Journal of Social and Economics Research
Volume 5, Issue 2, December 2023
P-ISSN: 2715-6117 E-ISSN: 2715-6966
Open Access at: https://idm.or.id/JSER/index.php/JSER

SAACCESS (SIMPAN ARSIP DENGAN ACCESS) APPLICATION DEVELOPMENT AT 11TH STATE SENIOR HIGH SCHOOL SURABAYA

PENGEMBANGAN APLIKASI SAACCESS (SIMPAN ARSIP DENGAN ACCESS) DI SMA NEGERI 11 SURABAYA

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Key words:

application development, archives, Microsoft Access

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Page: 2087 - 2099

ABSTRACT

Archives are the center of memory in every activity in the office. Archives function as a memory center, proof of the existence of the institution, and for the benefit of other institutions. Therefore, there must be good management or management of archives from creation to shrinkage. The main obstacle is the decreasing physical letter storage space, but it's not possible to build a special building for physical letter storage space. Using the type of research with R&D (Research and Development) and prototype development research methods. Development of this archival application uses a Microsoft Access-based application. This research goes through a research procedure starting with information gathering, designing the product quickly, building a prototype, and the final step is that the application is ready to use with an evaluation that has been carried out by experts. The subject is 2 peoples from 11th Senior High School Surabaya administration staff. The trial was conducted in December 2023 and January 2024. The application feasibility results based on material expert validators and media expert validators get a score of 96%. While the results of application feasibility based on administrative staff get a score of 88.8%, which shows the interpretation of "Very Feasible". The development of Microsoft Access-based digital archiving applications uses a prototype development model. The SAAccess application received a feasibility score of 96% from both the material expert validator and the software developer. SAAccess also received a score of 88.8% from the administrative staff of 11th Senior High School Surabaya. It can be concluded that SAAccess is effectively used to manage letters in 11th Senior High School Surabaya digitally.

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pengembangan aplikasi, kearsipan, microsoft access

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ABSTRAK

Kearsipan merupakan pusat ingatan dalam setiap kegiatan di kantor. Kearsipan berfungsi sebagai pusat ingatan, bukti eksistensi lembaga, dan untuk kepentingan lembaga lainnya. Maka dari itu, harus ada manajemen atau pengelolaan arsip yang baik sejak penciptaan sampai dengan penyusutan. Kendala utamanya adalah semakin berkurangnya ruang penyimpanan surat fisik tetapi tidak memungkinkan untuk membangun bangunan khusus untuk ruang penyimpanan surat fisik. Menggunakan jenis penelitian dengan R&D (Research and Development) dan metode penelitian pengembangan prototype. Pengembangan aplikasi kearsipan ini menggunakan aplikasi berbasis Microsoft Access. Penelitian ini melewati prosedur penelitian diawali dengan pengumpulan informasi, mendesain produk secara cepat, membangun prototype, dan langkah terakhirnya adalah aplikasi siap digunakan dengan evaluasi yang sudah dilakukan oleh ahli. Subjeknya adalah 2 orang staf TU. Dilakukan uji coba pada Desember 2023 dan Januari 2024. Hasil kelayakan aplikasi berdasarkan validator ahli materi dan validator ahli media mendapatkan nilai 96%. Hasil kelayakan aplikasi berdasarkan staf tata usaha mendapatkan nilai 88.8%, yang menunjukkan interpretasi "Sangat Layak". Pengembangan aplikasi pengarsipan digital berbasis Microsoft Access menggunakan model pengembangan prototype. Aplikasi SAAccess mendapatkan nilai kelayakan 96 % baik dari validator ahli materi maupun validator ahli media. SAAccess juga mendapatkan nilai 88.8% dari staf tata usaha SMA Negeri 11 Surabaya. Dapat disimpulkan SAAccess efektif digunakan untuk mengelola surat-surat yang ada di SMA Negeri 11 Surabaya secara digital.

INTRODUCTION

Archive is a main memory in every activity in the office (Latif & Pratama, 2015). According to Law of the Republic of Indonesia number 43 of 2009 explains, archives are record of activities or events in many forms and media in accordance with development of information and communication technology made and received by state institutions, local government, educational institutions, companies, political organizations, community institutions, and individuals in implementation of social, national, and state life.

Archival means activity of managing archive to be used in an organized manner and make easy in order to search (Pratiwi & Nasution, 2022). Archival play an important role in an office environment. Function of archival as a memory center, for proof of institution existence, and other benefits for institutions. Therefore, there must be good management of archive from creation until depreciation (Fathurrahman, 2018).

