Application Of Web-Based Archiving Information System (E-Sip) at BPK RI Yogyakarta

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Abstract. Nowadays, almost every aspect of daily life cannot be separated from digital technology. Modern globalization has accelerated the development of information technology and information systems. Because the user has a specific need, organizations like BPK RI DIY are still resistant to manual document retrieval because they are inefficient and ineffective. This is because the user has a specific need. As such, the goal of developing the web-based application of Aplikasi Sistem Informasi Pengarsipan (E-SIP) is to facilitate archiving issuance. In this application, which was created utilizing the waterfall model, the front-end and back-end frameworks were ReactJS for the front end and NetstJS for the back end, both of which are based on NodeJS for databases using MYSQL. This technique uses the Black box for the GUI of the inactive archive application. Based on test results showing that the archiving application is simple to use and understand, it can be assumed that the application can help organizations like BPK RI DIY in archiving management.

1 Introduction

In today's era of globalization, the development of information technology and information systems that are getting higher and higher makes almost every part of life inseparable from the use of computer equipment. The development of advances in Information Engineering (IT) has made the influence of accounting information systems (SIA) in data processing, internal control, and increasing the quantity and quality of financial reporting. Archives have 2 types of functions: dynamic and static archives. Dynamic archives have 2 types of archives: active and inactive. Dynamic files are directly used for planning. In contrast, Static Files are not directly used in everyday life.

With this understanding, archiving is important, especially for organizations whose information is always moving quickly. This application creates an inactive archiving information system at the BPK RI DIY Office, which still uses simple methods in managing inactive archives. The management of storage and rediscovery of archives is relatively old because the management is still manual, recorded, typed, etc. Inactive archives are dynamic archives whose period of use is less than 6-10 times a year. In archive collections, these inactive archives amount to 35-40% to determine whether the archives have entered the

inactive archives or not, and can be seen in the retention schedule of the agency. The creation of this Application requires an Archive Classification Code and an Archive Retention Schedule (JRA).

2 Literature Review

2.1 Basic Concepts of Archive Classification

The following are some basic concepts of archival classification according to [1]. The basic principles of Archive Classification include 3 (three) things, namely:

a. In creating the profile, it must have an Archive Classification.
b. Classification of archives based on the functions and responsibilities of the archiver, not based on its organizational structure.
c. Based on the classification of archives consisting of letter numbering, filing, and preparation of an Archive Retention Schedule (JRA)

2.1.1 File Classification Principles

Classification of Archives for the State Agency is tidied up by archival units, including representatives of the parts of the second-tier processing units in the environment of the creator of the archive.Technical Regulations for Classification and Preparation of Archives using Logical and archived taxonomies with feature names, activities, and transactions can be easily understood by all users.

2.1.2 Archive Retention Schedule (JRA)

An Archive Retention Schedule (JRA) contains a grace period of retention or retention, a type of archive, and a description containing recommendations on the designation of a destroyed, reassessed, or patented archive used in guidelines in the depreciation and rescue of archives [2].

2.1.3 Archives

The word Archive in Indonesian is taken from the Dutch archive, which is etymologically from Greek '*archiuim.*' According to [3], archiving aims to organize quality archives effectively and efficiently through a stable selection procedure to create Archive Conditions in Quality Agencies/Institutions. In comparison, the implementation of electronic archival can be a dynamic process that allows archival activities to relate to the archival system [4].

2.1.4 Retrieval Archives

According to the archives collection related to archive management, if the management of the archive system is reduced, it will not be easy to find archives again. One of the purposes of finding archives for use in the form of administration in agencies [5].

2.1.5 Understanding Systems

Information system production includes system model design, database design, system input interface design, system output interface design, program code generation, and program testing [6].

2.2 Previous Research Results

[7] found that, in dynamic archives, inactive archives were not created by themselves but began with the process of sorting archives from the processing unit to the central unit that had reached the Archive Retention Schedule (JRA). This research produced the mechanism for managing dynamic and inactive archives in the Ministry's Archives Unit in accordance with the established mechanism. It was found in processing units that have not sorted archives according to the mechanism of moving archives. To make the device design-build system [8] *Microsoft Access-based* e-archive information in the handling of inactive archives, before designing an e-archive information system, it must be understood how to create a *Microsoft Access database* design to support electronic information and archival systems in agencies.

