on the distribution of entrepreneurs in an area to make it easier to determine the type of business that is most suitable to start. This research was conducted using a web-based application to display entrepreneurs data distribution in the Bandung Raya area. The data displayed was obtained from Training Center for Cooperatives and MSMEs of the Office of Cooperatives and Small Businesses of West Java Province. The results of functional testing that were carried out showed that all functions could display information as expected. The research results can have an impact, namely making it easier to understand information so that information can be displayed in the form of graphs, diagrams, and statistics. The resulting dashboard information system can also accelerate prospective entrepreneurs to know and understand the situation and condition of an area that is a plan for creating a new business, be it a business that has never existed in the area or existing business.

1. Introduction

A business dashboard usually consists of charts or graphs. A chart can consist of data for a short period or consist of data for a long time. The real-time dashboard contains data that has a shorter period and contains a collection of raw data from the results of a transaction [1]. Short-range dashboards are a dashboard that displays information on the development of data to be monitored based on the period of the week, month and year. The dashboard information system can improve the productivity and effectiveness performance of MSMEs [2].

The dashboard construction consists of four components, including key performance indicators (KPI), users and access rights, database and visual design [3, 4]. Key performance indicators are a set of measures that focus on the aspects of performance that are most critical to an organization's current and future success [5]. To get KPI a top-down approach must be taken, starting with identifying an overview of the information scenario, then identifying the data/information needs in detail. The second part is the access rights. The third part is the database to collect interrelated or interconnected data to be processed in a system that ultimately provides user value. The fourth part is the visual design that relies on the human visual ability to understand the information presented so that the design factor becomes an important part. Dashboard visualization development must fulfil digestibility, usability (scannability) and customizability [6].

The monitoring system is a process for collecting data from various resources. Usually, the data collected is real-time data [7]. The stages in a monitoring system divided into three essential processes, including data collection, data analysis and displaying monitoring data [8]. Application of this research to display information related to industrial data and entrepreneurial actors in the form of a web-based dashboard information system which aims to make the Training Center for Cooperatives and MSMEs of the Office of Cooperatives and Small Businesses of West Java Province, as well as prospective entrepreneurs, can easily find out and get information. This research can make it easier for entrepreneurs when determining the type of business that is most suitable to start.

2. Research Method

The framework method of this research can be seen in Figure 1.

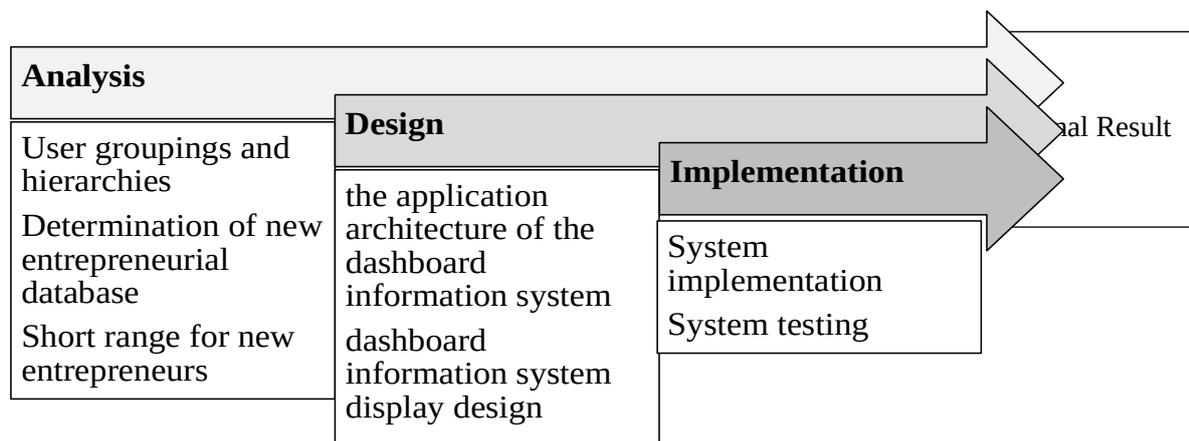


Figure 1. Stage of research

Based on the explanation from Figure 1, the stages carried out in this study are divide into several parts. These stages are analysis, design, implementation and getting the final results and conclusions of the study. At the analysis stage, do grouping and hierarchy of users, determining a database of new entrepreneurs, as well as short-range analysis for new entrepreneurs.

