

Website-Based Digital Correspondence Application Design for Office Administration Education Students

Andi Basuki^{1,*}, Madziatul Churiyah², Buyung Adi Dharma³, Dewi Ayu Sakdiyyah⁴,
Vina Nur Machabbatulillah⁵, Filianti⁶

^{1,2,3,4,5,6}Office Administration Education Study Program, Faculty of Economics, State University of Malang
E-mail: andi.basuki.fe@um.ac.id

ABSTRACT

The rapid development of technology must be accompanied by various preparations made by the world of education. One of them is for students of office administration education. The purpose of this research is to design a web-based digital correspondence application. The research method used is an experimental method that uses the stages of System Development Life analysis, including application planning, application analysis, design, product development, testing and maintenance. Based on the research that has been done, in the development of this digital correspondence application the pages that will be developed for lecturers are a dashboard that contains general information, a class menu that is useful for creating and delivering materials and assignments, and a profile for changing NIP, name and password. Meanwhile, the page developed for students is a dashboard that contains general information, materials, assignments and profiles. The product test results show that the digital correspondence application that has been developed can be operated easily and is very helpful in the student learning process, especially in correspondence courses. In addition, lecturers can also monitor the psychomotor development of students in making digital letters, so this application is very effective for distance learning.

Keywords: *Application design, Correspondence, Digital, Website*

1. INTRODUCTION

In the current era of globalization, the use of technology from various fields of office has begun to shift to using digital devices [1]–[3]. This is done because the use of digital devices will make the work easier and be able to cut the processing time to be shorter [4]. The rapid development of technology, of course, must also be accompanied by various preparations made by the world of education [5]. One of them is for students of office administration education. Where these students are prepared to be able to become teachers for vocational students majoring in office automation and governance. In addition to being teachers, office administration education students are also prepared to be able to enter corporate and government offices. So that in the lecture process, they must follow the development of skills needed in the world of work.

One of the office communications is written communication, especially in the form of correspondence or other scripts [6]. The letter or script must be created by an officer known as factual writing [7]. In factual writing, it involves 6 elements, namely: factual information, organization, language, time constraints (timing), presentation, the reader (audience) [8]. Letters can reflect the self-image of the sender, realizing that the company needs to be selective in choosing a secretary who will handle the correspondence or correspondence activities. The company's image can be tainted and tarnished if the correspondence affairs in its business activities are handled by a secretary who does not master correspondence techniques and ethics [9]. An organization or company must establish relationships with other organizations or companies so that its business activities can run well and smoothly [10]. In an effort to establish and maintain these relationships, letters still play an important role in addition to the use of other

means of communication such as e-mail, telephone, fax, email, internet and others [11]. So what is meant by business correspondence is basically various kinds of information and data exchange activities through correspondence media in supporting business activities between a company and other companies [12].

Correspondence course is one of the subjects that must be taught by PADP students. The competencies that must be understood are about how to communicate in writing properly and correctly, so that the required message can be conveyed properly. On the other hand, in sending messages in writing, there are standard rules that must be considered. Like the writing of the letterhead, opening greetings, contents, and closing greetings, all of these things have standard guidelines that must also be adhered to. The use of correspondence media was still done manually, namely using paper which would then be sent to the recipient. However, the use of letters through paper media of course also takes a long time, because they have to go through various processes to arrive at the recipient's hands.

Making letters through media such as Microsoft Word, of course, also takes a long time, because they have to adjust a standard layout, and make a standard language that is easy to accept. Even though in reality this has really helped office work, compared to using manual type media as happened around the 90s. However, with the development of this technology, of course, there are also various updates to further accelerate human work. One of them is the development of media in the form of digital correspondence media to create letters automatically without having to think about the layout of the letter with various examples in it. So that in making a letter, the application user does not need to look for examples from other letters because they are already available in the application.

The development of this digital correspondence application is also intended to make it easier for lecturers to carry out the lecture process, and monitor student work because the application to be developed also has an assignment feature where lecturers can give lecture assignments and students can send their assignments through this feature. This is also because in the current pandemic conditions, the lecture process can only be carried out at their respective homes. So that through the development of these applications, students are expected to be able to adapt to various digital office technologies and an active lecture process occurs between lecturers and students.

2. LITERATURE REVIEW

2.1 Correspondence

Correspondence is a form of communication between an employee and another employee, between an employee and an agency or vice versa, between an employee and an organization or vice versa, between an agency and an agency, between an organization and an organization and so on by using letters as a medium [7]. Correspondence can also be interpreted as an activity of exchanging letters by individuals or by organization. In addition, it can also be interpreted as a form of communication by using letters as a tool [12]. So it can be concluded that correspondence is a form of communication by utilizing the media as a tool. Letters are written means to convey messages, although not all written messages can be called letters, but messages conveyed verbally clearly cannot be called letters.