Every institution always has archive in carrying its activities. In managing and storing archives is need special attention. Managing archives required a system called archival management. Archival management includes activities such as make easy to planning and using, maintaining storage system, as well as transferring dynamic archive into static archive, and destructing archive (Agustini, 2014). Archival management in another means is discussing from creation until destruction of archives.

Archive is useful in an office environment. Archive contains information, data, and proof of important events. Archive as a source of information in institution have several certainty, without history, without knowledge, and without identity (Fathurrahman, 2018). So, it can conclude that the archive role is very important in every activity, and archivist or anyone which given responsibility of maintaining archive, must maintain them properly and precisely.

Archive can be paper-based or digital-based. Paper-based archive are those that have been commonly used in archives. Using paper-based archive as an archive media need a large storage space. But along with development of technology, there's application to make it easier to maintain archive and have a large archive storage space (Rohmawati & Puspasari, 2020).

Maintaining archive aims to make it easy to find archive if one day they will be needed. Activities in managing archive in an institution such as recording, structuring, maintaining, and depreciating. Maintaining archive always experienced advance of technology according to the demands of times. One aspect that require archive management is the number of archives that continuous to grow. If the number of archive and how to maintain it is not good, archive will be damaged and hard to find it when it needed (Kusuma, 2023).

Until now, many archives still paper-based. Based on research from World Wide Fund for Nature or WWF which held on 2021, more 40% all global timber used for industry of paper and total of 23,5 million hectares of land are cleared globally for producing a paper, not to mention paper for archive in office. There problems relate with wasting paper in Indonesia which released by Ministry of Environment and Forestry in 2020, every year Indonesia produces 34,5 tons of waste and 12% of amount of wasted paper, and 43% of the wasted paper still not managed properly. In research that has of waste in 2020. So, it can be concluded that using a paper is detrimental for environment and need an innovative solution for maintaining waste paper problem. Others, paper industry is an industry that plays a huge role for country and daily life. This forest-derived processing industry is a contributor to waste that can pollute its environment (Pseudomonas, 2023). In addition, which states world uses about 400 million tons per year to make money, cardboard boxes, receipts, paper coffee cups, cartons, greeting cards, and etc (Gorvett, 2019).

Create, maintain, saving archive electronically in digital form is definition of electronic archive, usually called with e-archive. Archive that stored into electronic device is helped by application (Kurnia, 2022). Archive that has been stored in electronic device provide good benefits for its users, one example when user want to maintain archive is faster and more precisely compared to manual system. Thus, system development from manual into electronic system is very beneficial for increasing workers effectivity (Safitri & Bukhori, 2021).

Electronic archive management using Microsoft Access with designing a database, where with this database, archiving management will more organized and archive are stored properly. Microsoft Access is a database application made by Microsoft Office which its function is to facilitate users in creating computer database applications (Amalia, 2022). Database is a computerized system that aims to maintain data and archive that are needed (Swastika, 2019).

School as educational institution includes archival activities in it. If archive management in school is not maintained well, so existing archive don't have value and hard to provide needed information. Archive storage aims to (Hidayasari, 2022). Therefore, maintaining archive skill is needed.

11th State Senior High School Surabaya is one of state schools in Surabaya City. In organizational structure, school administration was divided into correspondence staff, master book staff, inventory staff, and operator staff of Basic Education Data or usually called with *Dapodik*. Researcher focused this research and observation on correspondence staff, because of the large amount of paper-based archive. Condition of archive are stored neatly in big folder (*ordner*), but there are several stacks of archives on desk of each staff that have a less neat impression. Correspondence staff handles incoming and outgoing letter, while the incoming letter are job application letter, official letter, information letter, and competition invitation letter. While handled outgoing letter are assignment letter, employment letter, permission letter, and student certificate. So, based on interview with correspondence staff that have been conducted, the main obstacle is decreasing paper-based letter storage space, but it's not possible to build a special building for paper-based letter storage room.

This research focused on development of incoming and outgoing letter storage at 11th State Senior High School Surabaya using an electronic system. Reason why researcher want to develop an application for incoming and outgoing letter because researcher want to focus on storing letter digitally, so that archive management there become easier. Existence of technological developments in field of electronic provide convenience in carrying out the archive management process, especially for offices which need fast service and large archive volumes (Fadila, 2023).