2.3 Research Framework

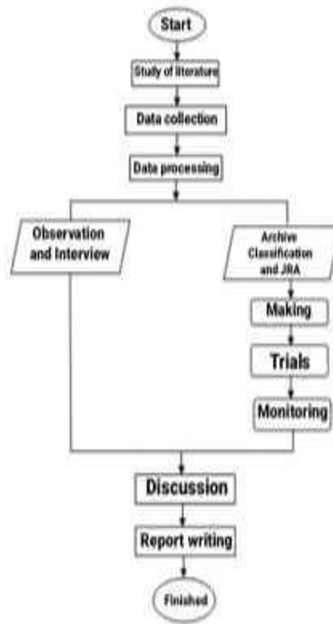The framework of the study can be seen on the flow chart shown in the figure:

Fig. 1. Research Flow Chart

3 Method

The software system development method used is the *waterfall* model. In *the waterfall* model, each stage must be sequential. Without jumping to the next stage, the first stage must be completed, then the second, and so on. The stages of the *waterfall* model are shown in the following diagram:

3.1 Preparatory Stages

The Preparatory Stage is carried out before the start of field activities at the data collection stage. The preparatory stage is aimed at collecting information in the preparation of planning. To assist the research completion process, it is necessary to compile mature work guidelines, reasonably plan the time for the completion of this research.
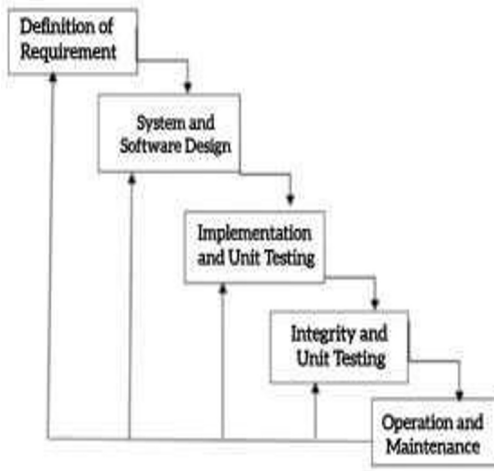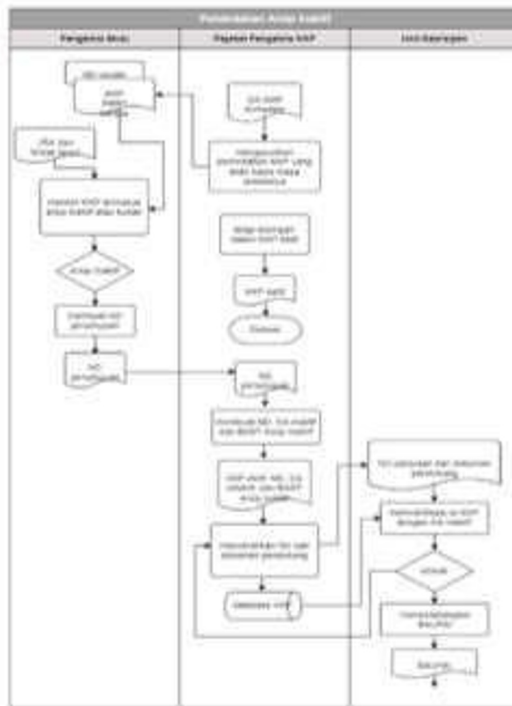
Fig. 2. *Waterfall*

Fig.3. Flowchart of system

3.2 Stages of Data Collection

The data collection stage is carried out to understand the situation on the ground. This stage analyzes the needs (*requirements analysis*) for the process of making an archival information

system at the BPK RI DIY. Providing complete data and theories can result in good planning. How to collect data in the framework of preparing this Final Project can be explained by the following description: Observation, interview and literature is the process of systematically observing and collecting data

