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Implementation of Student Data Applications at Tinta Emas Vocational High School

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ABSTRACT

Every organization expects convenience, speed, efficiency and accuracy in their activities, but the level of mastery a technology in each person varies, it becomes a factor in the difficulty of implementing a technology directly. SMK Tinta Emas, is an educational organization that has a vision to improve services in the school service information system to make easier student registration process. This system will accelerate the work process and achieve work effectiveness. The problem that occurs at SMK Tinta Emas is how to implement the application for staffs and teachers with various information technology knowledge backgrounds therefore in the application later there will not be many obstacles that occur due to errors in the use of student data. The community service team as an intermediary between the makers of the student data system involved in the system was asked to provide direction in socialization and education. Finally, the community service team hopes that this implementation and socialization will produce good results for the smooth process of modernizing school student data by applying information technology.

Keywords: *Information Technology, Aplicationt, Student Data*

1. INTRODUCTION

The development of technology in the modern era is now rapid increasingly. It makes a lot jobs that previously could only be done simply are now more efficient. Users can do many things without going through difficulties while saving time in implementation process. One of the technological developments that we can see is the use of increasingly varied web-based applications. According to **(Subhan, 2013)**, a system or application is a collection of elements or components that interact with each other to process input into output. While **(Sidik, 2012)** PHP is a programming language that makes HTML documents executed on a web server. Application web-based developed with the PHP programming language can facilitate activities an agency or company that was previously completed simply becomes more easy and efficient. Web-based applications can also be created or developed using several design methods and various programming languages.

Processing data into useful information is the advantage of computers. **(Sutabri, 2012)**.states that the system is basically a group of elements that are closely related to one another, which function together to achieve certain goals. The attendance system that is currently being built can make it easier for admins or certain parties to monitor attendance **(Karthika *et al.,* 2014)**. Where student data is one of the main supports that can support

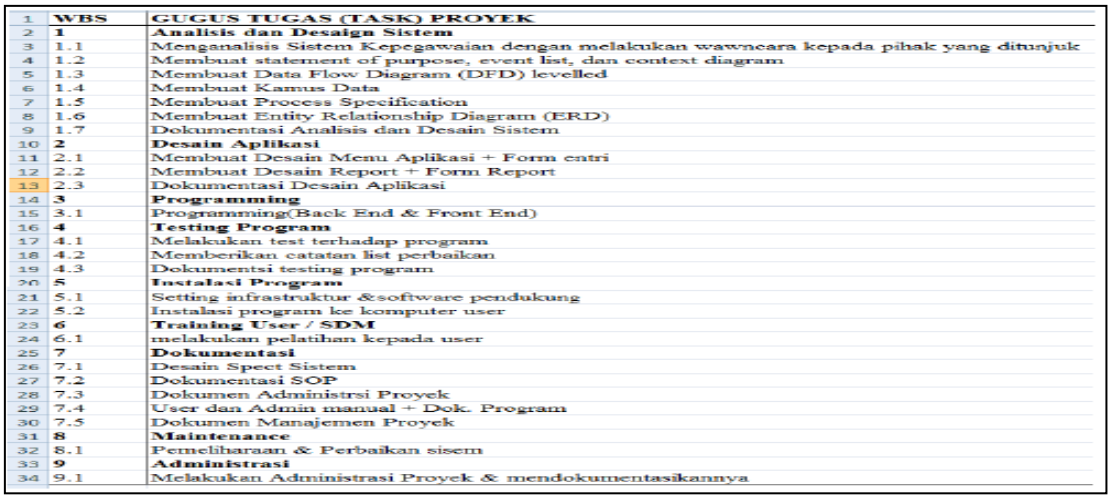
every activity in it. A good data processing system can always overcome the problems that occur and produce information precisely, quickly and accurately. A good processing system can overcome the problems that occur and can produce precise, fast and accurate information **(Eva, 2016)**. The information will be very useful for those who need it. SMK Tinta Emas Indonesia is one of the schools located in Gg. Asem Jaya 3 No.13 Mustika Jaya Mustikajaya, namely in the city of Bekasi, West Java 17158. This vocational school has been established since 2007. The system for processing new student admissions data and storing student data still uses the manual and old method, at the beginning of grade 10, the school withdraws data from the original school Via Web Dapodik, then all of our data will be validated according to current conditions. The update data will always be updated in real-time via Dapodik, however for student data storage on the computer it is still independent and separate, thus the risk of data loss will be greater. Meanwhile, the flow of new student admissions is through the Online System by filling out the Registration Form. Furthermore, the responsible teacher/staff must select each form that is filled out by the candidate or guardian of the student. In addition, without an information system that supports new student admissions and centralized student data storage, it will have a negative impact on the school because Based on these problems, the solutions offered and desired by the management and members of SMK Tinta Emas are as follows:

1. Provide knowledge to administrators and teachers to provide insight for them in the study of SMK Tinta Emas.
2. Provide guidance and direction on how to use the application of student data applications at the Tinta Emas school so that it can be used in the recitation of SMK Tinta Emas
3. Provide direct examples of presentation training materials at SMK Tinta Emas so that they can be used by teachers and administrators.

In general, it can be said that this activity aims to provide knowledge and applications to make it easier to manage student student data so that it can be used or carried out by teachers in the SMK Tinta Emas environment. The targets to be achieved in the Community Service Program activities regarding the implementation and socialization include: Participants are teachers and administrators of SMK Tinta Emas, expected to have a desktop computer or use network facilities at SMK Tinta Emas. Organizing the socialization of the use of presentation applications at SMK Tinta Emas effectively and efficient. Optimizing using the student data application at SMK Tinta Emas.

2. METHOD

Creation and Application of Student Data Applications at the Tinta Emas School. Using the software project management method, **(Alusyanti & Dewi, 2014)** suggest that Project Management is necessary because software project development must always be subject to budget and schedule constraints set by the software organization. There are 3 activities of the basic functions of project management, namely planning, implementation and control. Of the three activities, control over resources in a project includes manpower, equipment (machine), materials (materials), money (money) and methods (method) **(Ridlo & Saihul, 2017).** Software is an intangible product, thus there is no standardization governing the development process. Activities in software project management are broadly the same as management activities in general. According to **(Gilang, 2018)** In a project plan, the WBS Work Breakdown Structure has been defined as a representation of the total work or stages, including from the beginning to the end of the project, which has a role in the success of a project. The implementation of the community service (abdimas) team uses a work breakdown structure, a method to be able to logically and systematically solve a project into several project parts, so that the tax plan is contained in the WBS.



	WBS	GUGUS TUGAS (TASK) PROYEK
2	**1**	**Analisis dan Desaign Sistem**
3	1.1	Menganalisis Sistem Kepegawaian dengan melakukan wawncara kepada pihak yang ditunjuk
4	1.2	Membuat statement of purpose, event list, dan context diagram
5	1.3	Membuat Data Flow Diagram (DFD) levelled
6	1.4	Membuat Kamus Data
7	1.5	Membuat Process Specification
8	1.6	Membuat Entity Relationship Diagram (ERD)
9	1.7	Dokumentasi Analisis dan Desain Sistem
10	**2**	**Desain Aplikasi**
11	2.1	Membuat Desain Menu Aplikasi + Form entri
12	2.2	Membuat Desain Report + Form Report
13	2.3	Dokumentasi Desain Aplikasi
14	**3**	**Programming**
15	3.1	Programming(Back End & Front End)
16	**4**	**Testing Program**
17	4.1	Melakukan test terhadap program
18	4.2	Memberikan catatan list perbaikan
19	4.3	Dokumentsi testing program
20	**5**	**Instalasi Program**
21	5.1	Setting infrastruktur &software pendukung
22	5.2	Instalasi program ke komputer user
23	**6**	**Training User / SDM**
24	6.1	melakukan pelatihan kepada user
25	**7**	**Dokumentasi**
26	7.1	Desain Spect Sistem
27	7.2	Dokumentasi SOP
28	7.3	Dokumen Administrsi Proyek
29	7.4	User dan Admin manual + Dok. Program
30	7.5	Dokumen Manajemen Proyek
31	**8**	**Maintenance**
32	8.1	Pemeliharaan & Perbaikan sisem
33	**9**	**Administrasi**
34	9.1	Melakukan Administrasi Proyek & mendokumentasikannya

Figure 1. List of Tasks for Application of Student Data Applications at the Tinta Emas School

Figure 1 shows list of tasks for application of student data applications at the Tinta Emas School while list of milestones for making and implementing student data applications at the Tinta Emas School shown in the Table 1.