2.2 Website

In general, the web is an information page provided via the internet so that it can be accessed throughout the world as long as it is connected to the internet network [13]. Website is a computer network-based information that can be accessed anywhere with relatively low cost. The web is a form of implementation of the web programming language (web programming) [14]. As for accessing the address on the website an internet network is needed. The Internet is a global computer network formed from local and regional computer networks, enabling data communication between computers connected to the network [15].

Using the web, of course, requires a Web Browser application, which is a software that functions to display and interact with documents stored on a web server [16], [17]. To access information from a website, we need to install a web browser application on client computers. Examples of web browser applications currently available are Mozilla Firefox, Internet Explorer, Chrome, Opera and so on. Web Server is the software that houses the World Wide Web (www) [18]. The Web Server waits for a request from a client using a browser. If there is a request from the browser, the web server will process the request and then provide the result of the process in the form of the desired data back to the browser.

3. RESEARCH METHODS

In this research process, the researcher uses the System Development Life Cycle (SDLC) model, which is a model and methodology in the process of making and changing systems in order to build a certain system [19]. The model has several stages, including the planning, analysis, design and implementation stages.

3.1 SDLC Model Stages

In this research analysis consists of several stages, namely:

- a. Application planning
In making this website-based digital correspondence application, researchers plan for user needs, in this case the needs of lecturers as teachers and students as application users who will work on every practice question given by the lecturer. In addition, a feasibility study is also carried out on the application to be developed so that when the application is finished, the application is in accordance with what the user needs. At this stage, the planning process for the time of manufacture is also carried out, so that the time required for the development process is well-scheduled.
- b. App analysis
The analysis carried out by researchers on the system that is currently running is very necessary, because from this analysis stage the researcher can determine a system renewal that is right on target so that the resulting system will be a solution to the problems at hand. In the application designed by researchers, there are 2 access rights, namely lecturers as managers and students as users.
- c. Design
At this design stage, the researcher designs the database and other supporting tools needed in making this digital correspondence application. At this stage it starts from designing the UI/UX so that the application is easy to use, creating data flows in the device, and making process diagrams. All designs are made to simplify the manufacturing process and minimize the features that are wasted and not used in the application.
- d. Product development
After the product design process is carried out, the next step is to implement the design that has been made previously.
- e. Test
After the product development process, then proceed with the product testing process. In this stage the product is tested first whether it is in accordance with user needs as in the analysis stage. In addition, to find out whether the application is in accordance with the design made previously. At this stage, if the application is not suitable, it means that it will return to the previous process to fix the problem. The purpose of this test is to minimize defects in the developed program. So it is hoped that the application developed later is really able to solve the problems faced by users.
- f. Maintenance
When all stages have been passed, it means that the application created is ready to use. However, it does not stop at this stage, because when the application is

finished, maintenance or maintenance must be carried out on the application.

The stages of the SDLC model can be described as in Figure 1 below.

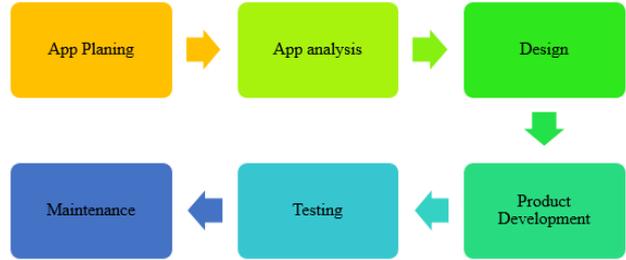


Figure 1. Stages of SDLC model application development

3.2 Data Collection Method

To achieve what the researchers have described in the writing of this scientific paper, the researchers conducted research using descriptive analysis methods, namely methods that use data obtained during the observation process, then collected and arranged systematically which is then analyzed to produce a conclusion.

- a. Observation
That is, the researcher made direct observations of the lecture process that had been carried out so far, which had been carried out using large notebooks and using Microsoft Office Word.
- b. Literature Study
That is by studying the literature related to the material to be discussed by the researcher.
- c. Interview
Namely, researchers conducted interviews directly related to the application development plan. However, interviews are not only conducted at the beginning of development, but at the end of development in the testing process, researchers also conduct interviews with users regarding the development of applications that have been made, to find out problems or obstacles if they are not in accordance with the development plan.

4. RESULTS AND DISCUSSION

The quality of higher education is one of the most important issues in higher education institutions worldwide. Various efforts have been made to improve the quality of higher education in the last three decades with several ideas related to the quality concept of alumni produced. The focus groups of some of these efforts are students, academics, course materials or a combination of them in general to understand what the focus groups expect from the concept of quality and its implementation to higher education. One of these quality developments is to provide various special skills in each student's field,

such as PADP students are given the expertise to use digital correspondence applications so that students are familiar with various new technologies.