At the design stage, the dashboard information system application architecture design is carried out, as well as the display design. Once the design phase is done, the next step is the implementation stage in which the system test process is also done in order to obtain the results and conclusions of the research undertaken.

3. Results and Discussion

4. Analysis of grouping and user hierarchy

User grouping and hierarchy for the Implementation of Dashboard Information System for New Entrepreneurs refers to job details and task details of each section. The following is the group, hierarchy, and the duties of each section can see in Table 1.

Table 1. Grouping and user hierarchy

User	Job Activity
Planning Section	- Carry out evaluation and reporting of work programs - Carry out data and information management
Implementation of training section	- Carry out an evaluation of the training administration

5. New entrepreneur database

Information technology is the result of human thought to develop specific procedures or systems and use them to solve problems in life [9]. The system at the West Java entrepreneurial cooperative education and training centre consists of three systems, including Participant E-Registration, Employee E-Registration and Mentoring Monev. The three systems are website-based so that they can be accessed using the internet. The database used in this system is MySQL because it has good performance [10] and can also be used in monitoring systems [11].

The following is the output screen of the UPTD integrated system landing page for West Java entrepreneurial cooperative education and training which can be seen in Figure 2.



Figure 2. Landing page integrated system UPTD cooperative education and training

In the UPTD registration system, West Java entrepreneurial cooperative education and training consists of four steps, including name search, data selection based on ID card number, filling out personal data forms and printing personal data. The following is the output screen of the registration system at the West Java Entrepreneurial Cooperative Training Center, which can see in Figure 3.

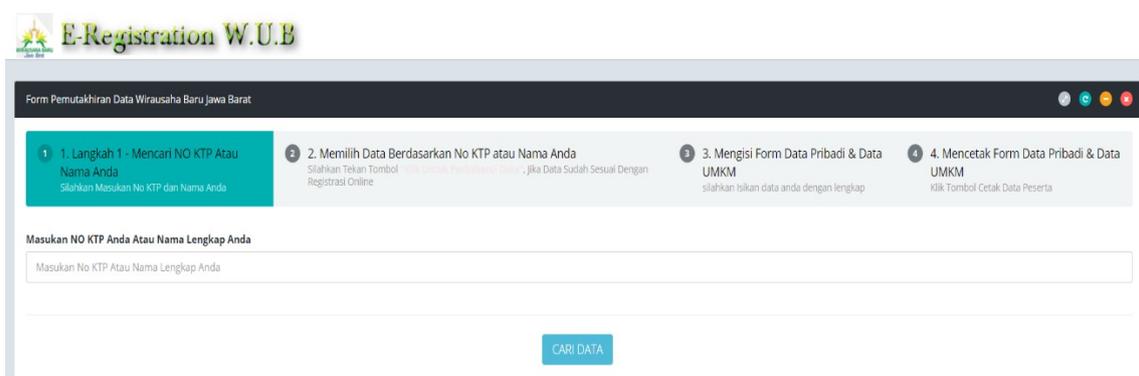


Figure 3. The registration system for the UPTD for education and training in West Java entrepreneurial cooperatives.

Database or database used to store data and information used in the system. The database used in the Implementation of the Dashboard Information System for New Entrepreneurs comes from the participant registration system, which sourced from the UPTD integrated system. West Java entrepreneurial cooperative education and training.

