

IMPLEMENTATION AND DEVELOPMENT OF E-VOTING SYSTEM FOR ELECTION OF STUDENT COUNCIL CHAIRPERSON OF SMP NEGERI 10 PEKANBARU

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ABSTRACT

Intra-School Student Organization is an organization that is at the school level in Indonesia, starting with junior high schools and senior high schools. The student council is managed and managed by students who are chosen to be student council. Usually this organization has a mentor from the teacher chosen by the school. Student council members are all students who are in one school where the student council is located. In an effort to elect the student council president, the researchers created a web-based information system in selecting the student council president. E-voting is an electoral system where data is recorded, stored and processed in the form of digital information. In the election of the chairman is always a problem in carrying out his election, such as having to prepare space, paper, and others. And after that it takes time in completing the vote count, it also requires a lot of people or committees in carrying out the chairman's election, lack of transparency in vote counting, there are still errors in vote counting.

Keywords : E-voting, Election, OSIS, Mysql, Codeignieter, School.

1. INTRODUCTION

Today's technology world is not a scary thing anymore but it has become a necessity in every line of life. Almost everyone uses technology in their activities. Including our students from elementary to high school / vocational school can use technology, especially the name Mobile. There are bad and good sides in using IT among students, it depends on us as parents or teachers to guide them in utilizing technology. Information is data that is processed into a form that is more useful and more meaningful for the recipient. The source of information is data. Reality data that describe a real event and unity. Events (events) are events that occur at certain times (Johan, et. al., 2017).

Intra-School Student Organization is an organization that is at the school level in Indonesia, starting with junior high schools and senior high schools. The student council is managed and managed by students who are chosen to be student council. Usually this organization has a mentor from the teacher chosen by the school. Student council members are all students who are in one school where the student council is located. In an effort to elect the student council president, the researchers created a web-based information system in selecting the student council president. E-voting is an electoral system where data is recorded, stored and processed in the form of digital information (Alvarez, et. al., 2013). The application of e-voting is considered capable of overcoming problems arising from conventional voting (Tsahkna, 2013). E-Voting is a system for making ballots, giving, counting, showing votes, and generating and maintaining audit tracks electronically and digitally. An understanding of e-voting refers more to the process of utilizing electronic devices to better support the smooth process and also the automation model that allows minimal interference from individuals in all processes (Garg, et. al., 2019).

In the election of the chairman is always a problem in carrying out his election, such as having to prepare space, paper, and others. And after that it takes time in

completing the vote count, it also requires a lot of people or committees in carrying out the chairman's election, lack of transparency in vote counting, there are still errors in vote counting. From the problems above, the researcher wants to make an information system in the election of the student council president. In developing this information system researchers used the Codeignieter and MySql Framework(Putri & Supriyono, 2019).

2. LITERATURE REVIEW

Related research that has been conducted with web-based object oriented are as follows: Research conducted by Harma Oktafia Lingga Wijaya, in 2017 researched about Rantau Jaya Village (Lake) is a village in Karang Jaya sub-district, Musi Rawas Utara Regency, with geographical location at -2.8513807 and longitude 102.8111672, The electoral system in this village still uses the conventional electoral system, the voting and counting process in the conventional election still has many weaknesses including the wrong voters in terms of marking on the ballot paper, because the legal provisions of the marking are unclear so many ballots are in declared invalid, and the second is the announcement of the results of a slow election because they have to do calculations manually and fraud often occurs, and the security of the data is very important in this system because the election is a crucial problem in the community so security is needed to secure the results of the election. Research conducted by Daha & Cristal (2017) In this election it is usually done in two ways, namely voting through writing the name chosen and through sending from the chairman of the commission. This is considered ineffective because it does not consider the candidates' vision, mission, and performance weights, which is why an online voting system has been made that can cover these shortcomings. The system development methodology used in this study is the Simple Additive Weighting (SAW) method. The software used in building this application is PHP (Pear Hypertext Prepocessor) as a programming language, MYSQL as a database server, Sublime Text 3 as a support. The KPPM Jatiwringin E-voting System is a system that provides information about candidates about their vision, mission, and performance weights that can be assessed by voters anywhere and anytime so that all youths both in Jatiwringin and outside the city can participate in this election.