4.1 Target Users

The target users of the designed application are all lecturers and students of office administration education who teach correspondence courses

4.2 Application Planning

The correspondence application was developed as an effort to deal with very rapid digital developments. As for the correspondence practice so far, it is still carried out manually using a ledger which is then typed into Microsoft Word. This of course takes a long time because you have to do the editing process which takes quite a long time. So that researchers intend to develop digital applications aimed at students and lecturers. Where the application is a digital correspondence application that can be used to create letters automatically by filling out a letter-making form by selecting a certain letter form, depending on the user's needs. So it can shorten the processing time of making letters. On the other hand, this application is also planned to be used to make it easier for lecturers to review the results of student correspondence work so that teachers can immediately provide an assessment in the application when students have completed their work.

4.3 Application analysis

Before entering the next stage, the researcher conducted an analysis of the application to be developed. The analysis of this application is used to answer the problem of managing mail manually which has been done so far. As for the results of the research analysis, it was found that to make it easier for lecturers to know the progress of students, in this application two access rights were created, namely access as lecturers and as students. Lecturers can create classes and give assignments and materials to the class. while students can choose classes according to their respective classes. This means that this application can be used by several lecturers with their respective students.

4.4 Application Design

To facilitate understanding of the designed application, the researcher describes it in the form of the following Unified Modeling Language (UML) visual modeling.

a. activity diagrams

Is a diagram that describes the activities that can be carried out by an entity or user that will be applied to the application.

Activity Diagrams Lecturer

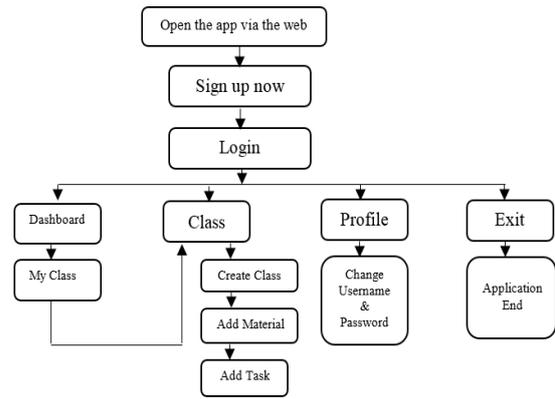


Figure 2. Activity diagram of lecturer's digital correspondence application

Activity Diagrams College student

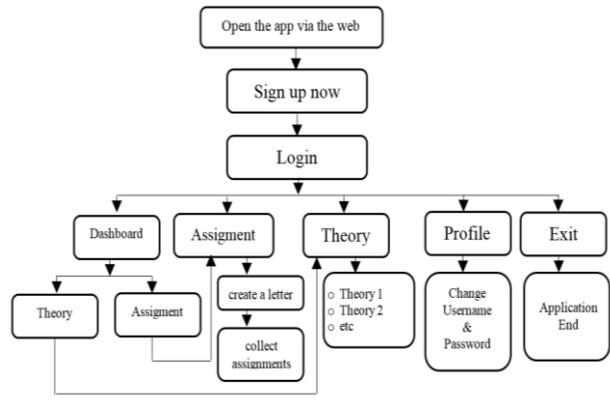


Figure 3. Activity diagram of student digital correspondence applications

From the Activity Diagram above, it can be described that the lecturer plays a role in managing the class by providing materials and assignments as well as providing an assessment of the results of student work. Meanwhile, students act as recipients of the material and play a role in doing the tasks given by the lecturer concerned. The material provided is in the form of correspondence material consisting of the scope of correspondence, parts of the letter, the form of the letter, and types of letters.

b. Use Case Diagram

Is a description of the flow of interaction between the user and the system. This diagram shows the activities carried out by users in a digital correspondence application. The following is illustrated in Figures 4 and 5.