Last research said that it had an effect on finding letters found back and 14 fast files found back for incoming letter, to 30 fast files found back for incoming letter and 30 fast files found back for outgoing letter (Fithri, 2019). This last research strengthens the research that system makes it easier to find archives.

Others, research that resulted in library database system development of a Microsoft Office-based was useful in facilitating library staff for registering new member, knowing all of books in library, knowing the list of visits, and knowing what books were borrowed and when they had to be returned by students (Armawati, 2021). In addition, for students, it's useful in finding books to borrow.

Applications using in work can make effectiveness improve. Based on research that has been done, application needs to be done facilitate work of employees (Choirinisa & Ikhwan, 2022). Application plays a role in helping employees as they are able to perform multiple tasks in one place.

Archive transfer from paper-based to system also offers good benefits, this is proof by last research which states that digitizing archive facilitates storage and access to

the archives needed, saving finding time, easy movement, and reducing costs (Siregar, 2019).

Based on background and obstacles has described above, researcher interested in conducting research entitled **"SAAccess (Simpan Arsip dengan Access) Application Development at 11th State Senior High School Surabaya"**. SAAccess is a developed system by researcher. SAAccess has acronym of *Simpan Arsip dengan Access*. The system was developed using Microsoft Access on laptop. SAAccess builded to help manage archives. SAAccess can accessed by administrative staff, especially correspondence staff. SAAccess letter, assignment letter, employment letter, permission letter, student certificate, inventory data, student data, and etc. Archival application was created so that archive can managed properly, organized, safe, can save storage space, and can save time and energy when finding archives (Kuningan, 2023).

METHODE

Type of Research

Researcher using research and development type what is commonly known as R&D. R&D research type is a research method for developing and testing developed product (Maydiantoro, 2019). Based on the problem has found, used for correct deficiencies in test stage. This program is carried out until tested data can describe a product that has achieved its goals (Sulaiman, 2023). Produced product is an archiving application.

Model of Development

Researcher using Research and Development model and prototype development research method. Prototype have steps in its development, such as (Purnomo, 2017):

1. Collecting information which relate with user, its step require researcher as product developer and user to meet each other.
2. Designing product that developed quickly, which designing includes input, process, and output format.
3. Build the prototype.
4. Created prototype and then it's should evaluate by user and design analysts, so that the software requirement more appropriate.

RESULT AND DISCUSSION

1. **Feasibility of SAAccess Development Process.**
   Next step after development process is measuring a feasibility that has been obtained from experts. Validation results are calculated and categorized based on assessment interpretation criteria of validation. Explanation of calculation validation of experts are below.
   a. **Result of Media Expert Validation**
      Process of media expert validation assessed based on developed media indicators in SAAccess app. Media validation has been done by Syafira Ajia Rena, S.Pd. as Multimedia Teacher at Wachid Hasyim 2 Vocational High School Surabaya. Results of media expert validation as follow.

Table 1. Results of Media Expert

Score	Criteria	Requirement	Item	%
5	Very Feasible	100%-81%	20	80%
4	Feasible	80%-61%	5	20%
3	Feasible Enough	60%-41%	0	0%
2	Not Feasible	40%-21%	0	0%
1	Very Not Feasible	20%-0%	0	0%
Total			25	100%
Average			96%	

Source: Data processed by researcher (2024)

Based on obtained results, assessment carried out by obtained category being basis that SAAccess is very suitable for digital archive app.

b. Result of Material Expert Validation

Next step is to carry out material expert validation to assess aspects of archive material in SAAccess. Validation has been done by Eni Wulandari Y. E., S.Pd. as Office Management Teacher of Ketintang Vocational High School Surabaya. Results of material expert validation as follow.

Table 2. Result of Material Expert

Score	Criteria	Requirement	Item	%
5	Very Feasible	100%-81%	20	80%
4	Feasible	80%-61%	5	20%
3	Feasible Enough	60%-41%	0	0%
2	Not Feasible	40%-21%	0	0%
1	Very Not Feasible	20%-0%	0	0%
Total			25	100%
Average			96%	

Source: Data processed by researcher (2024)

Based on obtained results, assessment carried out by media experts received 96% score with "Very Feasible", there's 81%-100% (Riduwan, 2012). "Very Feasible" obtained category being basis that SAAccess is very suitable for digital archive app.

c. Administration Staff Response to SAAccess Development Process.

Final process of SAAccess development is getting response from administrative staff so the app is more optimal. Administrative staff response was filled by Mr. Edi Sugiarto as Head of Administration and Mrs. Setyarini as correspondence staff. Administration staff response as follow.