3.3 Stages of Data Processing

The data processing stage is carried out after all the observation files and archive classifications are collected. After they are collected, all then compile the concept of *planning a Web-based* Archiving Application, together with the BPK RI Staff, regarding what features will appear on the application display and how the flow of archive management is digital. The type of data on this application uses *a database.*
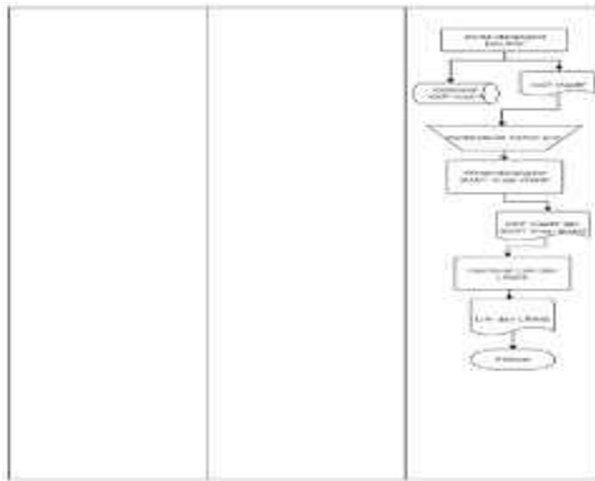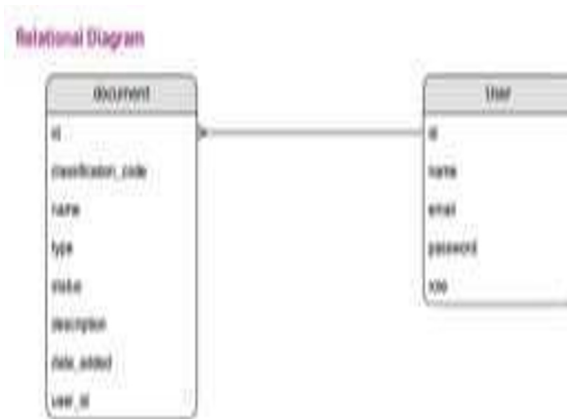

Fig. 3. Inactive Archive Transfer Flow Map

3.4 New System

Based on the results of the analysis of inactive archive applications that do not yet exist at the Indonesian Financial AuditAgency Representative DIY, then the idea of a new

system was found to improve the quality of archive management to make it more effective and efficient. The proposed new system can be seen on the flow map below:
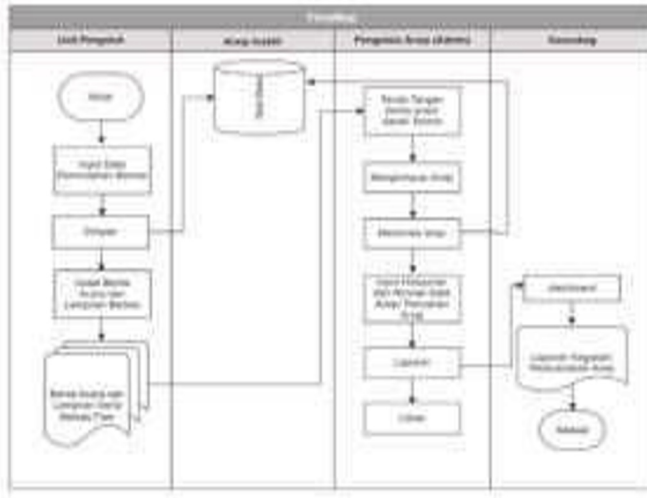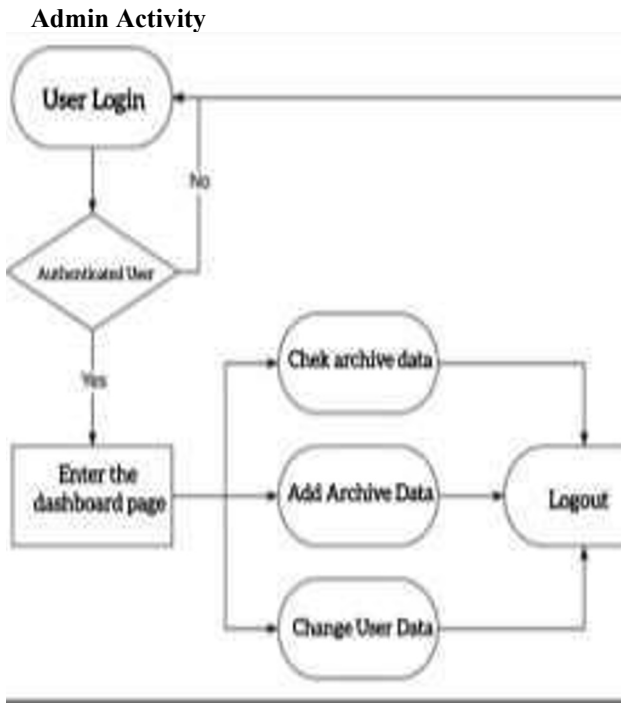