The UPTD registration system for cooperative education and training consists of one database and five tables, including entrepreneurs, mentors, employees of sub-district locations, district locations, village locations. The following is the output screen of the entrepreneur table can see in Figure 4.

id	kelamin	tahun_angkatan	lama_usaha_saat_ini	alamat_usaha	rw_2	rt_2	id_kab_kot_2	id
1	P	2014	1-2 Tahun (Startup)	Perum Pol Blok M22	19B	013	005	3205
2	P	2014	0 Tahun (IDE BISMIS)	Jl.Marta	8B	010	001	3273
3	P	2014	1-2 Tahun (Startup)	Jl.Kp Bebedahan	15B	003	004	3273
4	P	2014	5 keatas	jl.duta harapan IX No.1	23B	003	001	3275
5	P	2014	1-2 Tahun (Startup)	Jl.Bebakan Sari I	17B			
6	P	2014	1-2 Tahun (Startup)	Jl.Sekehaji Blok G62	21B	015	006	3204
7	L	2014	1-2 Tahun (Startup)	Jl.Pelita Graha No.15	21B	002	005	3207
8	L	2014	1-2 Tahun (Startup)	Kampung Babakan Oka RT 05 RW 14 Ds. Cikuya Kec. Cicalengk...	71B	014	005	3204
9	L	2014	0 Tahun (IDE BISMIS)		0B			
10	P	2014	1-2 Tahun (Startup)	jl.gading selatan IV No.1	25B	013	004	3204
11	L	2014	3-5 Tahun (Grow)	Perum GMM HS No. 3	19B	010	006	3216
12	P	2014	1-2 Tahun (Startup)	Jl.Cisaranten Kulon No.49	25B	017	001	3273
13	P	2014	3-5 Tahun (Grow)	gg.sekolah	11B	003	007	3214
14	L	2014	1-2 Tahun (Startup)	kp.cibodas	11B	007	002	3217
15	L	2014	0 Tahun (IDE BISMIS)	Jl.R .Syamsudin SH No.5	23B			3272
16	L	2014	1-2 Tahun (Startup)	Kp.Datar Cempaka	17B	007	002	3206
17	P	2014	3-5 Tahun (Grow)	cihanyir tengah	16B	002	002	3211
18	P	2014	3-5 Tahun (Grow)	Jl.Pasir Jati Lama	18B	016	004	3204

Figure 4. Table of entrepreneurs in the UPTD registration system for education and training in West Java entrepreneurial cooperatives.

6. Short range dashboard

The short-range dashboard is a dashboard that displays information on the development of data to be monitored based on the period of the week, month and year. The following are the fields that will use for the short-range dashboard based on the entrepreneur table can be seen in table 2.

Table 2. Short range dashboard

No	Field Name
1	Entrepreneur starting year
2	Entrepreneur period

7. Dashboard information system display design

System design is the process of developing a new system specification based on the results of system analysis recommendations. The following is a system design on the application of the dashboard information system for new entrepreneurs, the following is a system design drawing on the application of the dashboard information system for new entrepreneurs can be seen in Figure 5.

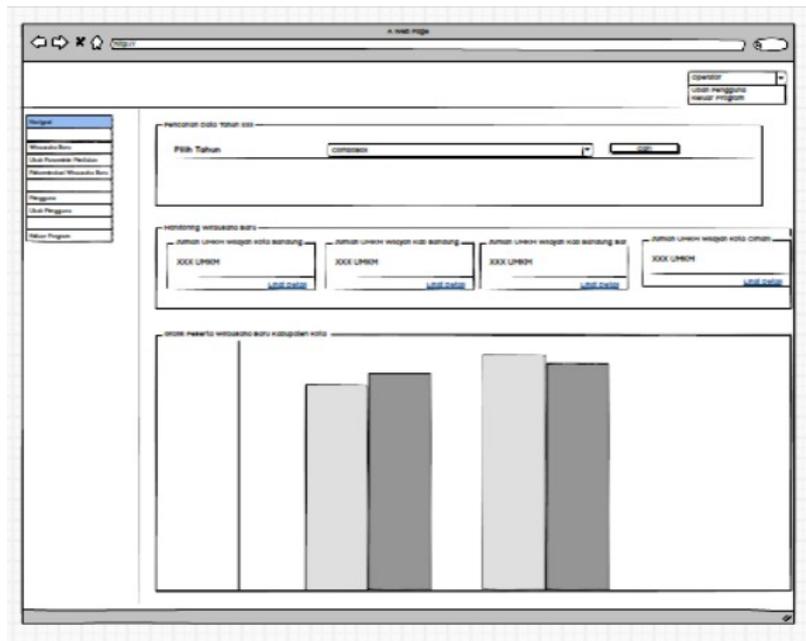


Figure 5. System design on the application of the Dashboard Information System for New Entrepreneurs