Table 3. Results of Head Administration Response

Score	Criteria	Requirement	Item	%
5	Very Feasible	100%-81%	13	52%
4	Feasible	80%-61%	10	40%
3	Feasible Enough	60%-41%	2	8%
2	Not Feasible	40%-21%	0	0%
1	Very Not Feasible	20%-0%	0	0%
Total			25	100%
Average			88.8%	

Source: Data processed by researcher (2024)

Based on obtained results, assessment carried out by media experts received 88.8% score with "Very Feasible", there's 81%-100% (Riduwan, 2012). "Very Feasible" obtained category being basis that SAAccess is very suitable for digital archive app.

In order to optimizing its use, administrative staff give suggestions and comments as follows:
1) Set so format other than .jpg can show in letter preview.
2) Change the background image to make it more attractive.

Table 4. Results of Staff Administration Response

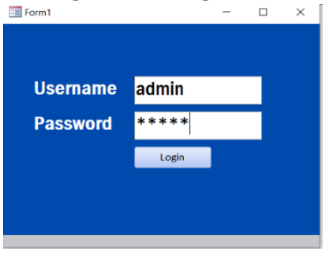
Score	Criteria	Requirement	Item	%
5	Very Feasible	100%-81%	12	48%
4	Feasible	80%-61%	12	48%
3	Feasible Enough	60%-41%	1	4%
2	Not Feasible	40%-21%	0	0%
1	Very Not Feasible	20%-0%	0	0%
	Total		25	100%
	Average		88.8%	

Source: Data processed by researcher (2024)

Based on obtained results, assessment carried out by media experts received 88.8% score with "Very Feasible", there's 81%-100% (Riduwan, 2012). "Very Feasible" obtained category being basis that SAAccess is very suitable for digital archive app.

Suggestions and comments submitted by administrative staff are that it is recommended to add a secure system in form of login or other type of security before entering the application. Its features in app are good enough to use.
Based on suggestions by administrative staffs, researcher as app developer made improvement to SAAccess.

1) Adding login before archiving incoming letter and outgoing letter



Picture 1. Login Column Addition

2) Changing background more attractive

Picture 2. Improving background image on menu

Picture 3. Improving background image on outgoing letter

2. Discussion

Discussion contain explanation about results of problem formulation by researcher.

a. SAAccess Development Process.

SAAccess development process use a prototype development model which has stage of collecting information that require researcher as app developer and user meet each other, design the product quickly, then build a prototype, until formed prototype must be evaluated by experts and user so the app needed are more appropriate (Purnomo, 2017).

First step in app development is collecting information in way that require researcher and user meet each other. Obtained problem from meetings that held is that paper- based letters in storage room are increasingly piling up, while it's impossible to build a special storage room building. Researcher focus on managing incoming and outgoing letters in Administration of 11th State Senior High School Surabaya. As information, correspondence staff hold Considering amounts of letters being managed and decreasing storage space, researcher had idea to develop a digital archiving application using Microsoft Access. Archiving transfer from paper-based to digital system provides easier storage and quicker access to archives needed, so it can save search time, easy transfer, and reduced maintenance costs (Siregar, 2019). Using app also provide ability of facilitate employee performance because they're able to carry out many tasks in one place (Choirinisa & Ikhwan, 2022). Therefore, developments of technology made it easier to carry out the archive management process, especially for offices that need fast service and manage large amounts of archives (Fadila, 2023). Researcher reason why choose Microsoft Access software, Access has ability to design database, where with this database archive management becomes more organized and archives are stored precisely (Amalia, 2022).

Second step that carried out by researcher after collecting information is designing product quickly. Researcher as app developer use Microsoft Access as digital archiving app. This app can used on all types of laptops or computers with Windows 7, 8, to 10 operating system. SAAccess has features such as adding letters, changing letter descriptions, deleting letters, stating the number of archives, and creating reports that recorded in database. After user get into app, user can choose what letter to input in app or only seeing the report has recorded in database. The point is user can use this app according to their needs.

Microsoft Access that used for developing SAAccess is 2007-2016 version. SAAccess run on all brands of laptops or computers with offline, because this application doesn't require internet connection. There's background in incoming and outgoing letter input column, white background image, so that recorded reports are easy to read and clear when printed.