Figure 4: Flow Map of the Proposed New System

Admin Activity

Figure 5: *AdminFlowmap*
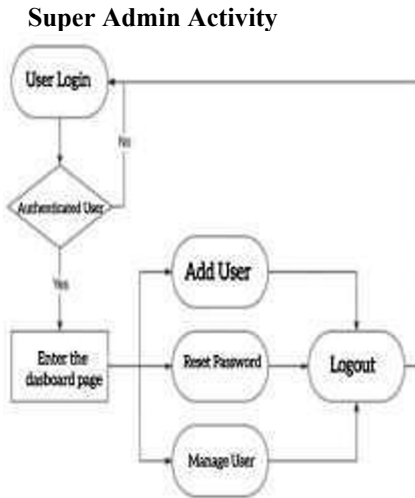
Super Admin Activity

Fig. 6. *Super Admin* Diagram *Flow Map*

3.5   Stages of Discussion

3.5.1 Inactive Archive Management Activities at the BPK RI DIY Office

In this inactive archive management activity using regulations from the book "Guidelines for Classification of Archives of the BPK RI in 2020," which is a decision of the Secretary General of the BPK RI, this Archive Classification Guideline is a reference in classifying archives for all work units in the BPK whose archival duties are carried out by archival implementers in order to support the smooth management of dynamic archives, archival implementers have been in accordance with the rules since the archives were created until depreciation archives so that the CPC is able to provide performance accountability materials that are accountable, authentic, intact and reliable.The purpose of archive management at the BPK RI Office is to assist archival implementers in providing classification codes on inactive archive letters/archives/documents and facilitate the systematic arrangement and storage of archives so that the necessary archives can be found easily and quickly. The process of managing archives at the BPK RI DIY Office includes:

3.5.2 Inactive Archive Selection

Inactive Archive Selection selects inactive archives in the processing unit to be handed over to the archives unit when it has passed its active period.

3.5.3. Archive Verification

Verify the archive by conducting a test of the suitability of the inactive archive list with its physicality. If appropriate, the Archival Unit and the Archive Creator sign the Minutes of the inactive Archives Retrieval Test (BAUPAI).

3.5.4. Archive Handover

Carry out the process of handing over inactive archives through the signing of the minutes of the handover of inactive archives by the head of the archival unit and by the head of the archive creator.

3.5.5. The Process of Retrieving Inactive Archives at the BPK RI DIY Office

In implementing this archive, it will be clearly visible if retrieving inactive archives is easy and effective to return to its original place. Since archives are processed and stored in archive storage, the purpose is to facilitate the search for information relevant to user needs, such as inactive Archive Retrieval tools.

4 Results And Discussion

Based on the selected research method, you have obtained maximum results on the data that has been studied. The research results obtained through interviews, observations, and research results that have been analyzed:

4.1 Testing Web-Based Archiving Information System (E-SIP) using Black Box

Testing using black boxes is a behavioral test. This test creates several sets of input conditions that perform functional needs for the program. Testing this software covers areas in the software (*Data Drives Testing). T*his black box testing process tests programs that have been created at the time of trial and can enter data on each form. In testing, this application aims to find out whether this application is in accordance with expectations and runs as desired. This test is carried out at the BPK RI DIY Office, testing on this application with the staff responsible for this Application System, as follows [9]:

Test Description	Desired Result	Results Obtained	Information
Super Admin fills in the username and does not fill in the password	The system does not process the data	the system displays the message "please fill out this field"	Succeed
When adding a new user does not fill the position	The system does not immediately add a new user	the system displays the message "please fill out this field"	Succeed
Reset Password	system can reset new password	the system displays the message "please fill out this field"	Succeed
Edit Username	The system can change the user name, replace it as needed	The system processes the user name change	Succeed
Delete the user name list	The system can delete usernames that do not match the number of people managing the application	The system displays the message "Are are you sure you want to delete?"	Succeed

Fig. 7. Adding a New User

Test Deacripton	Desired Result	Results Obtained	Information
Admin changes operator data profile	System can change the new profile	The system displays the message "Profile Data Successfully Changed"	Succeed
Admin change the password on operator data	System can change old password to new one	The system displays the message "Password changed successfully"	Succeed
Admin Changes The Pasword	When filling in the old password it doesn't match the system can't Process it	System displays message "old password does not match"	Succeed

