Muhammad Iqbal Akbar, Arafah Husna, Ahmad Fahmi, Asep Sunandar, Eris Dwi Septiawan Rizal

Design Of Stationery Management Information System In Malang Customs

[1]Muhammad Iqbal Akbar, [2]Arafah Husna, [3]Ahmad Fahmi, [4] Asep Sunandar, [5]Eris Dwi
Septiawan Rizal

ABSTRACT

The Intelligence And Enforcement Section At Malang Customs And Excise Was Assigned To Build One Of The Systems Related To The Duties And Sops In The Intelligence And Enforcement Section. One Of The Problems That Were Found Was That The ATK Data Collection System Had Not Implemented The Recording Of Every Use Of Stationery. This Situation Caused The Stationery Number And Availability Not To Be Directly Monitored By The Employees. The Offered Solution For This Problem Was To Design A System That Could Organize The ATK Data Collection. The System Had Various Recording Features Ranging From Requesting Stationery, Monitoring The Availability Of ATK, To Recording ATK Usage. So, Building An ATK Management Information System Made It Easier To Monitor The Availability Of Stationery In Real-Time.

Keywords: Stationery Management, Information System, Malang Customs

_____

[1,3]Informatics Engineering Department, Engineering Faculty, Universitas Negeri Malang,
[2,4]Education Technology Department, Engineering Faculty, Universitas Negeri Malang,
[3]Electrical Engineering Department, Engineering Faculty, Universitas Negeri Malang,
Email: Iqbal.Akbar.Ft@Um.Ac.Id, Arafah.Husna.Fip@Um.Ac.Id, Asep.Sunandar.Fip@Um.Ac.Id
Ahmad.Fahmi.Ft@Um.Ac.Id, Erisdsr@Gmail.Com

1   INTRODUCTION

The Office Of Supervision And Service Of Customs And Excise Type Of Malang Excise Duty (KPPBC TMC Malang) Or Commonly Called The Customs Office. The Customs Office Is Located In The Centre Of Malang, Precisely On Jl. Surabaya No.2, Lowokwaru, Malang City. KPPBC TMC Malang Is A Vertical Agency Of The Directorate General Of

Customs And Excise Which Is Under And Responsible To The Head Of The Regional Office Of DJBC East Java II. KPPBC TMC Malang Has The Main Tasks As Stipulated In The Decree Of The Minister Of Finance Of The Republic Of Indonesia Number: 74/PMK.01/2019 Dated April 8, 2009, Which Reads "Implementing Customs And Excise Services And Supervision Within The Region And Its Authority Based On The Applicable Statutory Regulations".

KPPBC TMC Malang Is A Government Agency That Is Engaged In Customs And Excise Services, Includes The Purchase Of Excise Stamps, Market Operation Activities, And Tax Collection For Excisable Goods. KPPBC TMC Malang Has Several Main Tasks With Sops That Are So Complex That They Require The IT Division To Carry Out Their Primary Tasks. In Carrying Out Its Duties, The Customs Office Has Used Systems Or Applications Such As SITAWON, SITUMAN, SIKEPANG And CEISA Where Developers Are Still Developing These Systems To Date.

The Intelligence And Enforcement Section At Malang Customs And Excise Was Assigned To Build One Of The Systems Related To The Duties And Sops In The Intelligence And Enforcement Section. One Of The Problems That Were Found Was That The ATK Data Collection System Had Not Implemented The Recording Of Every Use Of Stationery. This Situation Caused The Stationery Number And Availability Not To Be Directly Monitored By The Employees. Employees Must Check And Search For It Manually To Find Out The Number And Availability Of Stationery. The Drawback Of The Manual ATK Checking System Is Not Time Efficient Because Of The Manual Checking And More Extended Time. The Solution That Was Offered In This Problem Was To Design A System That Can Organize ATK Data Collection. The System Had Various Recording Features Ranging From Requesting Stationery, Monitoring The Availability Of ATK, To Recording ATK Usage. So, Building An ATK Management Information System Made It Easier To Monitor The Availability Of Stationery In Real-Time.

2 LITERATURE REVIEW

2.1 SIMANTEP Application

The SIMANTEP Application (Sistem Informasi Manajemen ATK Seksi Intelijen Dan Penindakan /Management Information System For ATK Intelligence And Enforcement Section) Is A Web-Based Application That Is Used To Monitor The Use Of ATK In The Intelligence And Enforcement Section. The SIMANTEP Application Is Built In PHP Using

The Codeigniter Framework. The SIMANTEP Application Consists Of Three Types Of Users: Admin, Staff, And PKL (Intern) Students. The Main Feature That Is Offered In This Application Is An ATK Request Which Is Accompanied By An ATK Recommendation Based On The Amount Of ATK Stock. The ATK Request Feature Is Also Equipped With An Export Data To Microsoft Word And The Creation Of An ATK Request Office Note. The Stationary Usage Recording Feature Records Every Use Of Stationery To Monitor The Stock Of Stationery.