8. The design of the dashboard information system architecture design

System architecture is an information requirements plan that describes a model or information concept used in activities that require explicit details of a system to be built. The dashboard information system for new entrepreneurs consists of two users, including the planning section and the training delivery section. The following is a picture of the information system dashboard architecture can be seen in Figure 6.

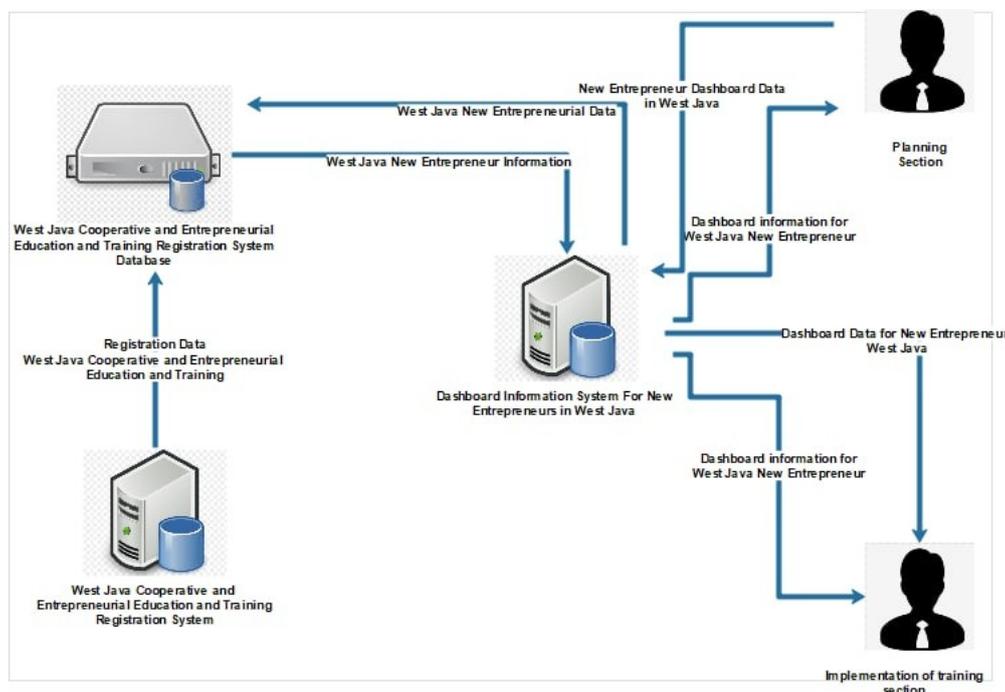


Figure 6. Architecture of the New Entrepreneurial Information System Dashboard in West Java

9. Implementation of Dashboard Information System

The hardware devices used when building and testing can be seen in Table 3.

Table 3. Hardware and Software Spesification

Hardware Type	Spesification
Processor	Intel i3 10 th Gen
Space Hardisk	512 GB SSD + 32 GB intel optane
RAM	12 GB
Sistem Operasi	Windows 10 home single language
Browser	Google Chrome
XAMPP	Versi 3.2.4
Webserver	Apache
PHP Version	7.3
Apache version	2.4.39

The dashboard information system for new entrepreneurs consists of three very important parts, including the data search section, the system dashboard section by year and the new entrepreneurial participant chart section of all districts and cities. The following is the output screen from the information system dashboard for searching by year can be seen in Figure 7.