Research conducted by Roni Setiawan (2019), Jawi Wetan Jatiwringin Christian Church is a church located in Jatiwringin Hamlet, Sukoharjo Village, Kayen Kidul District, Kab. Kediri. This church has 7 commissions, one of which is the KPPM (Youth and Student Development Commission). This commission handles the youth alliance in it both in worship and in existing problems. In the KPPM, there is a change of youth leaders in every two years. In this election it is usually done in two ways, namely voting through writing the name chosen and through sending from the chairman of the commission. This is considered ineffective because it does not consider the candidates' vision, mission, and performance weights, which is why an online voting system has been made that can cover these shortcomings. The system development methodology used in this study is the Simple Additive Weighting (SAW) method. The software used in building this application is PHP (Pear Hypertext Prepocessor) as a programming language, MYSQL as a database server, Sublime Text 3 as a support. The KPPM Jatiwringin E-voting System is a system that provides information about candidates about their vision, mission, and performance weights that can be assessed by voters anywhere and anytime so that all youths both in Jatiwringin and outside the city can participate in this election. Research conducted by Diana and Febrianti (2017), Prayer is one means to communicate between the servant and Allah SWT in certain

circumstances. In addition, prayer as a spirit of worship or essence of worship as stated by Rasulullah SAW. At present many children are not aware of the existence of various kinds of daily prayers due to their lack of understanding of the existence of prayer in daily life and also the teaching of the teacher and from the child's parents. The purpose of this study is to design a daily prayer application for android-based Muslim children using the MVC method. Model-View-Controller (MVC) is a concept used to encapsulate data along with processing (model), isolate it from the process of manipulation (controller) and view (view) to be represented on a user interface. From the results of the analysis, design, testing and implementation of programs that have been carried out on the application of the Daily Prayer for Children it is concluded that the Model View Controller can be applied in application development and of course the program or application is more structured. Research conducted by Mara Destiningrum & Qadhli Jafar Adrian (2017), Researchers develop a Web-Based Doctor Scheduling Information System that can be a solution for data processing and can provide information about

3. RESEARCH METHODS

Previous research has been carried out at Pekanbaru 10 Public Middle School. The study was conducted from November 8, 2019 to October 31, 2020. In carrying out this research a framework is needed as a guide in compiling the research. The figure below explains in general the steps taken in carrying out this research.



Figure 1. Research frameworks

4. RESULTS AND DISCUSSIONS

This analysis process is the decomposition of a whole system into component parts with a view to identifying and evaluating problems, opportunities, obstacles that occur and the expected needs so that improvements can be proposed. The Analysis Phase is an important stage, because errors in this stage will cause errors at the design and implementation stages. System analysis is needed to meet the need for data and procedures for an ongoing system. After the analysis and planning phase, we can implement the system according to the planned needs. In this implementation stage the researcher has done the coding and display design according to the plan. So that the processes in the system that are running can be better understood, it can be seen from the activity diagram below:





Implementation of this display illustrates what is in the system. Location of the navigation menu that will be displayed.

a. Front page

Main Menu Display is an interface that will appear on every page when opening the e- voting system .