2.2 ATK

ATK Stands For Alat Tulis Kantor (Office Stationery). Initially, Stationery Was Identical To Writing Tools Such As Pens, Books, Paper And So On. Along With Technological Developments, Items Included In The ATK Category Are Also Developing, For Example, Printers, Printer Ink, Calculators, And So On. Stationery Items Are Also Categorized Based On The Types Of Goods, Namely Stationery, Paper, Books, File Organizers, And General Equipment [1].

2.3 Information System

Information Systems Are Systems That Exist In An Organization That Meet The Needs Of Daily Transaction Management, Support Operations, Are Managerial, And Are Automation-Oriented. The Information System Consists Of 6 Components (Building Block) [2]; They Are:

1. Input Block

Is A Method And Media To Retrieve The Data To Be Entered Into The System. The Entered Data Can Be In The Form Of Basic Documents.

2. Model Block

This Block Consists Of A Combination Of Procedures, Logic, And Mathematical Methods That Will Manipulate The Input Data And The Data In The Database. Data Manipulation Is Carried Out In Specific Ways To Produce The Desired Output.

3. Output Block

The Result Of An Information System Is The Output In The Form Of Quality Information, And The System Can Be Used Optimally By Users.

4. Technology Block

Part Of This Technology Block Consists Of Software, Hardware, And Brainware Because This Block Has Activities To Receive Input, Run Models, Store And Access Data, And Produce Output As Desired So That The Information System Can Be Useful For Its Users

5. Database Block

This Block Is The Data Sets Or Bases That Are Interrelated With Other Data. The Data Is Stored On Computer Hardware And Uses Software In Its Operation.

6. Control Block

This Block Design Controls Against The Possibilities That Will Cause Damage To The System. Thus, If There Is Already Damage To The System, It Can Be Immediately Resolved.

2.4 PHP Framework

PHP Frameworks Are Meant To Facilitate Software Development. They Speed Up The Development Process And Reduce Time. The Final Web Applications That Are Created By The PHP Framework Will Be More Stable And Secure [3]. The PHP Frameworks Help Developers Build Web Applications Faster And Easier By Providing A Basic Framework Model, As Well As A Complete Set Of Apis, Libraries, And Extensions; It Also Helps The Developers Become More Productive By Reducing The Repetitive Code In The Project [3].

These PHP Frameworks Are Based On A Model, View And Controller (MVC) Design Model. This Model Is An Effective And Proven Way To Generate Modular, Organized Applications. As A Design Model, MVC Typically Divides An Application Into Separate Layers That Can Be Analyzed And Sometimes Implemented Separately. By Uncoupling The Models And Views, MVC Helps Reduce The Complexity Of The Architectural Design And Increase Code Flexibility And Reuse [3].

2.5 Codeigniter

Codeigniter Is An Application Development Framework. It Is A Toolkit For People To Build Web Applications Using PHP Programming Language. Its Goal Is To Enable To

Develop Projects Much Faster Than Writing Code From Scratch, By Providing A Rich Set Of Libraries, A Simple Interface And Logical Structure To Access These Libraries. Codeigniter Is Based On The Model-View-Controller Development Model. MVC (Model View Controller) Is A Software Approach That Separates Application Logic From Presentation. In Practice, It Permits Your Web Pages To Contain Minimal Scripting Since The Presentation Is Separate From The PHP Scripting [4].

2.6 Bootstrap

Bootstrap Is The Popular HTML, CSS And Javascript Framework For Developing A Responsive And Mobile-Friendly Website. Bootstrap Is The Most Popular HTML, CSS, And Javascript Framework For Developing A Responsive And Mobile-Friendly Website. It Is A Front-End Framework Used For Easier And Faster Web Development. It Includes HTML And CSS Based Design Templates For Typography, Forms, Buttons, Tables, Navigation, Modals, Image Carousels And Many Others. It Can Also Use Javascript Plug-Ins. It Facilitates The Web Developers To Create Responsive Designs [5].

3 METODE PENELITIAN

This Research Used The Waterfall Method To Develop SIMANTEP Web Applications. The Waterfall Model Is One Of The Traditional SDLC Models And Follows Only The Sequential Order. It Flows Steadily Downwards And Is Used In The Software Development Process. We Cannot Change Anything Based Upon Customer Requirements, Since It Follows Sequential Order [6]. The Stages In The Waterfall Method Can Be Seen In The Image Below.
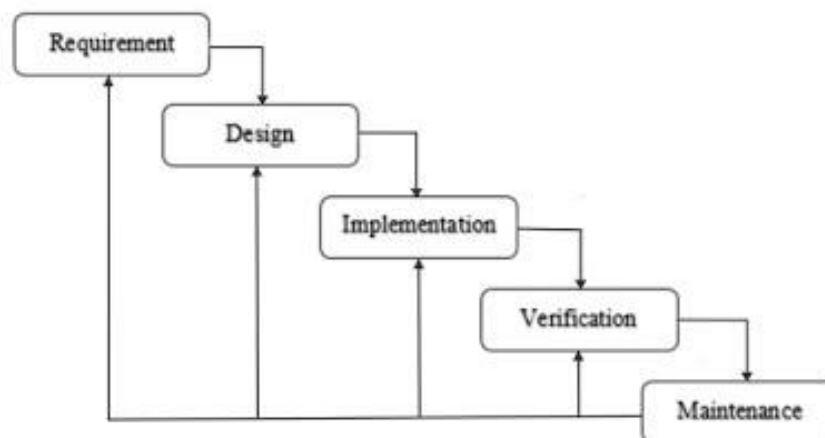