Next step after designing product quickly is build a prototype that has been designed in such a way. SAAccess was created by researcher with aim of helping 11th State Senior High School Surabaya to develop its archive better. Research conducted by Hidayatullah, 2020 that electronic archive using Microsoft Access is effectively for facilitate archive management at Ngenep Government Office. SAAccess using Microsoft Access for its development. Designing app is using Dell Precision M4700 brand laptop, but it doesn't mean that this app can only running in same device. The important thing before running this app is to have Microsoft Access app on laptop or computer that will be used. SAAccess development is focusing on digital storage of letter in administration room of 11th State Senior High School Surabaya, such as job application letters, assignment letters, notification letters, and other letters received or letters issued by school. First step taken by researcher in building a prototype is opening Microsoft Access to make blank database first. Then researcher click on form wizard to create customized column and report wizard to make a report of letter that recorded in database. After blank database was opened, primary key will automatically be in first column. "Field name" and "data type" column can be change as needed. Researcher enter programming language in "field name" column and entering data type. Arranged and tidied database in such a way is given a background image so the appearance looks more attractive. Remember to add icons as navigation in app.

Final step in developing SAAccess is evaluating app by comment form media expert and archive material expert. Media validation and material validation are carried out so SAAccess can obtain a feasibility assessment and improvement it contains. Media expert validator is a multimedia teacher at Wachid Hasyim 2 Vocational High School Surabaya which her name is Syafira Ajia Rena, S.Pd. Her suggestion and comment are button appearance be better if enlarged and it size equalized. While Media expert validator is an office management teacher at Ketintang Vocational High School Surabaya which her name is Eni Wulandari Y. E., S.Pd. Her suggestion and comment are use index code to make easier to find documents and need to detail for table of incoming and outgoing letter agenda. Index details must add because indexes using allows for quick finding of archive or documents (Harys, 2017).

b. Feasibility of SAAccess Development Process.

Feasibility result of SAAccess is assessed by media expert and material expert. Media expert validation was carried out by multimedia teacher at Wachid Hasyim 2 Vocational High School Surabaya named Syafira Ajia Rena, S.Pd. and material expert validation was carried out by office management teacher at Ketintang Vocational High School Surabaya named Eni Wulandari, S.Pd.

Assessment result by media expert validation obtained score 96%, same score was obtained by material expert validation was 96%. Based on Riduwan, 2012 interpretation criteria show an interpretation "Very Feasible" with pJercentage 81%-100%. This thing similar with old research which obtained a feasibility

value from material expert validation of 96% and feasibility value from media expert validation of 94% with "Very Feasible" category (Nafisah & Pratikto, 2021). So, it concluded that SAAccess is feasible.

c. Administration Staff Response to SAAccess Development Process.

Administration staff response to SAAccess was assessed by head of administration named Mr. Edi Sugiarto and correspondence staff Mrs. Setyarini. Requesting response from administrative staff is use for that app with existing problem are able to provide solution and it needs.

Suggestions made by administrative staff are that improvement need to make a login for security system, letter code adapt to numbering system according to what applies at school, setting it to other .jpg format on letter preview, and its best to change background image to make it more attractive. Based on administrative staffs' suggestions and comments, researcher made improvements to SAAccess, such as adding login column to system.

Assessment result by head of administration got an 88.8% score and by correspondence staff got an 88.8% score. Based on Riduwan, 2012 interpretation criteria show that "Very Feasible" criteria with 81%-100% percentage. This is similar with old research which obtained results of 84%, which means that app is effectively used to manage archive, especially for storing and retrieving incoming and outgoing letter (Safitri & Bukhori, 2021). So, it concluded that SAAccess is feasible and can be used for digital archiving app in Administration Room 11th State Senior High School Surabaya.

CONCLUSION

Final part of thesis is conclusion and suggestion explanation based on research results and discussion mentioned previously.

1. Digital archiving app development based on Microsoft Access is using prototype development model by Purnomo, 2017 which goes through the steps of collecting information by researcher as app developers, designing prototype quickly, build a prototype, and designed prototypes that evaluated by experts so that the application is more suitable to needs. After the application is validated by experts, a response is requested by head of administrative and administrative staff of 11th State Senior High School Surabaya.
2. SAAccess feasibility result has assessed by media expert and archive material expert. Media expert validation received 96% in the "Very Feasible" category and material expert validation received 96% in the "Very Feasible" category. So, it can conclude that SAAccess is feasible and can used for managing digital archive.
3. Response from head of administrative and correspondence staff to SAAccess got 88.8% score with "Very Feasible" category. So, it can be concluded that the administrative staff's response to the SAAccess application received a positive response, SAAccess was considered effective in managing letters at 11th State Senior High School Surabaya digitally.

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