Tes Description	Desired Result	Results Obtained	Information
Add Classification Code	The system can add a list of classification codes manually	The system processes the addition of a list of classification codes	Succeed
Code list classification There is not filled yet	The system cannot process the data	System displays message "please fill out this field"	Succeed

Fig. 8. Adding the Classification Code

Test Description	Desired Result	Results Obtained	Information
Admin fill No. definitive	The system automatically brings up the number selection history	System displays history of number slides	Succeed
Admin fill in the Classification code	The system automatically appears a slide selection list of classification codes	The system displays a selection of classification code slides	Succeed
Admin fill in fill in the name of the file description	The system automatically appears history of file description options	The system displays a history of file description options	Succeed
JRA	The system automatically pops up JRA without having to type manually	Automatic filling system	Succeed
Submit inactive archive data collection	After submitting the System automatically displays inactive archive data	The system immediately processes the display of the list of inactive archives	Succeed

Fig. 9. Inactive Archive Data Collection

Test Description	Desired Results	Obtained Results	Information
Archive list view is inactive	On Exceeded has data JRA then the active status display will be changed	The system displays the active status "proposal to move"	Succeed
Archive list view is inactive	The system can download a list of inactive archives, automatically in the form of documents on Ms. Excel	processes downloading a list of inactive archives in the form of Ms. Excel	Succeed
Dowload files in	Files that have been downloaded can be opened in Ms Excel and can then be re-edited.	The system displays files that have been downloaded on Ms. Excel	Succeed

Fig. 10. Inactive Archive List Data

4.2 Web-Based Inactive Archive Application in the Public Relations Subdivision of the BPK RI DIY

In the management of active archives that have used web-based applications without using simple information technology, while inactive archives that still use simple information technology that uses handwriting and retyping in Ms.Excel, the author created a web-based information system application to make it easier for BPK RI DIY office in archiving in this inactive archive. The following is an image of the display and explanation on the web-based E-SIP information system application page that has been created

4.2.1 Super Admin App View: Login

Fig. 11. Super Admin Login

Before entering the main menu, the admin must fill in the email and password of the officer in charge of holding the super admin. After correctly setting aside the email and password, the main display will appear and can be accessed.

4.2.2 Admin Layout Pages

Fig 12. Add User View

In this display, there is a user icon and classification code. Then, the user is willing.To add a user/admin, the super admin can fill in the name of the admin, work unit, position, and email of the officer in charge of using this application. After filling in the contents, click "add user.*"*

4.2.3 view after Adding User/Admin

Fig. 14. Display After Adding a User

After adding the user/admin, the next display will appear with user/admin data that has been registered by the super admin. In this view, *super admins* can also edit, re-reload, or delete that data if necessary.

4.2.4 Archive Classification Code View

Fig. 14. Archive Classification Code List

The appearance of the archive classification code is intended to make it easier and help *super* admins see the archive classification code through the website without opening the archive classification code guidebook. Admins can add Classification Codes that have not been listed on the application. Here is the view to add classification codes:

Fig. 15. Adding the Classification Code

In this view, the admin can fill in the Classification Code, Subject Matter, Sub Problem, Sub-Sub Problem, and Year-Long Save Inactive Archive. After all of that is filled in, click "Submit."

Before entering the main menu, the user must fill in the email and password of the officer in charge of holding the super admin. After correctly setting aside the email and password, the main display will appear and can be accessed. After logging in, the words "Welcome User" will appear as shown below:

Fig. 19. After Login

Figure 19: Dashboard view

On the dashboard display, there are Operator Data and Archive Classification Codes.

Fig. 20. Operator Data

Fig. 21. Change Password View

The user operator can change the profile and password in the data display.

Fig. 22. Classification Code view

In thearchive classification code display, this is only for reminders when the user does not memorize the sequence list of classification codes in the archive to be archived.