Figure 1 Software Development Stages Using The Waterfall Method

The Explanation Of The Stages In The Waterfall Method Is As Follows:

1. System Requirement Analysis

At This Stage, The Developer Looks For Information On The Software Requirements To Be Built. Information Is Obtained By Observing, Interviewing, Or Discussing With Clients. This Stage Is Beneficial To Impose Limits On The Development Of Software.

2. System Design

At This Stage, The Developer Conducts The System Design Based On The Software Requirements That Are Carried Out In The Previous Step. The Design Is Done In The Form Of Drafting A Sitemap Concept, Making Use Case, Making Database Concepts, Making Layout Concepts, And Flowcharts.

3. Implementation

At This Stage, The Developer Begins To Develop Software In Small Programs Called Units. Then These Units Will Be Integrated Into The Next Step. Each Unit Is Developed And Tested To Determine Its Functionality (Unit Testing).

4. Integration Dan Software Testing

All Units That Are Developed In The Previous Stage Are Integrated Into The Test System In Each Unit. Then The System Testing Is Performed To Find Out Any Point Of Failure Or Error In The System.

5. Operation Dan Maintenance

The Last Stage Is The Finished Software That Will Be Run, And System Maintenance Will Be Carried Out. This Maintenance Includes Fixing Bugs Or System Errors That Are Not Found In The Previous Stages.

The Waterfall Method Has Advantages, Such As Development Using A One-By-One Phase To Minimize Errors That Could Occur. This Method Also Has A Drawback; For Example, It Is Not Possible To Make Multiple Revisions If There Are Errors In The Process. If The Software Is Already In The Testing Stage, It Will Be Challenging To Return To The Previous Step And Change Something That Is Not Well Documented.

4   RESULTS AND DISCUSSION

4.1   Problem Solving

Based On The Problems That Expressed In The Background, The Solution That Could Be Done To Fix These Problems Was To Create An Information System To Help Manage All The Needs And Support The Employees To Find Out The Current ATK Stock In Real-Time.

4.2   Use Case Diagram

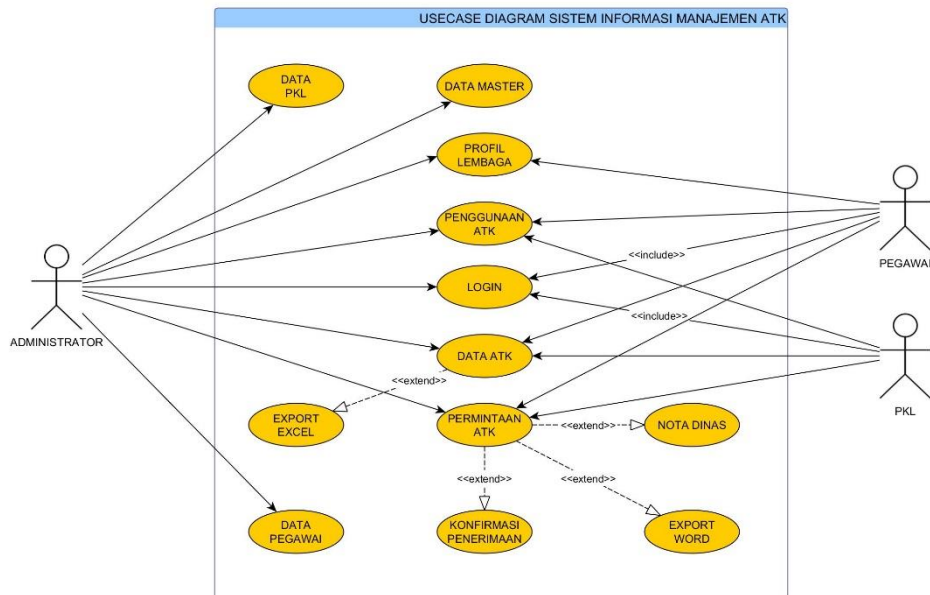Use Case Diagram Design Of The ATK Management Information System Intelligence And Enforcement Section (SIMANTEP) At The Malang Customs Office Can Be Seen In Figure 2.

Figure 2 Use Case Diagram Of The SIMANTEP Application

In SIMANTEP, Several Prominent Features Are Used To Regulate Stationary, Such As The Use Of Stationery, Stationery Data, Confirmation Of Receipt Of Stationery, Exports, And Official Notes. All Of These Features Had Been Discussed With The Malang Customs Office.