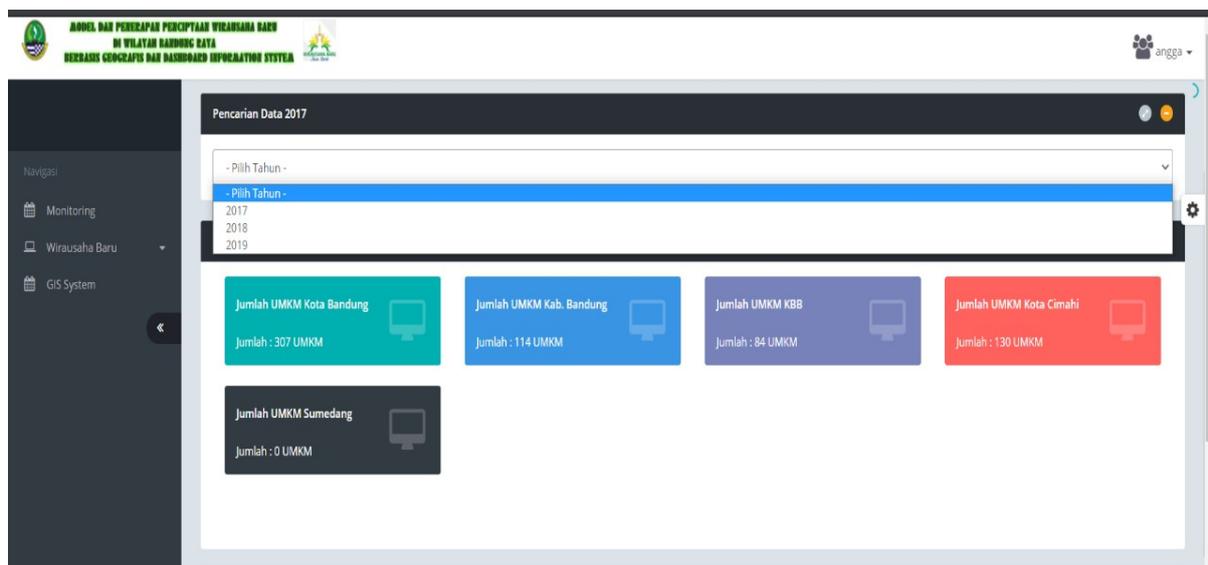


Figure 7. Dashboard information system for searching by year

The following is the output screen of the information system dashboard for graphs of new entrepreneurial participants of all cities and districts based on the selected year can be seen in Figure 8.

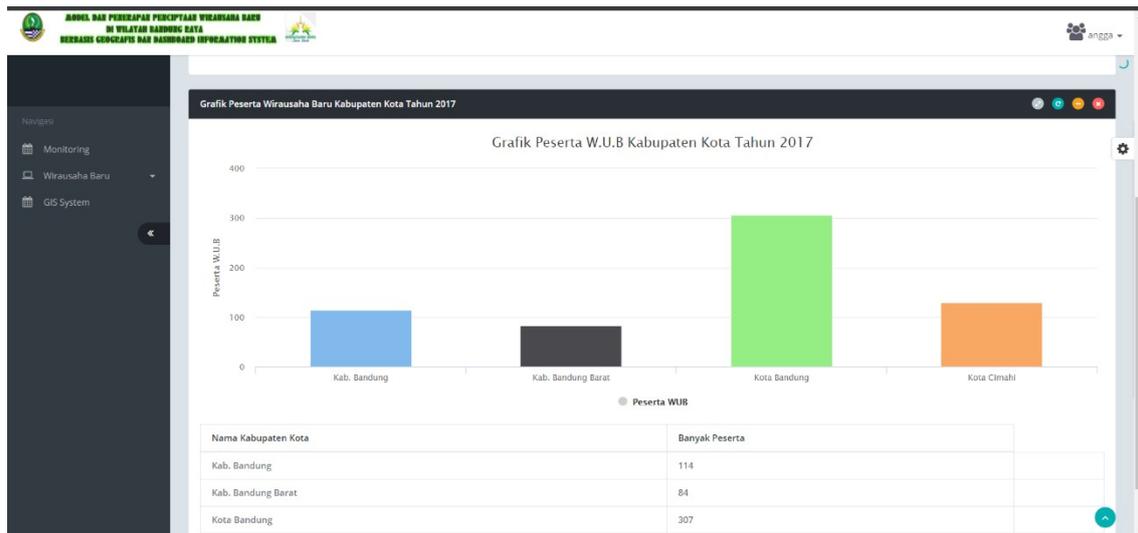


Figure 8. Dashboard information system to graph new entrepreneurial participants across cities and districts based on the selected year

10. Testing Dashboard Information System

The results of verification and testing can be seen in Table 4.