Aplikasi Pemilihan Ketu	OSIS SMP Negeri 10 Pekanbaru	Tahun 2020 Version 1.0
-------------------------	------------------------------	------------------------

800 700 600 500 400 300					
200					
0 + N;	adin & Riski	Nabila F & Bunga		Rahmat & Fellysia W P	
Nadin 8 Kelas: 8.4	& Riski 8 dan 7.8	Nabila F & B Kelas : 8.3 dar	unga 17.3	Rahmat & Felly Kelas: 8.7 dan	ysia W P
Persentase Suara	9.01%	Persentase Suara	6.76%	Persentase Suara	76.5%
Jumlah Suara	84	Jumlah Suara	63	Jumlah Suara	713
Total Suara	932	Total Suara	932	Total Suara	932
Nadin 8	& Riski	Nabila F & Bi	Inga	Rahmat & Felly	sia W P

Figure 3. Front page

b. Login page

Login interface is the page that first appears when the website is opened which is used to verify the user by entering the correct username and password.

HALAMAN LOGIN	
Silahkan masukkan username dan password	
Username	1
Password	₽
	MASUK

Figure 4. Display Login

c. Admin Page Display

Admin main menu interface is a display that appears after the admin has logged in, where the admin can process student data, candidate data and user data, and see data that has not been voted, already selected and recapitulated.

Aplik	asi Pemil	ihan Ketua	OSIS SMP NE	GERI 10 PEKANB	ARU Tahun	2020 Versio	on 1.0	
800								
700								
600 500								
400								
300								
100						_		
0		Nadin & Riski		Nabila F &	Bunga		Rahmat & Fellysia W P	
							T	
	Na	din & Riski		Nabila	F & Bunga		Rahmat & Felly	sia W P
	Kel	as : 8.4 dan 7.8		Kelas :	8.3 dan 7.3		Kelas : 8.7 dan	8.8
Perser	ntase Suara		9.01%	Persentase Suara		6.76%	Persentase Suara	76.5%
Jumla	h Suara		84	Jumlah Suara		63	Jumlah Suara	713
Total S	iuara		932	Total Suara		932	Total Suara	932
	Na	adin & Riski		Nabila	F & Bunga		Rahmat & Fellys	sia W P

Figure 5. Admin Display

d. Student Data Display

The student data menu interface is the display that appears after the admin clicks on student data, so the admin can add, change, and delete student data.

Aplik	Aplikasi Pemilihan Ketua OSIS SMP NEGERI 10 PEKANBARU Tahun 2020 Version 1.0											
🏝 Up	load Data Pe	serta Didik		-	📥 Unduh Form	nat Excel P	eserta Didik		-			
Import Choo Uplo	Import File 1. Silahkan unduh format excel peserta didik, pada saat melakukan import/upload berhasil maka otomatis juga akan membuat user n password untuk login Upload 2. Format Tanggal harus dalam bentuk Format Date. 3. Username menggunakan nis sedangkan Password menggunakan tanggal lahir peserta didik ex. 2010-02-02 III											
Hala	aman Dat	a Peserta	Didik				🕇 Tamb	ah Data 🛛 💼 Hap	us Semua			
	1	≜ No	↓† NIS	ţţ.	NISN It	Nama Siswa	ţţ.	Kelas	11			
	Û	1	195910081983032003			Hafizah		Guru				
	B	2	195912181984032002		•	Ismawati Lub	s	Guru				
	Ē	3	196001051986032004			Mardianis		Guru				
	Ê	4	196012061984032004			Nurthaibah		Guru				
	Ē	5	196203151985121001			Jon Kanedi		Guru				
	Ê	6	196208151991032002			Dewi Anggren	i	Guru				

Figure 6. Display Student Data

e. Add Student Data Page

Admin main menu interface is the display that appears after the admin clicks the add menu on the student data menu.

Aplik	asi Pemili	han Ketua (OSIS SMP Nege	ri 10 Pekanbar	u Tahun 20	19 Version 1.0	
Hala	aman Tan	nbah Data	Siswa				
NIS					Tanggal Lahir		
					yyyy-mm-dd		
NISN					Kelas		
Nam	a Siswa				Jenis Kelamin		
					Laki-Laki		T
Temp	oat Lahir						
					Simpan	Batal	

Figure 7. Display Add Student Data

f. Candidate Data Display

The candidate data menu interface is the display that appears after the admin clicks on the candidate data, so the admin can add, change, and delete candidate data.