Table 1. List of Milestones for Creating and Implementing Educational Data Applications

Milestone	Date
Start project	3/2/2021
Project charter signed	3/15/2021
Proposal approved	4/11/2021
System analysis results are approved	05/9/2012
Database structure set	05/16/2021
System interface design approved	06/27/2021
Program completed	06/28/2021
System documentation completed	7/4/2021
System manual document completed	7/10/2021
Implemented system	07/16/2021
Training completed	07/17/2021
Project completed	08/18/2021

The stages of the implementation method are as follows:

1. Beginning of Implementation
   a. Data collection

      The method of collecting data was by direct observation, namely the abdimas team asked the address of SMK Tinta Emas Indonesia, one of the schools located in Gg. Asem Jaya 3 No.13 Mustika Jaya Mustikajaya, which is in the city of Bekasi, West Java 17158. This vocational school has been established since 2007, this is done to obtain data and information to support abdimas activities.

      Project Scope: The project to build a school student data application is a project to build a desktop-based student application at the SMK Tinta Emas Bekasi school. The information system that will be built is named Students Data Application. Module The

information created includes: student data, attendance, subjects, classes, teacher data, subject teachers, student statistics, student student data reports.

b. Literature Study

Literature studies are carried out by looking for sources from books for material for making student data and references related to journals and other reporting, through internet browsing as needed.

c. Needs analysis

Needs analysis is useful for obtaining data that will be used to support the implementation of activities. Among them are Functional Requirements: From the results of the analysis of the needs of the Tinta Emas Vocational School and application users, a multiuser desktop-based application is needed. The following is a list of system functional requirements required by user level (administrator, functional officer, and teacher/employee). While the non-functional requirements include: The system must use Indonesian, the system must be easy to use and easy to learn, the system should be quickly accessed, the system should have an attractive appearance, the system should be safe to use, the system should be accessible 24 hours a day and 7 days a week, the system should be accessible 24 hours a day and 7 days a week should provide a user guide.

2. Implementation
   a. Socialization of abdimas activities with the direct delivery method through direct practice
   b. Learning using supporting equipment, teachers and administrators can practice directly what is explained by the speaker, discuss, and make exercises
   c. Mentoring provides solutions and answers to problems in practical exercises for making student data.
3. Post Implementation

   Activities at this stage are evaluation of activities, preparation of activity reports and preparation of final reports, and assessment of final results to measure the level of success of participants in participating in the training in the form of collecting exercise files.

3. RESULT AND DISCUSSION

The beginning of the implementation of this service from the beginning determined to find information on the situation that the partner would choose, in determining what we got was SMK Tinta Emas. The communication plan for SMK Tinta Emas, the communication plan, lays out the need for regular communication between team members involved in making and implementing applications for SMK Tinta Emas, communication about routine activities and desired activities, facilities, number of administrators and members, strengths and weaknesses of the school organization and desires. in the future. During the next discussion we told our background and interests for community service activities and then we proposed cooperation in training to cover the shortage in human resources in the field of information technology and then we were directed to ask permission from the management, namely the principal of the SMK Tinta Emas Vocational School.

From that meeting, we exchanged information about the state of the Teachers and Students of SMK Tinta Emas Vocational School who wanted to hold student student data applications and their use, they reasoned in the weaknesses and shortcomings that existed in terms of storage, processing, and delivery of information that occurred in this school, which includes student data and absenteeism which often occurs because the data that has been processed is not well organized. Furthermore, to optimize the use and value of the benefits of the information system to be built, the system will be made in the form of a desktop-based

application that supports multiuser. So that later it will facilitate the processing of student data, and also the use of student data for the attendance process, and reduce errors in data processing such as duplicate data. Figure 2 shows installation of applications for students of Tinta Emas Vocational High School.

Figure 2. Installation of Applications for Students of Tinta Emas Vocational High School

Figure 3 shows the installation of the application that is shown to the participants by uses infocus in front of the participants.

Figure 3. Installation of Applications for Students of Tinta Emas Vocational High School

All activities in practice were initially opened by reading prayers and remarks from the Principal of SMK Tinta Emas, Dra Eriyani and representatives from the abdimas team leader and discussing material, questions and answers, exercises, and closing.

Figure 4. Implementation of the Training on Application of Student Data for SMK Tinta Emas Students

At the time of the implementation of the training service, starting from explaining technically the introduction of the program and how to properly and correctly open and operate the functions and benefits of the applications that have been made, then introduce the functions of the program and practice directly to participants how to open student data, store student data, create student data and introduce the menu bar, the tools bar of the student data program, and practice creating student data. The technical implementation shown at figure 4 of the training was carried out for one day because according to the wishes of the partners, the abdimas team looked to measure the success of these activities from the results of training from participants to create student data for one week, and the result was that 90% of the training participants succeeded in using the student data application. It is reinforced by the opinion of **(Alghofari *et al*, 2014)**, discussing the academic system which includes student status, data lecturers and education staff as well as daily news to be used as a value input process as shown at figure 5.