4.3   System Explanation

The Display And The Brief Explanation Of The ATK Management Information System Intelligence And Enforcement Section (SIMANTEP) At The Malang Customs Office Are As Follows:

4.1.1   Dashboard Page
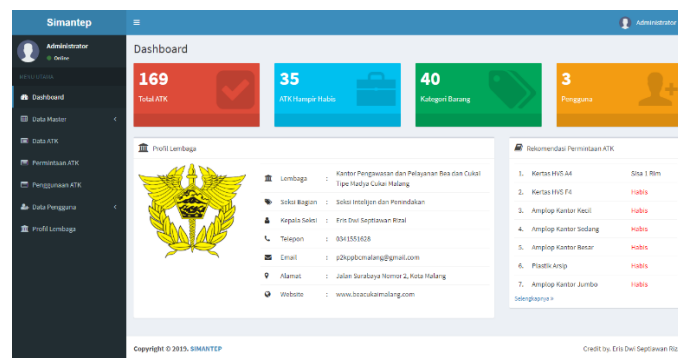
Figure 4 Dashboard Page

As Seen In Figure 3, This Page Displays General Information Such As Statistics, Institution Profiles, And Recommendations For ATK Requests. The Information Displayed In The Coloured Box Section Above Is The Application Usage Statistics. The Red Box Is The Statistical Information On The Total ATK Calculation In The SIMANTEP Application, The Blue Box Is The Full Information For ATK That Is Almost Depleted, The Green Box Is The Full Information For The Category Of Goods, And Finally, The Yellow Box Is The Total Information Users Who Use The SIMANTEP Application. Then At The Bottom Left Is Information About The Profile Of Institutions That Use This Application. Institution Profile Information Can Be Edited On The Institution Profile Menu, So It Will Be Effortless To Change It In Case Of Data Changes In The Future. The Last One At The Bottom Right Is A List Of Recommendations For ATK Requests. The List Of ATK Recommendations On The Dashboard Page Is Only Seven Items Because It Will Not Fit If It Displays The Entire List Of ATK Recommendations. And At The Bottom, There Is A Link To Go To The ATK Request List Page.

4.1.2 Halaman Rekomendasi ATK
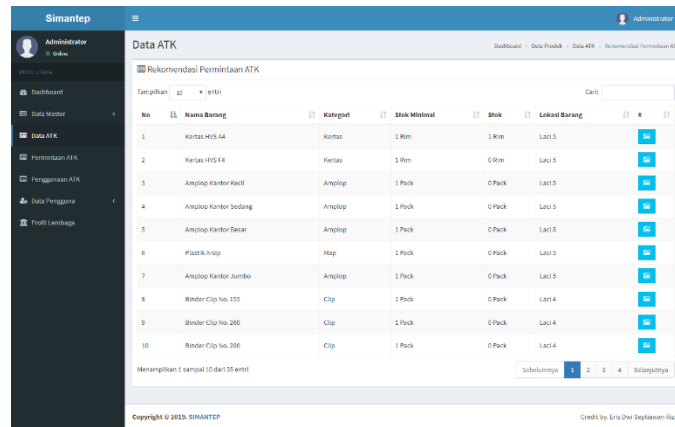
Figure 4 ATK Recommendation Page

This Page Displays A List Of ATK Requests Recommended By The System. The Stationery Data On This Page Is ATK That Reached The Minimum Stock Limit. Each ATK Is Given A Minimum Stock Limit So That The System Can Provide A Reminder To The User If The ATK Stock Reaches The Specified Minimum Supply. On The Right Of Figure 4, There Is A Blue Button To See Photos Of ATK. The Recommendation Page For ATK Requests Is Also Equipped With Features Such As Pagination, Search, And Sorting.

4.1.3 Category Data
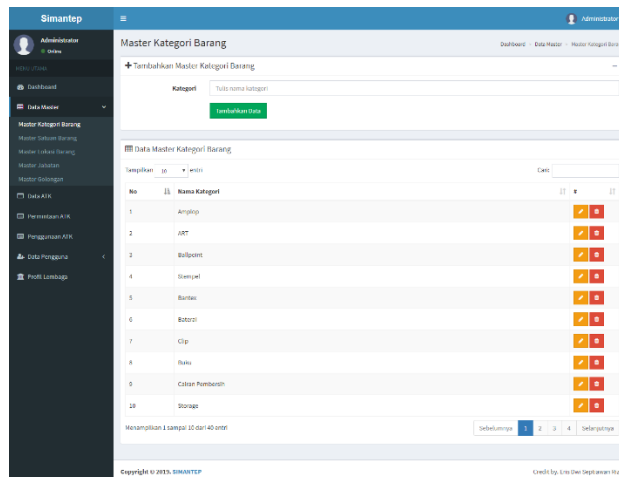
Figure 5 Item Category Data Page

The Page Above Is The Managing Category Master Data Page In The Form Of CRUD (Create, Read, Update And Delete) Item Category Data. This Item Category Data Is Used To Add Item Category Options To The ATK Data Input. To Add A Category Data, Write The Name Of The Category At The Top In Figure 5, Then Click The "Add Data" Button. To Edit The Data, Click The Yellow Button On The Data To Be Edited, Then Change The Data On