	Data Sisv	va I	Data K	andidat	Dat	a Belum Memilih	Data Sudah I	Memilih	Rekap Suara	Pengaturan 👻	Keluar				
plikasi Pemilihan Ketua OSIS SMP NEGERI 10 PEKANBARU Tahun 2020 Version 1.0															
Halaman Data Kandidat															
Tatt		Jutu	Nui	Iuluu										+ Tai	mbah D
Shov	V 10 ~	entrie	s									Search:			
	ļž	No	.↓↑	Foto	ĴĴ	Nama Kandidat	ĴĴ	Tempat La	hir ↓†	Tanggal Lahir	J†	No HP	.↓↑	Kelas	.↓↑
2	Ê	1				Nadin & Riski				0000-00-00				8.4 dan 7.8	
	â	2				Nabila F & Bunga				0000-00-00				8.3 dan 7.3	
	đ	3		5		Rahmat & Fellysia	WP			0000-00-00				8.7 dan 8.8	
Show	ving 1 to 3 o	of 3 entr	ies										Prev	ious 1	Next

Figure 8 . Candidate Data Display

g. Data Display Not Voted Yet

The data menu interface is not selected yet is the display that appears after the admin clicks on the data not yet selected, so the admin can see the data of students who have not chosen the student council president.

	Data Sisw	ra Data Kandidat	Data Belun	n Memilih	Data	Sudah Memilih	Rekap Suara	Pengaturan 👻	Keluar			
plikasi Pemilihan Ketua OSIS SMP NEGERI 10 PEKANBARU Tahun 2020 Version 1.0												
Data	Peser	ta Didik Belu	m Mem	ilih								
No	11	NIS	11	NISN	11	Nama Siswa		11	Kelas	11	Status Pilih	11
1		196012061984032004		-		Nurthaibah			Guru		Belum Memilih	
2		196203151985121001				Jon Kanedi			Guru		Belum Memilih	
3		196303051991031003		-		Abdullah			Guru		Belum Memilih	
4		196303201990032003		÷		Erlinawati			Guru		Belum Memilih	
5		196512311990032027		-		Dasni			Guru		Belum Memilih	
6		196706261993032009		-		Har Azni			Guru		Belum Memilih	
7		196904031994032006		-		Yulinar			Guru		Belum Memilih	
8		196909291993032009		-		Sri Yati			Guru		Belum Memilih	
9		197705102009012001		-		Indah Mahfudiyah			Guru		Belum Memilih	

Picture 9. Data Display Not Yet Voted

h. Data Display Already Selected

The data menu interface chosen is the display that appears after the admin has clicked on the data selected, so the admin can see the data of students who have chosen the student council president.

	Data Sisw	a Data Kandidat	Data Belum I	Memilih	Data Si		kap Suara – F	Pengaturan 👻				
olikasi Pemilihan Ketua OSIS SMP NEGERI 10 PEKANBARU Tahun 2020 Version 1.0												
ata Peserta Didik Sudah Memilih												
No	11	NIS	11	NISN	11	Nama Siswa		1L	Kelas	1t	Status Pilih	.↓†
1		195910081983032003		-		Hafizah			Guru		Sudah Memilih	
2		195912181984032002		-		Ismawati Lubis			Guru		Sudah Memilih	
з		196001051986032004		-		Mardianis			Guru		Sudah Memilih	
4		196208151991032002		-		Dewi Anggreni			Guru		Sudah Memilih	
5		196211051985122003		-		Rosida			Guru		Sudah Memilih	
6		196309251987032005		-		Hasni Hastuti			Guru		Sudah Memilih	
7		196401011984122002		÷		Syofniarti			Guru		Sudah Memilih	
8		196407022007012002		÷		Asfiarti			Guru		Sudah Memilih	
9		196501311998032002		-		Ermidani			Guru		Sudah Memilih	

Figure 10. Display Data Already Voted

i. Voice Recap Page

The voice recap menu interface is the display that appears after the admin clicks on the voice recap, so the admin can see the results of the vote count by the system.