Use Case Diagram Lecturer/Teacher

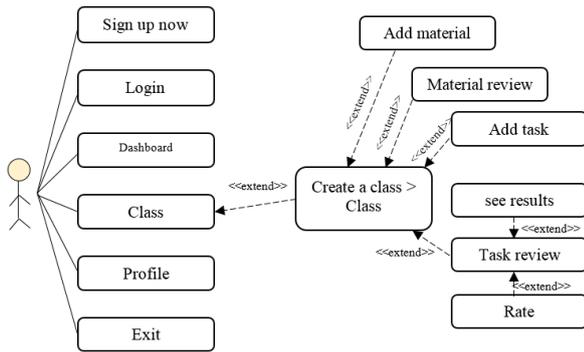


Figure 4. Use case diagram of a lecturer's digital correspondence application

Use Case Diagram College student

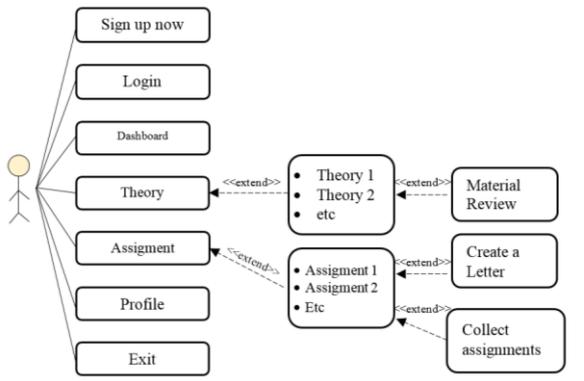


Figure 5. Use case diagram of student digital correspondence application

From the use case picture above, it can be described that the system can be used by two kinds of users, namely:

1) Lecturer

Lecturers are users who have access to add and review materials, assign assignments, review assignments and provide grades.

2) Student

Students have slightly limited access, which is only able to review material, and do assignments in the form of making digital letters given by lecturers.

In this digital correspondence application development design, the developer will make 3 types of letters, namely personal letters, official letters, and commercial letters. Personal letter is a type of letter that is made for personal or personal purposes sent to other parties, either to a person or to an organization or company. While official letter is a letter that has been issued by a government office or agency or also other official institutions and is not subject to fees. Meanwhile,

a commercial letter is a letter that will be made or also written for business or trade purposes.

As for in this application, the letter layout uses full straight, straight, half straight, hanging and curved shapes. Meanwhile, for the design of the letter-making form, it consists of the following sections.

Letterhead : name of agency, type of agency, address, city, telephone/cell phone, website, logo

Identity : letter date, letter number, subject, attachment

Destination address : agency name, address, city

Contents of the letter : opening greeting, body of letter, closing greeting, name, position nama

4.5 Product Development

This application was developed according to a pre-made design. In the development of this product the creation of an attractive interface is also very influential on the success of application development. This design is made as easy as possible to use, because it will affect user interest in using the application.

The interface design in the development of this product is as follows.

a. Main page

This page is the first page that is faced by the user, which is in the form of a development profile and a brief summary of the digital correspondence developed, besides that there is also a login and register menu.

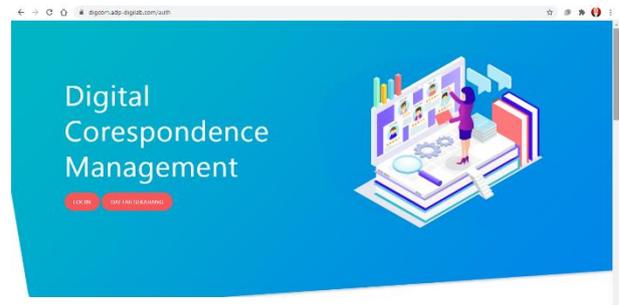


Figure 6. Main page

b. List page

This page is a user registration page in which there are 2 user choices, namely as a lecturer or as a student. When a user wants to log in as a student, the form that must be filled out includes: student identification number, full name, class, and password. Meanwhile, when the user logs in as a lecturer, the form that must be filled is the employee's identification number, full name and password