Table 4. Verification and Testing Result

Testing Items	Verification Result
Login process	Successfully
Data monitoring	Successfully
Output graphic	Successfully
Filterisasi data	Successfully
Logout	Successfully

Based on the testing results in table 2, the total acceptances from 25 test items were found to be 100% successful and as expected. This research has produced an application that can be used by the public as a reference in obtaining information related to entrepreneurship opening in the form of a dashboard. This system in providing recommendations is easier to understand because it displays data in the form of graphs, not in the form of a geospatial display [12]. The results of the implementation of the test also show that 100% of the functional system can run well as expected. The results obtained can have an impact on the community so that there is no mistake in determining the plan to open a business.

11. Conclusion

The availability of information is needed by every system user. Applications in this study can help people who will open a business by paying attention to some of the information presented in the form of charts and system dashboards.

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References

- [1] Rasmussen, N. H., Bansal, M., & Chen, C. Y. (2009). *Business dashboards: a visual catalog for design and deployment*. John Wiley & Sons.
- [2] Vilarinho, S., Lopes, I., & Sousa, S. (2018). Developing dashboards for SMEs to improve performance of productive equipment and processes. *Journal of Industrial Information Integration*, 12, 13-22.
- [3] Bassil, Y. (2012). A simulation model for the waterfall software development life cycle. *arXiv preprint arXiv:1205.6904*.
- [4] Alfeno, S., & Rifai, D. (2019). Utilization of the Django Framework as a Dashboard Model Information System for Raw Material Inventory on PT Bimasakti Karyaprima. *Aptisi Transactions On Technopreneurship (ATT)*, 1(2), 192-202.
- [5] Shawahna, R. (2019). Development of key performance indicators to capture in measuring the impact of pharmacists in caring for patients with epilepsy in primary healthcare: a Delphi consensual study. *Epilepsy & Behavior*, 98, 129-138.
- [6] Zdonek, I. (2020). Project Indicators Visualization Using an Interactive Dashboard. *Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska*, (143 Contemporary Management) pp 193-206.
- [7] Wang, L., & Zheng, D. (2020). Integrated analysis of energy, indoor environment, and occupant satisfaction in green buildings using real-time monitoring data and on-site investigation. *Building and Environment*, 182, 107014.
- [8] Cronmiller, J. G., & Noble, B. F. (2018). Integrating environmental monitoring with cumulative effects management and decision making. *Integrated environmental assessment and management*, 14(3), 407-417.
- [9] Shanmugalingam, K., Chandrasekara, N., Hindle, C., Fernando, G., & Gunawardhana, C. (2019, December). Corporate IT-support Help-Desk Process Hybrid-Automation Solution with Machine Learning Approach. In *2019 Digital Image Computing: Techniques and Applications (DICTA)*, pp. 1-7.
- [10] Ohyver, M., Moniaga, J. V., Sungkawa, I., Subagyo, B. E., & Chandra, I. A. (2019). The Comparison Firebase Realtime Database and MySQL Database Performance using Wilcoxon Signed-Rank Test. *Procedia Computer Science*, 157, 396-405.
- [11] Setiyadi, A., & Setiawan, E. B. (2018, August). Information System Monitoring Access Log Database on Database Server. In *IOP Conference Series: Materials Science and Engineering*, 407(1), p. 12110.
- [12] Kurniasih, D., & Setiyadi, A. (2019, November). Geographic Information System for Mapping New Entrepreneurs in West Java. In *IOP Conference Series: Materials Science and Engineering*, 662(2), p. 022126.