Aplik	asi Pemili	ihan Ketua (OSIS SMP NEG	ERI 10 PEKANBA	ARU Tahun	2020 Version	1.0
800							
600							
500 400							
300							
100							
0		Nadin & Riski		Nabila F &	Bunga	,	Rahmat & Fellysia W P
Rekap	Jumlah	Suara Kand	lidat				
No							
110	1	Nama Kandidat				Jumlah Su	iara
1	1	Nama Kandidat Rahmat & Fellysia W	I P			Jumlah Su	lara
1		Nama Kandidat Rahmat & Fellysia W Nadin & Riski	I P			Jumlah Su 713 84	ara

Figure 11. Display Voice Recap

j. User Data Page

The user data menu interface is the display that appears after the admin clicks settings and then the user, so the admin can set users based on access rights in the system.

Apli	ikasi F	emiliha	n Ketua	OSIS SMP NEGER	1 10 PEKANBA	ARU Tahun	2020 Version	1.0		
			_							
На	lama	n Data F	Penggun	а						
5	how		N-05-					Soard		
S	10 10	 entries 						Search		
	17	No	1 Username	tî	Nama Lengkap			11	Level 1	↓î
		1	admin		Administrator				Admin	
		2	20198188		ANYA PUTRI DEWI				Siswa	
		3	20198189		ASSYA HAMADA ZUR	RIAT AZHAR			Siswa	
		4	20198190		BIANCA BILBINA AZZ	ZAHRA			Siswa	
		5	20198191		DAFA ALYATAMA				Siswa	
		6	20198192		DANIEL ROYUANES S	SIALLAGAN			Siswa	
		7	20198193		DEKA MIKO CHRISTI	AN			Siswa	
		8	20198194		DHEBY ANDARA PUT	RI			Siswa	
		9	20198195		FAHDIL NABILSYAD				Siswa	

Figure 12. User Data

k. Display Add User Data

Admin main menu interface is the display that appears after the admin clicks the add menu on the user data menu.

Aplik	asi Pemili	han Ketua (OSIS SMP Nege	ri 10 Pekanbarı	u Tahun 20	19 Version 1.0	
Halar	nan Tambah	Pengguna					
NIS							
Pass	word						
Pas	sword						
Nama	a Lengkap						
nar	na lengkap						
level							
Ad	min						Ŧ
statu	s						
Ak	tif						×
	01						
	Simpan	ital					

Figure 13. Display Add User Data

1. Main Display of Students Before Voting

The main menu of the student interface is the display that appears after students log in where students can process selected data and view candidate data. In this menu students choose the student council president by clicking the select button.

Home	Data Kandidat	Keluar								
Aplikasi Pemilihan Ketua OSIS SMP Negeri 10 Pekanbaru Tahun 2020 Version 1.0										
	Nadin Siswa Kelas	& Riski : 8,4 dan 7.8	Nabila F & Bunga Siswa Kelas : 8.3 dan 7.3	Rahmat & Fellysia W P Siswa Kelas: 8.7 dan 8.8						
DATA PEMILIH										
IRENE YUSVILIA JAHABAEN LUBIS										
NIS	NIP :			20198199						
Stat	us / Kelas :			(1)						

Picture 14. Display Students Before Voting

m. Candidate Data Pages For Students

The candidate data menu interface for student views that appears after students click on the candidate data menu.