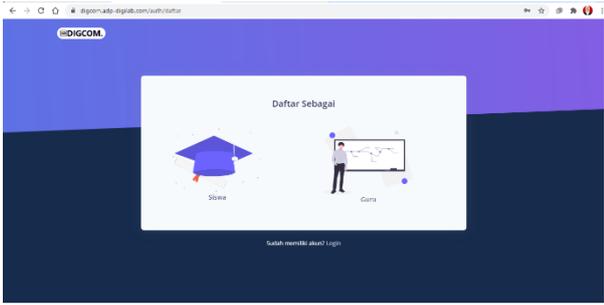


Figure 7. Registration page

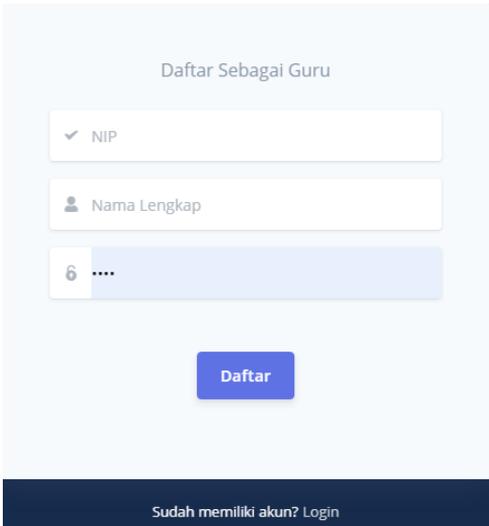


Figure 8. Registration form for teachers

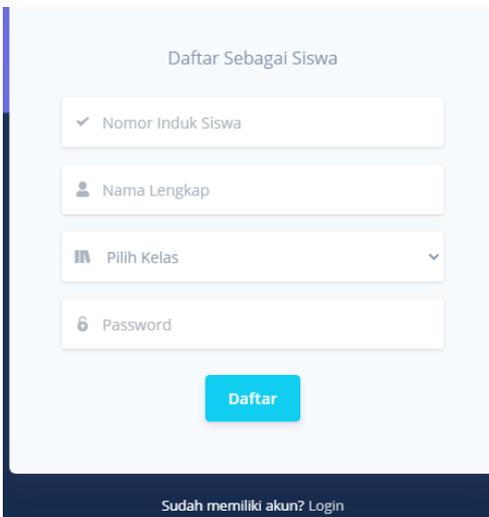


Figure 9. Registration form for students

c. Login page

This page functions as a user data validation page consisting of the NIM/NIP and user password.

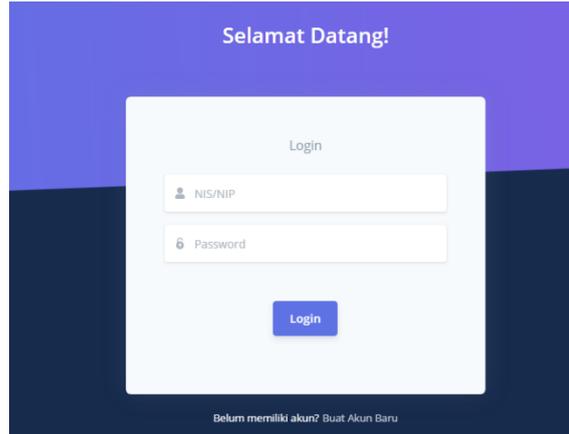


Figure 10. Login page

d. Dashboard page

The dashboard page is the first page that will be seen by the user when logging in to the application. On this page, the views that appear on the lecturer's account are the number of classes, the number of students, the number of materials, and the number of assignments. In addition, there is also a menu for my letter and class which will be integrated with the class menu and letter menu. Meanwhile, the display that appears on the student account is the name of the class taken, the name of the lecturer, the amount of material given by the lecturer and the number of assignments that have been collected. In addition, this page is also integrated with the material menu and task menu.

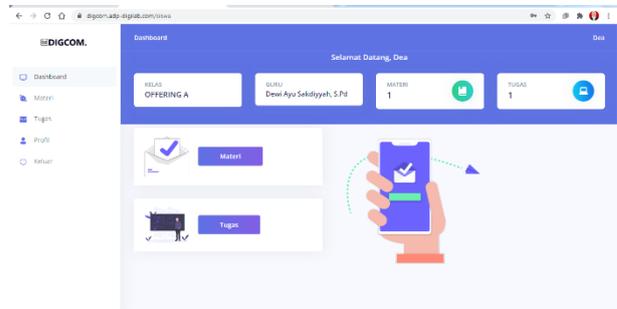


Figure 11. Student dashboard page

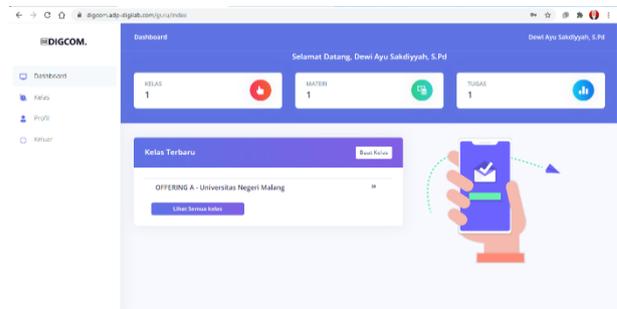


Figure 12. Teacher dashboard page

e. Material Page

This page is a menu that will appear when the user registers as a student, on this page it displays some materials that have been sent by the lecturer, the selected

material will appear in pdf form and can be printed or downloaded.

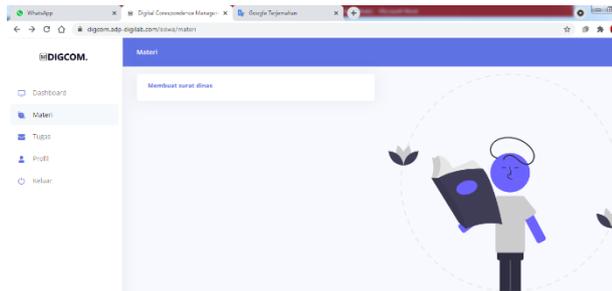


Figure 13. Material Page

f. Task List Page

This page is a menu that will appear when a user registers as a student, on this page it displays the tasks given by the lecturer, such as task 1, task 2, and so on. On this page the tasks that have not been done or have been done will have a mark. Furthermore, when the student presses the task, a new page will appear about the explanation of the task given and the deadline for completion. Then students can press the menu for a letter that has the page, if the assignment steps have been understood, then students can see the results of the letter they made and can print the letter and envelope. When the work has been completed, students can submit the assignment.