The Top Form, Then Click The "Save Changes" Button. To Delete The Data, Click The Red Button On The Data, Confirmation Of Data Deletion Would Appear, And Click "OK". This Page Also Features Pagination, Search, And Sorting.
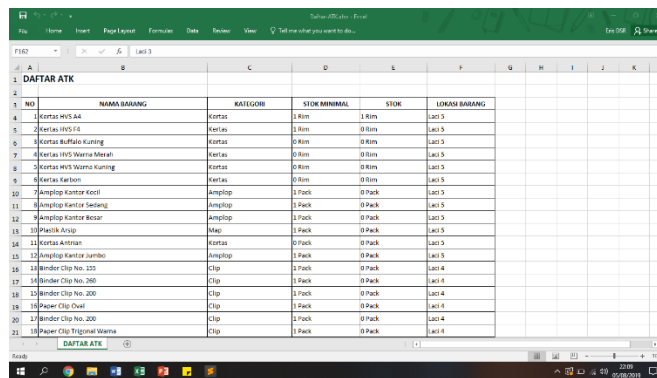
4.1.4   Item Location Data
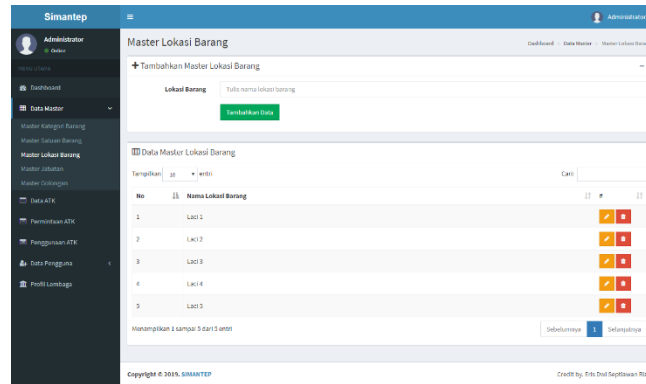
Figure 6 Item Location Data Page

The Page Above Is A Page That Manages Item Location Master Data, Manages In The Form Of CRUD (Create, Read, Update And Delete) Item Location Data. This Item Location Data Is Used To Add Item Location Options To The ATK Data Input. To Add Item Location Data, Write The Location Name At The Top In Figure 6, Then Click The "Add Data" Button. To Edit The Data, Click The Yellow Button On The Data To Be Edited, Then Change The Data On The Top Form, Then Click The "Save Changes" Button. To Delete The Data, Click The Red Button On The Data, Confirmation Of Data Deletion Would Appear, And Click "OK". This Page Also Features Pagination, Search, And Sorting.

4.1.5   ATK Data
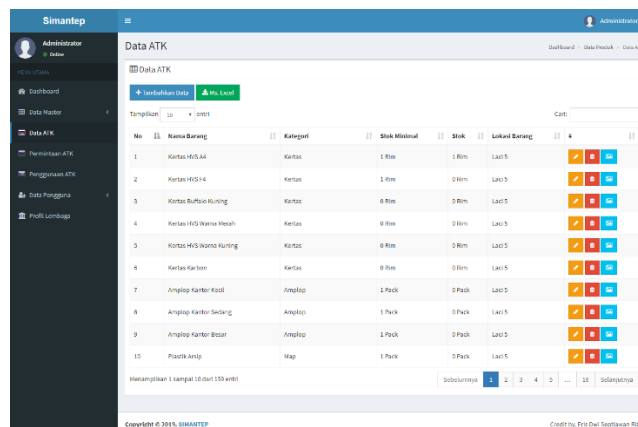
Figure 7 ATK Data Page

The Page Above Is A Page For Managing ATK Data, Managing Of CRUD (Create, Read, Update And Delete) ATK Data. This Page Also Features Pagination, Search, And Sorting.

The Following Is An Explanation Of The CRUD Features On The ATK Data Page:

a. To Add ATK Data, Click The "Add Data" Button At The Top Of Figure 7, Then You Will Be Directed To The ATK Add Form Page, Click The "Add Data" Button To Save The Data.

b. To Edit Data, Click The Yellow Button On The Data To Be Edited, Then It Will Be Directed To The Form To Edit The Data, Then Click The "Save Changes" Button.

c. ATK Data Can Also Be Downloaded Into Microsoft Excel By Pressing The "MS Excel" And Save Data In Local Storage.

d. To Delete Data, Click The Red Button On The Data To Be Deleted, Then A Confirmation Of Data Deletion Appears, Click "OK".

e. The Light Blue Button On The Right Is The Button For Viewing ATK Photos Using The Pop-Up Mechanism.