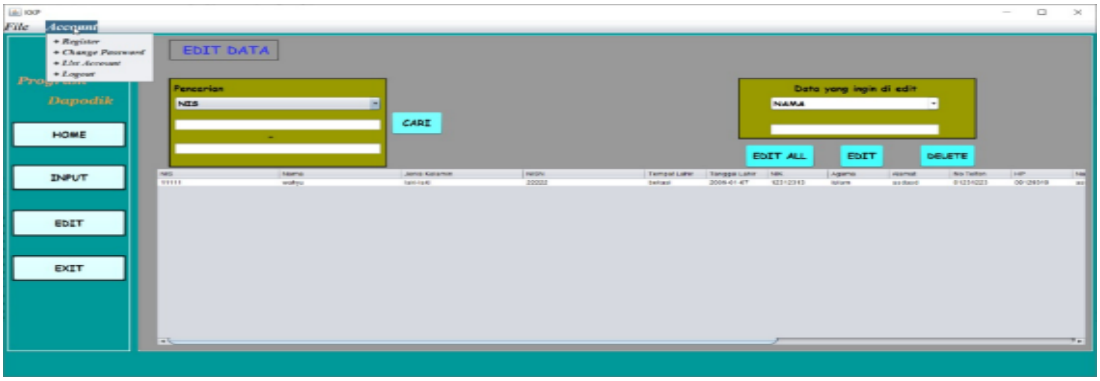


Figure 5. Student Data Applications

In general, the training activities were said to be successful, as seen from the enthusiasm of the participants to follow the event in an orderly manner and provide an interest in the discussion between the presenters and other participants well, understand the material provided, and the results of the training participants were enthusiastic in collecting exercises for one week. The results of the quality of the implementation of activities. Reinforced opinion of **Tan *et al* (2014)**, discusses a management information system that can store

documents, update documents, the availability of information in the context of making decisions to lectures. Figure 6 shows description of quality management activities for application of student data applications.

No	Deskripsi Proyek Cek Mutu	
1	Analisis Sistem	
2	Survei dan interview dengan stakeholder -	-
3	Pengumpulan data primer dan sekunder -	-
4	Analisa sistem berjalan √	√
5	Pemodelan proses bisnis √	√
6	Review hasil analisis dengan stakeholder √	√
7	Perbaikan analisis √	√
8	Review hasil perbaikan analisis √	√
9	Desain Database Sistem	√
10	Perancangan database √	√
11	Pengujian struktur database √	√
12	Perbaikan rancangan database √	√
13	Desain antarmuka sistem	
14	Pengembangan antarmuka sistem √	√
15	Review rancangan antarmuka dengan stakeholder √	√
16	Perbaikan rancangan antarmuka √	√
17	Koding dan Testing	
18	Melakukan pengkodingan √	√
19	Review koding (test unit) √	√
20	Dokumentasi sistem √	√
21	Penyusunan dokumentasi sistem √	√
22	Pembuatan manual sistem √	√
23	Penyusunan manual sistem √	√
24	Implementasi	
25	Instalasi software √	√
26	Instalasi sistem ke server √	√
27	Setting sistem dan database √	√
28	Instalasi software √	√
29	Pelatihan operator dan admin √	√
30	Penutupan proyek	
31	Penyusunan laporan akhir √	√
32	Penyusunan dokumen proyek internal √	√
33	Mendapatkan persetujuan stakeholder √	√
34	Pembagian dokumen proyek internal √	√
35	Penutupan proyek √	√
36	Penyusunan laporan akhir √	√

Figure 6. Description of Quality Management Activities for Application of Student Data Applications

4. CONCLUSIONS

The creation and application of Student Education Data Applications at SMK Tinta Emas resulted in training activities that were participated in by several school stakeholders, teachers and employees, along with the resulting output in the form of an application that was made, namely the application of SMK Tinta Emas school student data. Optimizing the use of student student data applications in schools continuously and technically to understand questions from participants directly seeing how participants make student data, therefore we from the community service team provide advice to principals and teachers to use the applications that have been made.

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