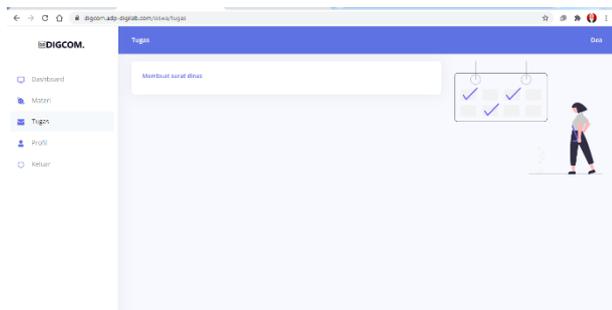


Figure 14. Task list page

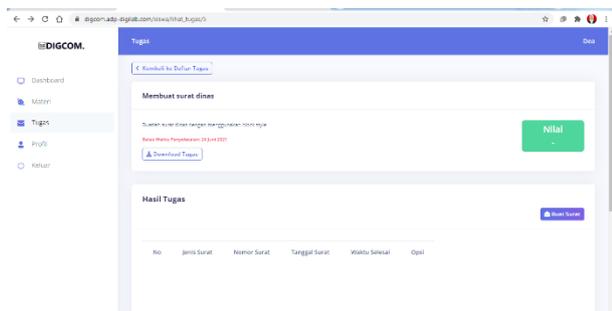


Figure 15. Instructions page

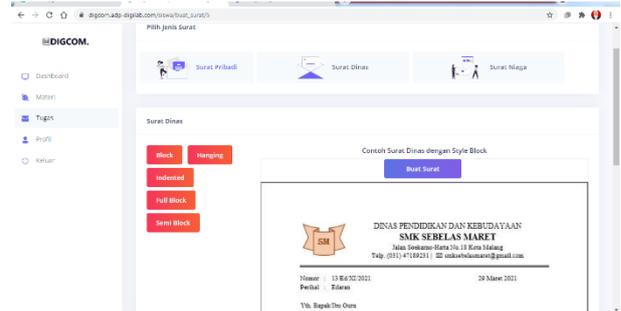


Figure 16. Pages create a letter

g. Class Page

This page is a menu that will appear when the user registers as a lecturer, on this page displays the create class menu and the number of class lists that have been created. When the class list has been created, the lecturer can press the desired class name to enter a new page in the form of material creation and assignment creation. In addition to the material, the lecturer can give a title and upload the material that has been prepared previously in pdf form. As for adding assignments, lecturers can press the add task button and fill in the task title, task description, upload assignments in pdf form and give a time limit for collecting assignments. Next on the task list, click the task you want to view.

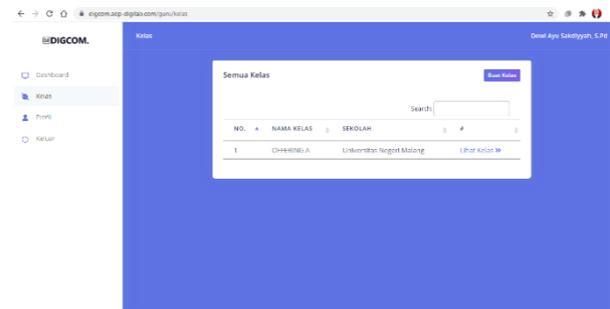


Figure 17. Class list page and create a class

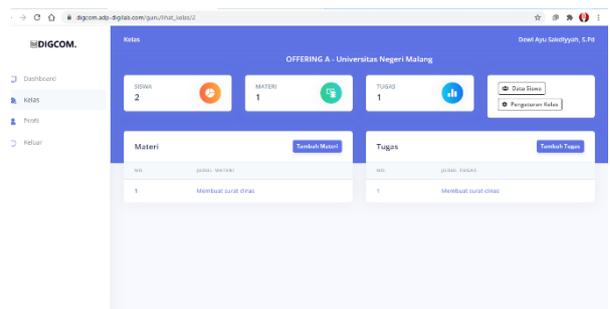


Figure 18. Add material and add tasks page Halaman

h. Profile Page

This page is a page that appears on both lecturer and student accounts whose function is to edit the user profile if you want to change it, which includes the NIP/NIM, user name and password.