Fig. 23. Archive Logging View

Fig.24. Archive Logging View

In this view, users can record the files to be archived, such as Definitive No., Classification Code, File Description Name, File Year, JRA, Progress Rate, and Active Status. After everything is filled in, then click submit. After clicking submit, a list of archives that have been submitted automatically will appear.

a. Reporting View on Apps

Fig. 25. Reporting View

In the reporting view, Monitoring Out of Retention & Annihilated Status will appear, then clicked, after clicking it will appear an image as below:

Fig. 26. Inactive List View

This view displays a list of inactive archives that have been recorded. This list view has a Classification Code, File Description, Year, JRA, Progress, Active Status, and Action. The Active status in this view is to show the active period of the file, such as permanent and destroyed, to mark which files need to be saved and which are not saved. Then, if there are files that have exceeded the JRA, a "move proposal" will appear
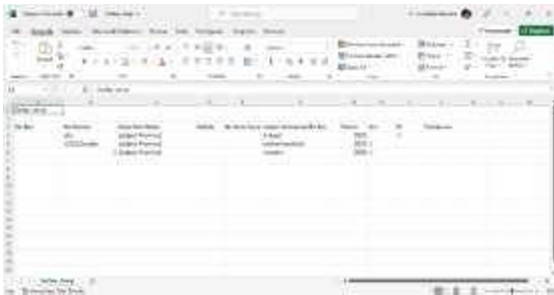

Fig. 27. List of Archives Have Been Downloaded

The list of downloaded Inactive Archives will be in the form of Excel, as shown above. After that, the list of archives can be printed.

5. Discussion

5.1 The Change of Active Archives Period To Inactive

Active archives that have expired according to the archive retention schedule will turn into inactive archives. There are several kinds of inactive archives according to the description of the archive file, for example, Financial SPJ, Incoming Letters, Outgoing Letters, Nil TUP, Official Memorandums, Clippings, etc. From the interview results, it is known that the inactive archive is an archive that has decreased in frequency of use and can be proposed to move from the relevant work unit to the Archives Unit in the General and IT Subdivisions. In the process of transfer, some procedures are carried out as follows:

5.1.1 Selection

Selection is the initial activity before the archive documents are moved. At this selection stage, the archives are sorted based on the archive retention schedule as follows: Archives that have expired and Archives that have decreased in frequency of use.

5.1.2 Create a list

The work unit that will move the archive creates a list of archives to be moved, which contains:

      a.   Processing Unit Name
      b.   Subject Matter
      c.   Classification Code
      d.   Archive Retention Schedule (JRA)
      e.   Archive Status.

5.1.3 Archive Verification

Verifying this archive is done with the conformity of the inactive archive list with its physical. If the archive is appropriate, the officers of the Archival Unit and the executor at the Archive Creator sign the Minutes of Inactive Archive Picking Test (BAUPAI), which is followed by the signing of the Minutes of Handover of Archives by the Head of the Archives Uni and the Head of the Archives Creator Unit.

5.1.4 Storage

The principle of inactive archive storage according to the rules used at the BPK RI DIY Office, archival instruments in general according to Law 43 th 2009 there are 4, namely:

      a.   Archive Classification
      b.   Archive Retention Schedule
      c.   Classification and Security Systems.
      d.   Dynamic Archive Access.

In terms of archive shrinkage, there are 3 things: Transfer of Inactive Archives, Destruction of Inactive Archives, and Submission of Static Archives to the Archival Institution, namely ANRI [10]. Archive shrinkage is useful for reducing the number of archives stored in the work unit. In the interview results, the E-SIP application is useful for helping transfer inactive archives, knowing systematically when it is time for the archives to be moved because they have expired their active period from the work unit to the archiving unit.

5.1.5 Maintenance

In the inactive archive maintenance stage, processes are carried out, such as physical maintenance, content, and completeness of documents. The maintenance of this archive is in accordance with the SOP regulations that apply to the BPK RI DIY office.

5.1.6 Depreciation / Destruction

The procedure for destroying inactive archives at the BPK RI DIY office is archives that have passed their inactive period then the Archives Unit makes lists of archives of destruction proposals submitted to the Archives Unit (UK) I at the BPK RI in Jakarta to be then forwarded to ANRI as the archival supervisor of the BPK institution. In Article 19, Paragraph 1, ANRI has the task of carrying out national archival development for the creators of central and regional archives, provincial regional archives, regional archives of regency/city, and archives of universities.

In the interview results, this archive destruction activity was carried out to reduce the volume of archives in the archive room. The destruction of inactive archives is carried out in accordance with the Archive Retention Schedule (JRA) that the Archive Creator has made at the Central BPK RI Office. In this destruction process, through the process of collecting data on the list of inactive archives to be destroyed, then submitting a recommendation for the proposal to be destroyed, then waiting for the decision of the head of ANRI whether this archive can be destroyed or not, after there is approval for destruction from ANRI which is followed by the issuance of a decree for the determination of destruction signed by the secretary-general, then the process of implementing the destruction of this archive can be carried out. Some witnesses escorted the process of destroying the archives. The archives to be destroyed were taken to UD Sregep for re-enumeration until they were not read again. Then, the information from UD Sregep, the archives of the shreds, was taken to the PD of Pura Barutama in Kudus to be made into pulp.