3.3.4.1 Download ATK Data To Microsoft Excel

Figure 8 Download Results Of ATK Data

ATK Data Can Also Be Downloaded Into Microsoft Excel, As Can Be Seen In Figure 8. To Be Able To Download Data Into Microsoft Excel Format, Press The "MS Excel" And The Data Is Stored In Local Storage
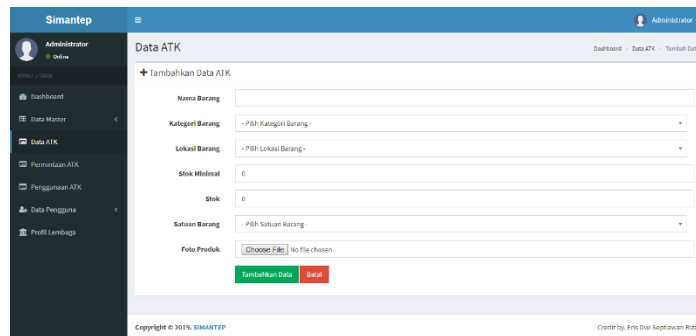
3.3.4.2 Add ATK

Figure 9 Screenshot Of Add ATK Page

The Add ATK Page Is Used To Add New ATK Data. As Seen In Figure 3.23, This Page Contains A Form Of Data Filling On Stationery, Including The Name Of The Item, Category Of Goods, Unit Of Goods, Location Of Goods, Minimum Stock, Stock, And Photos Of Stationery. All Fields Are Required To Be Filled In, Except For The ATK Photo Where The User Is Free To Leave Or Fill In The Picture. If You Have Filled In All Data, Save The Data By Clicking The Button.

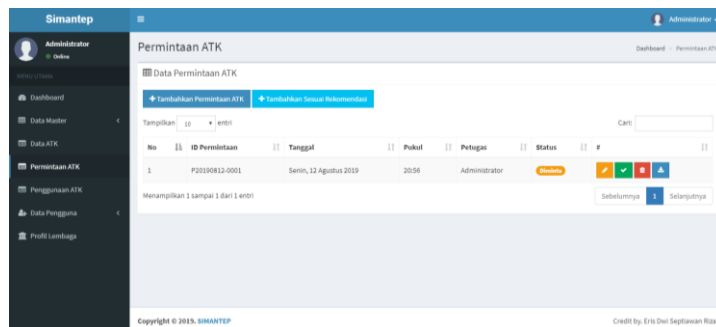## 4.1.6   ATK Request List Page

Figure 10 Screenshot Of The Stationery Request List Page

This Page Contains Data On Previous ATK Requests. This Page Supports The Features Of Requesting ATK Based On Recommendations Or Manual, Editing ATK Requests, Confirming Receipt Of Stationery, Downloading Office Notes And Deleting Stationery. The Edit Request And Delete Request Feature Can Be Done If You Have Not Confirmed Receipt Of ATK. The ATK Request Data Is Completed With An ATK Request Status Which, By Default, The Status Will Be Filled With "Requested" And In Red Colour After Inputting The Request. After Confirming Acceptance, The Status Will Change To "Done" And Will Appear Green. This Page Is Equipped With Features Of Pagination, Search, And Sorting.

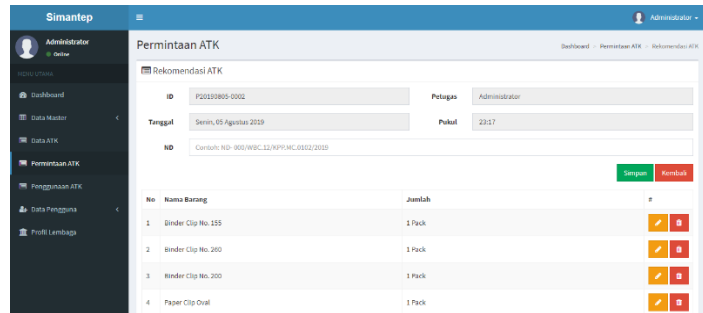### 4.1.7 Request For Stationery Based On Recommendations