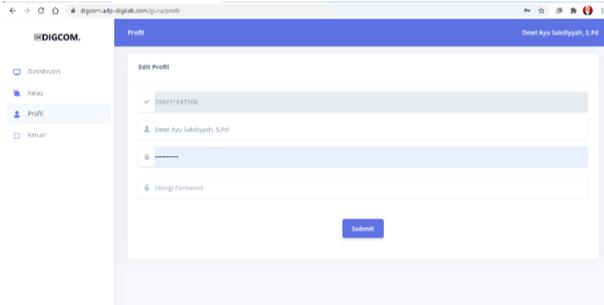


Figure 19. Profile page

i. Exit Menu

If the user has finished his work, the user can press the exit button which will display the first page of the digital correspondence media.

Based on the design made by the researcher, it is hoped that digital correspondence applications can be developed that are interesting for students and lecturers so that they can provide meaningful experiences for correspondence learning.

4.6 Tests

In the product testing process, researchers asked validators for material experts, media experts, and users. In this case, the application users are lecturers and students. Based on the results of product testing, it shows that the application is feasible to be used in the learning process. This is based on the results of assessments from validators and users who get a score of 95% from media experts and 84% from material experts. Meanwhile, based on the results of interviews with users, it is stated that the application is very helpful in the correspondence learning process, where students can easily understand the forms and types of letters based on the examples displayed in the application before the user does the questions given by the lecturer. Meanwhile, according to users as lecturers, this application is very helpful in the lecture process because it can find out the results of student work directly and provide feedback in the form of comments and grades in the application.

4.7 Maintenance

In the development of this application, it does not only stop at the testing stage, but maintenance and repairs are still carried out if in the midst of use there is a system error, the developer will repair and maintain the application.

4.8 Product Advantage

This application that has been designed has several advantages including:

- a. It can be operated on various media such as smartphones, tablets and laptops, this is because this application was developed based on a website so that it can be more flexible
- b. Make it easier for lecturers to control the development of students' abilities in learning correspondence
- c. Make it easier for students to understand various types of letters and their letter forms
- d. Lecture materials and assignments, especially correspondence courses, are easier to distribute.

- e. Work time is more flexible, not limited by space and time
- f. There is a feedback feature where lecturers can provide comments and grades on student work
- g. Students can find out the progress of the evaluation results given by the lecturer

5. CONCLUSION

Based on the results of the development design and discussion of the website-based digital correspondence application, it can be concluded that the application designed by the researcher is an application needed by Office Administration Education students, especially in correspondence courses. This is considering that the development of technology is increasingly rapid, so it must be accompanied by various preparations such as providing valuable experience in the use of technology in the lecture process. The designed application is expected to facilitate the delivery of material in correspondence courses so that it is useful for students and lecturers who need it. The test results show that this application is feasible to use in the learning process.

AUTHORS' CONTRIBUTIONS

No	Name	Author Position	Contribution
1	Andi Basuki	First Author	Activity design and final synchronization of the manuscript
2	Madziatul Churiyah	Second Author	Preparing research instruments
3	Buyung Adi Dharma	Third Author	Problem analysis
4	Dewi Ayu Sakdiyyah	Fourth Author	Creating a media design
5	Vina Nur Machabatulillah	Fifth Author	Creating a media design
6	Filianti	The Sixth Author	Looking for previous research as a reference

ACKNOWLEDGMENTS

The research team would like to thank the State University of Malang through BNPB funds so that the research team was given the opportunity to conduct research and development of learning media in the form of digital correspondence media as student practice materials in correspondence course.