5.2 Website Management of Archiving System Application

This application website is not the first website used for digital archiving. Nevertheless, this website has some up-to-date compared to similar products. The latest update of this website is in terms of super admin, archive data, and product simplification, as follows:

5.2.1 Super Admin

The first update is from the super admin side. Super Admin is a role that has the authority to manage users that this archived website can use, whether it is adding or removing users. Super Admin can also help users when the user forgets the password of their user account. Super Admin can reset the password, and then the user can log in with the password in accordance with the terms of the password that has been dragged. With the authority described above, super admins are recommended to be held by the staff responsible for this filing application.

5.2.2 Archive Data

Archive data collection in digital archiving products generally can only archive certain types, so the flexibility of the archive type will be very limited. The archive data is only the archive name, document number, description, and upload date. The archive website that will be created has the flexibility to determine the archive type without limiting the types available. The archive data that is inputted will also store the archiver data so that if something happens, the archiver can be responsible for the archiving, and finally, there will be a status between active and inactive.

5.2.3 Product Simplification

This application website will be made to a minimum but can meet the needs of users. The simplicity of existing features is hoped to make it easier for users to use this website. Ease of use can save time in material transfer when users use this website. hyere are advantages and disadvantages of the application
   a. The website is made simple, making it easier for users to use.
   b. The absence of an *upload* feature can save storage needs and save on hosting costs.
   c. There is a super admin role that can make it easier to manage users, either by adding or removing users who no longer have archiving authority.

d. There is an active/inactive column that can provide info regarding the status of the archive.
e. Users can determine the type of archive by themselves so that there are no restrictions when there is an addition of archive types.

This Apllication have some Debilitation are
a. The simplicity of the website may limit the features of this website.
b. The absence of admin features is only limited to user management.
c. The active/inactive status of archive documents is managed manually.
d. The absence of a limit on the type of archive can make those that should have the same kind of archive be considered different.

5.2.4 Future Development

This archive website is still very possible to be developed in the future. Many parts can certainly be improved in terms of   features, authority, or in terms of design, such as: Feature, Authority and design hat can be improved is the *upload* feature. This feature can make it easier for *users to* search for documents.   However, some things that need to be considered are:a) Requires more storage, especially if the documents owned have a large enough size, b)Requires good enough security so that the documents owned, especially if the documents are confidential, are more secure.c) Adjustment of authority so that there are no small mistakes such as deletion of documents but has a fatal impact. Authority can be developed by super admins who can limit the types of archives so that the weaknesses of the products that have been conveyed before can be avoided. In addition, it is also possible that super admins can also concurrently serve as admins so that they have dual authority, namely managing users and managing documents.In terms of design, it has not been able to explain properly what can be improved. Design can be improved when, in the sense of product design, it is obsolete or when some *users* feel that it is not in accordance with the design given. Agencies can also change according to the design they have.

6. Conclusions And Suggestions

6.1 Conclusion

Data was collected from interviews, observations, and discussions regarding inactive Archives Management research at the BPK RI office. The E-SIP Archiving Information System Application aims to help manage archives at the BPK RI DIY Office that still use simple methods, and this application also makes it easier to rediscover archivesand archives that have exceeded the . Making this application requires expertise in the database system (DBMS), which is then designed in such a way as to be able to store inactive archive files. The design of this application has been adjusted to the needs of filing at the BPK RI DIY office.

6.2 Suggestion

In this study, there are several suggestions shown by researchers to companies and subsequent researchers to be able to research more deeply about accounting information systems, namely as follows:a) Companies can develop web-based inactive archive technology at the BPK RI DIY office, it can be used in every work unit in the BPK RI DIY so that the archives unit, as the manager of inactive archives, can exercise control over all

existing inactive archives, b) BPK RI can add Human Resources (HR) to manage archives at the BPK RI Representative Office.It is better for the archival staff who bear the responsibility about this archive to be able to provide socialization to other staff, the importance of good archive management, and can help maintain archives properly. For Future Researcher can further develop the Inactive Archiving Application in supporting information or features in applications that are still lacking in the Web Application that has been made.

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