Figure 11 The ATK Request Page According To The Recommendations

This Page Contains The ATK Request Form With The ATK Request Recommendation Feature, So The Request Form Automatically Has The ATK Recommended By The System. Recommendations Were Obtained From The Data On Stationery Stocks Where The Amount Was Less Than Or Equal To The Minimum Store That Had Been Previously Determined. Users Only Need To Determine The Amount Of ATK To Be Requested, But By Default, The Number Of ATK Requested Is Only 1 Item (Pack/Pcs/Rim/Roll). After, The User Enters The ND Number To Be Able To Make An Official Note Through This System. Users Can Increase Or Decrease The Stock Via The Yellow Button, And Users Can Also Delete ATK Request Data Via The Red Button. Next, Click The "Save" Button To Save, Or Click The "Back" Button To Cancel The ATK Request.
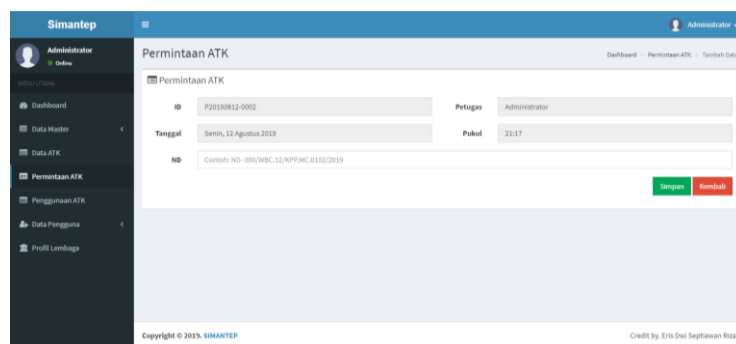
4.1.8 Requesting ATK Manually

Figure 12 Manual ATK Request Page

This Page Contains The ATK Manual Request Form. The ATK Request Is Filled In By The User One By One As Needed. However, The Request Data Entry Form Will Not Appear Before Writing The ND Number And Clicking The "Save" Button After The ATK Request Form Appears. Users Can Search For Stationery Through The Form In The Form Of An

Option Equipped With A Search Feature In That Option, And The User Also Determines The Number Of Stationery To Be Requested. Still, By Default, The Number Of Stationery Requested Is 1 Item (Pack/Pcs/Rim/Roll). Users Can Increase Or Decrease Stock Via The Yellow Button, And Users Can Also Delete ATK Request Data Via The Red Button.

4.1.9 Save ATK Requests

Figure 13 ATK Request Page After Saving

After The ND Number Is Stored, It Will Appear As Shown In Figure 13. The ATK Request Form Will Appear With The Form Filling In The Name Of The Item And The Amount Of ATK Requested. The Name Of The Item Is An Option That Is Equipped With A Search Feature In Its Field So That The User Does Not Need To Search Manually. To Add The Request Data, After Filling In The Data, Press The Enter Key Or Click The Green Button To The Right Of The Table.
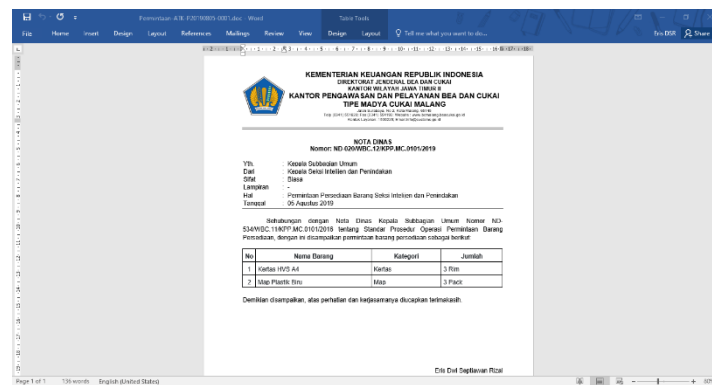
4.1.10 Download Official Note

Figure 14 Official Note

The Picture Above Is The Official Note Using The Features In The SIMANTEP Application. The Data That Was Taken From The Input Are The ND Number, The Request Data, The Date Of The Request Input, And The Section Head Signed. The Official Note Is Downloaded In Word Document 97-2003 (Doc) Format
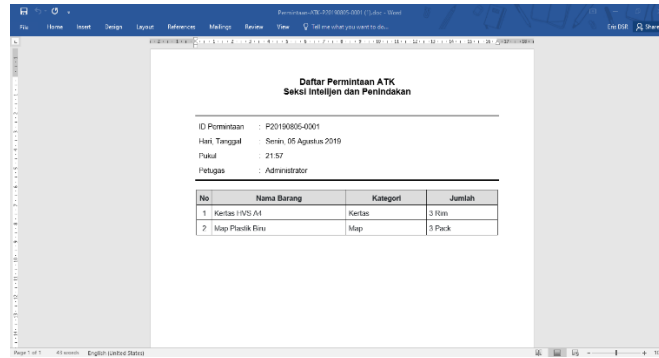
3.3.4.3 Download ATK Request Data

Figure 15 Download Results Of ATK Request Data

The Picture Above Is Download Results Of The ATK Request Data In Microsoft Word Using Word Document 97-2003 (Doc) Format. The Data Are Request Id-Data, Date, Time, Officer, And ATK Request Data.