REFERENCES

- [1] D. Zamora, J. C. Barahona, dan I. Palaco, "Case: Digital Governance Office," *Journal of Business Research*, vol. 69, no. 10, hlm. 4484–4488, Okt 2016, doi: 10.1016/j.jbusres.2016.03.013.
- [2] A. M. Levenda, I. Behrsin, dan F. Disano, "Renewable energy for whom? A global systematic review of the environmental justice implications of renewable energy technologies," *Energy Research & Social Science*, vol. 71, hlm. 101837, Jan 2021, doi: 10.1016/j.erss.2020.101837.
- [3] I. A. Shaikh dan G. Colarelli O'Connor, "Understanding the motivations of technology managers in radical innovation decisions in the mature R&D firm context: An Agency theory perspective," *Journal of Engineering and Technology Management*, vol. 55, hlm. 101553, Jan 2020, doi: 10.1016/j.jengtecman.2020.101553.
- [4] R. Bierbaum, S. A. Leonard, D. Rejeski, C. Whaley, R. O. Barra, dan C. Libre, "Novel entities and technologies: Environmental benefits and risks," *Environmental Science & Policy*, vol. 105, hlm. 134–143, Mar 2020, doi: 10.1016/j.envsci.2019.11.002.
- [5] M. Sailer, F. Schultz-Pernice, dan F. Fischer, "Contextual facilitators for learning activities involving technology in higher education: The Cb -model," *Computers in Human Behavior*, vol. 121, hlm. 106794, Agu 2021, doi: 10.1016/j.chb.2021.106794.
- [6] A. Awalludin, M. R. Sanjaya, dan A. Bataria, "Hubungan Pemahaman tentang Surat-Menyurat terhadap Kemampuan Menulis Surat Dinas Siswa Kelas VII SMP Negeri 9 Oku," *Diksa*, vol. 6, no. 1, hlm. 31–42, Jun 2020, doi: 10.33369/diksa.v6i1.11436.
- [7] A. Bloch, D. Vasques Filho, dan M. Bojanowski, "Networks from archives: Reconstructing networks of official correspondence in the early modern Portuguese empire," *Social Networks*, hlm. S0378873320300769, Sep 2020, doi: 10.1016/j.socnet.2020.08.008.
- [8] N. Nani, "Analisis Kesalahan Berbahasa dalam Pembelajaran Menulis Surat Dinas Pada Siswa Kelas VII G di SMP Negeri 17 Kota Serang," *JMBSI*, vol. 3, no. 2, hlm. 135, Nov 2018, doi: 10.30870/jmbsi.v3i2.5227.
- [9] J. Xhema, H. Metin, dan P. Groumpos, "Switching-Costs, Corporate Image and Product Quality effect on Customer Loyalty: Kosovo Retail Market," *IFAC-PapersOnLine*, vol. 51, no. 30, hlm. 287–292, 2018, doi: 10.1016/j.ifacol.2018.11.303.
- [10] W. Guo, Y. Guo, M. Zhong, dan Z. Yang, "Optimizing the input amount to build cruise companies' direct selling channel based on consumers' choice behavior," *Research in Transportation Business & Management*, hlm. 100624, Feb 2021, doi: 10.1016/j.rtbm.2021.100624.
- [11] D. Sumecki, M. Chipulu, dan U. Ojiako, "Email overload: Exploring the moderating role of the perception of email as a 'business critical' tool," *International Journal of Information Management*, vol. 31, no. 5, hlm. 407–414, Okt 2011, doi: 10.1016/j.ijinfomgt.2010.12.008.
- [12] D. A. Priyadi dan E. W. Lestari, "Perancangan Sistem Informasi Pelayanan Surat Menyurat Pada Kantor Desa Tanjungsari Kutowinangun Kebumen Berbasis Desktop," vol. 4, no. 2, hlm. 8, 2018, doi: 10.31294/jtk.v4i2.3444.
- [13] A. Tekerek, "A novel architecture for web-based attack detection using convolutional neural network," *Computers & Security*, vol. 100, hlm. 102096, Jan 2021, doi: 10.1016/j.cose.2020.102096.
- [14] Y. Song, "Web service reliability prediction based on machine learning," *Computer Standards & Interfaces*, vol. 73, hlm. 103466, Jan 2021, doi: 10.1016/j.csi.2020.103466.
- [15] M. S. Ahmed, "Designing of internet of things for real time system," *Materials Today: Proceedings*, hlm. S2214785321026122, Apr 2021, doi: 10.1016/j.matpr.2021.03.527.
- [16] V. K. Malviya, S. Rai, dan A. Gupta, "Development of web browser prototype with embedded classification capability for mitigating Cross-Site Scripting attacks," *Applied Soft Computing*, vol. 102, hlm. 106873, Apr 2021, doi: 10.1016/j.asoc.2020.106873.
- [17] M. Asim, M. F. Amjad, W. Iqbal, H. Afzal, H. Abbas, dan Y. Zhang, "AndroKit: A toolkit for forensics analysis of web browsers on android platform," *Future Generation Computer Systems*, vol. 94, hlm. 781–794, Mei 2019, doi: 10.1016/j.future.2018.08.020.
- [18] J. Jiang, B. Song, Y. Tang, K. Chen, Z. Wei, dan J. Meng, "m5UPred: A Web Server for the Prediction of RNA 5-Methyluridine Sites from Sequences," *Molecular Therapy - Nucleic Acids*, vol. 22, hlm. 742–747, Des 2020, doi: 10.1016/j.omtn.2020.09.031.
- [19] S. A. Aljawarneh, A. Alawneh, dan R. Jaradat, "Cloud security engineering: Early stages of SDLC," *Future Generation Computer Systems*, vol. 74, hlm. 385–392, Sep 2017, doi: 10.1016/j.future.2016.10.005.