	Data Kandida	t Keluar							
likasi Pemilihan Ketua OSIS SMP Negeri 10 Pekanbaru Tahun 2020 Version 1.0									
Halaman Data Kandidat									
			11						
No	Foto	Kandidat	Kelas	Visi & Misi					
1		Nadin & Riski	8.4 dan 7.8	Assalamualaikum Wr.Wb Salam Sejahtera Bagi kita semua Kami calon ketua dan wakil OSIS dari kandidat 1 untuk periode 2019/2020, siap untuk melanjutkan organisasi OSIS dari yang yang baik menjadi lebih baik, sebagaimana dengan amanah dan tujuan yang penuh tanggung jawab Tujuan kami sebagaik ketua dan wakil ketua OSIS untuk SMP 10 Pekanbaru, menjadikan peserta didik yang bertaqwa, berkanatker, dan berbudi pekerti. Agar peserta didik SMP 10 memiliki skapa yang terpuj di an mengharumkan nama baik sekolah ini. Jadi jangan lupa pilih kami ya!!???? 01 Kerja Keras, Cerdas, Tuntas 01 Sekian dari kami Wassalamu'alaikum Wr.Wb					
2		Nabila F & Bunga	8.3 dan 7.3	Assalamualaikum Warahmatullahi Wabarakatuh Kami dari Calon Ketua dan Wakil Ketua OSIS Kandidat 2 SMPN 10 Pekanbaru akan menyampaikan tujuan kami kedepannya apabila kami terpilih nanti sebagai Ketua dan Wakil Ketua OSIS SMPN 10 Pekanbaru Periode 2019/2020.Tujuan kami lalah memajukan prestasi sekolah dalam berbagai bidang dengan melandaskan Keimanan dan Ketaqwaan terhadap Tuhan Yang Maha Esa serta meningkatkan kepedulian siswa tentang PENTINGNYA menjaga kebersihan Ingkungan sekolah.sehingga sekolah menjadi lingkungan yang bersih,asri,dan nyaman dan mengembangkan serta meningkatkan program kerja OSIS yang sudah ada. KANDIDAT 2 SATUKAN JIWA, SATUKAN RAGA, OSIS SMPN 10 PEKANBARU SIAP MENGABDI BANGSA. Sekian dari kami, Wassalamu'a laikum Warahmatullahi Wabarakuth.					
3	7	Rahmat & Fellysia W P	8.7 dan 8.8	Assalamualaikum Warahmatullahi Wabarakatu Salam sejatera untuk kita semua Kami dari kandidat 3 yang diketuai oleh RAHMAD FADHILAH dengan wakil FELISYA WANNA PUTRI memiliki visi dan misi,yang apabila kami terpilih menjadi ketud adn wakil ketua OSIS kami akan berusaha semaksimal mungkin demi mewujudkan visi dan misi kami untuk memajukan SMPN 10 PKU.Karena disini kami bukan hanya memberikan janji tetapi juga bersamaan dengan bukti, JANGAN SIA SIKAN HAK PILIH KALIAN, GUNAKAN DENGAN SEBAKE BAIKYAI JAnzan lupa dukung kami ya					

Figure 15. Display Candidate Data for Students

n. Main Display of Students Before Voting

The main menu of the student interface is the display that appears after the student has logged in where the student has made his choice of the student council presidential candidate.

	Data Kandidat	Keluar									
Aplikasi Pemilihan Ketua OSIS SMP Negeri 10 Pekanbaru Tahun 2020 Version 1.0											
800			-								
700											
500											
400 300											
200											
0	1	ladin & Riski	Nabila F & Bunga	Rahmat & Fellysia W P							
DATA PEMILIH (HALAMAN PESERTA DIDIK)											
	M.RAH	МАТ									
	Anda Sudah	Memilih									
NIS	:				20198205						
Kela	is :				7.1						

Figure 16. Student Display After Voting

5. CONCLUSION

After implementing the application in schools, the school was very satisfied with the results of the voting which were very transparent and very easy to be used by students, while for the students themselves really felt democratic and transparent elections. The problems that occurred last year are no longer felt this year, such as the length of the announcement of the elected Chairperson, the use of large amounts of paper and the final waste, and incurring large costs and time-consuming elections. Whereas using this election system makes everything feel easy and fast, it doesn't take long to implement and can immediately get the results of the vote.

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