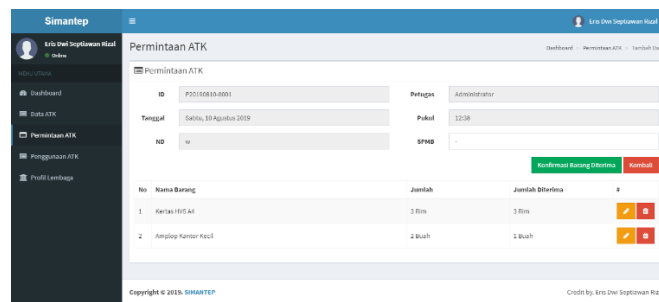**3.3.4.4 ATK Confirmation Of Receipt**

Figure 16 ATK Confirmation Of Receipt

The Image Above Is A Confirmation Page For ATK Acceptance. Here, The User Is Asked To Enter The SPMB Number From The Reply Letter Given By The General Subdivision As The Confirmation Of The ATK Submission To The Intelligence And Enforcement Section. Then The User Edits The Number Of Goods Received If The Number Of Requests Is The Same As The Amount Received, Immediately Click The "Confirm Goods Received" Button. After That, The System Will Store The Data And Update The ATK Stock According To The Number Of Items Received By The User.
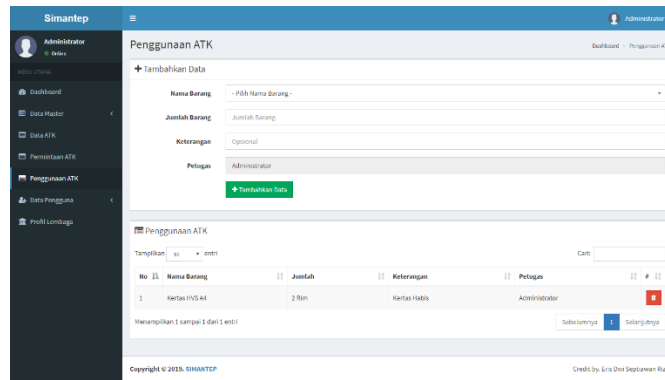
4.1.11 ATK Usage

Figure 17 ATK Usage Page

The ATK Usage Page Is Used To Record Anyone Who Has Used ATK In The Intelligence And Enforcement Section. This Feature Is Needed To Update The Stock On Used ATK. This Feature Also Prevents Unnatural And Wasteful Use Of ATK. The Data To Be Inputted Are The Name Of The Item, The Amount Used, The Description (Optional), And Who Uses It (Using Login). After Inputting The Data, The User Can Press The "Add Data" Button To Record The Use Of ATK. After Being Stored, The System Will Update The ATK Stock By Reducing The ATK Stock By The Number Of ATK Used. All ATK Usage Data Will Be Displayed Below The ATK Usage Form. If A Wrong Input Is Provided, A "Delete" Button Is Provided. However, This Delete Feature Can Only Be Accessed By The Administrator.

5   CONCLUSIONS

Based On The Design Of The ATK Management Information System For The Intelligence And Enforcement Section/Sistem Informasi Manajemen ATK Seksi Intelijen Dan Penindakan (SIMANTEP), The Following Conclusions Can Be Drawn:

1. Customs And Excise Malang Did Have A System That Could Regulate The Entry And Exit Of ATK From Existing Stocks, So Sometimes There Was A Difference With The Manually Calculated Stock/

2. This Research Produced A Web-Based ATK Management Information System That Provided Transaction Services For The Entry And Exit Of Stationery Supplies For The Malang Customs And Excise Office, Intelligence And Enforcement Section, Or Called SIMANTEP.

3. This Stationery Management Information System Automatically Recorded The Retrieval And Use Of Stationery Based On Input From Employees Accompanied By Evidence In The Form Of Official Notes.

ACKNOWLEDGEMENTS

REFERENCES

[1] T. R. W. G. Kresna, H. Dan E. Budiman, "APLIKASI SISTEM MANAJEMEN BARANG PADA TOKO ALAT TULIS KANTOR DI TOKO SISWA," Dalam Prosiding Seminar Ilmu Komputer Dan Teknologi Informasi, Samarinda, 2017.

[2] J. Hutahaean, KONSEP SISTEM INFORMASI, Yogyakarta: Deepublish, 2015.

[3] M. Laaziri, K. Benmoussa, S. Khoulji Dan M. L. Kerkeb, "A Comparative Study Of PHP Frameworks Performance," Dalam The 12th International Conference Interdisciplinarity In Engineering, Tirgu Mures, 2019.

[4] O. Betari, M. Erramdani, S. Roubi, K. Arrhioui Dan S. Mbarki, "Model Transformations In The MOF Meta-Modeling Architecture: From UML To Codeigniter PHP Framework," Europe And MENA Cooperation Advances In Information And Communication Technologies, Vol. 520, Pp. 227-234, 2017.

[5] S. S. Gaikwad Dan P. P. Adkar, "A Review Paper On Bootstrap Framework," ICONIC RESEARCH AND ENGINEERING JOURNALS, Vol. 2, No. 10, Pp. 349-351, 2019.

[6] M. Mahalakshmi Dan D. M. Sundararajan, "Traditional SDLC Vs Scrum Methodology – A Comparative," International Journal Of Emerging Technology And Advanced Engineering, Vol. 3, No. 6, Pp. 192-196, 2013.