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# Information System of Teacher Assignment Journal in Wooi State Junior High School

# Sistem Informasi Jurnal Penugasan Guru SMP Negeri Wooi

*Aris Rakhmadi[1], Khumaila Masfarina Yusrifa[1]

[1)] Department of Teknik Informatika, Fakultas Komunikasi dan Informatika, Universitas Muhammadiyah Surakarta, Jawa Tengah, Indonesia

**INFORMASI ARTIKEL**

**NASKAH DITERIMA**: 16 Maret 2021
**DIREVISI**: 14 April 2021
**DISETUJUI**: 15 Juni 2021

***KORESPODENSI PENULIS :**
aris.rakhmadi@ums.ac.id

## Abstract

*The teaching journal recording system is a document of evidence of teaching implementation that can guarantee the quality and quantity of the learning process. Wooi State Middle School, Wonawa District, Yapen Islands Regency, Papua still records teaching journals manually by handwritten. The aim of this research is to develop a teacher assignment journal information system as a solution to the problems experienced by Wooi State Middle School in the form of scattered journal summaries. This system development uses prototyping and implementation using HTML, PHP, CSS, Javascript, MySQL, and the CodeIgniter Framework. Research has produced a journal information system that provides website-based journal recording and recording features. The research used the Blackbox testing method to test all available features, and this method stated that everything worked well. The system also passed testing using the System Usability Scale (SUS) method which resulted in a score of 74.62, which means it is acceptable.*

***Keywords:*** *Teaching Journal, School, Information System*

**Abstrak**

Sistem pencatatan jurnal mengajar adalah salah satu dokumen bukti pelaksanaan pengajaran yang dapat menjamin kualitas dan kuantitas proses pembelajaran. SMP Negeri Wooi, Kecamatan Wonawa, Kabupaten Kepulauan Yapen, Papua masih melakukan pencatatan jurnal mengajar secara manual dengan tulis tangan. Tujuan penelitian ini adalah mengembangkan sistem informasi jurnal penugasan guru sebagai solusi dari permasalahan yang dialami SMP Negeri Wooi yang berupa tercecernya rekapan jurnal. Pengembangan sistem ini menggunakan prototyping dan mengimplementasikan dengan menggunakan HTML, PHP, CSS, Javascript, mysql, dan Framework Codeigniter. Penelitian yang telah menghasilkan sistem informasi jurnal yang menyediakan fitur pencatatan dan perekapan jurnal berbasis website. Penelitian menggunakan metode Blackbox testing untuk menguji seluruh fitur yang tersedia, dan metode ini menyatakan semuanya berjalan dengan baik. Sistem juga melewati pengujian menggunakan metode System Usability Scale (SUS) yang menghasilkan nilai 74,62 yang artinya dapat diterima.

Kata kunci: Jurnal Pengajaran, Sekolah, Sistem Informasi

## I. PENDAHULUAN

Wooi State Middle School is one of the schools located in Yapen Islands Regency, specifically Wonawa District, Wooi Village. In carrying out its teaching and learning activities, Wooi State Middle School still uses manual teaching journal recording, namely by handwriting. In fact, this method is certainly no longer relevant if you look at the increasingly rapid advances in technology and information. Talking about technology, there is no reason for Wooi State Middle School not to change to a more modern system, because even though it is located in a village that is difficult to reach, the government has paid more attention to facilitating complete computer equipment. It would be a shame if these facilities were not utilized properly.

This research has conducted a short interview with Kaerudin Siswanto, as the head of Wooi State Middle School. There are several problems that prevent the old system from running optimally. These include: lack of teacher discipline in carrying out learning activities, errors easily occur when writing journals, there is a discrepancy between the journal written and the actual situation, it is difficult when disciplining teachers who do not teach due to lack of evidence, and it is difficult when recording journal data when it is to be carried out. assessment by the school supervisor. Based on the results of the interview, the researcher proposed creating a journal information system that provides alternative solutions to the problems experienced by Wooi State Middle School, therefore it can support efficient and better teaching and learning activities.

 

Research with a similar theme has been carried out by Kaspiatun who developed a journal recording system at MTs Miftahul Hikmah (Kaspiatun, 2022). The system built is in the form of employee attendance with an activity description feature added. Another research developed a monitoring system in the form of a journal at SMK Negeri 2 Padang Panjang (Yusmar, 2020). The system has a feature of adding journals by teachers and assessments carried out by supervisors by reviewing predetermined factors. Then (Santoso, 2019) also conducted research on the journal system. This research was conducted at SMP Negeri 18 Merangin with features developed similar to those of (Yusmar, 2020). What differentiates this research from existing research lies in the addition of recap features in various formats, user access restriction features and a more user-friendly display thanks to the help of the framework

## II. METHOD

In compiling this Wooi State Middle School case research, a prototype model was used to develop the proposed system. The reason for research using a prototype model is because of the ease of development communication between developers and users which makes it easier for users to choose a system that is appropriate to what is expected, so that a satisfactory system will be produced and of course in accordance with the client's needs. Prototyping requires user participation and allows them to view and interact with the prototype. This development allows them to provide more feedback and specifications. With this method the author can communicate well with clients. The client is completely involved (Sabale, 2012). The prototype stages are depicted in Figure 1.

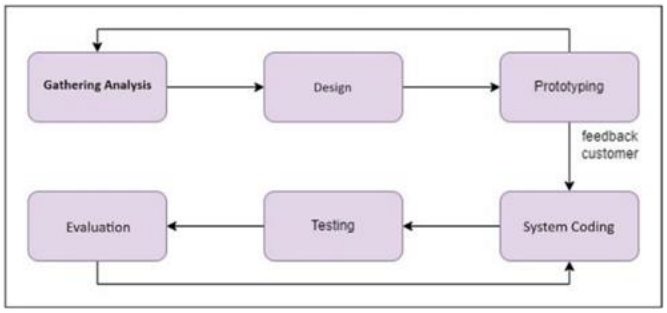


Figure 1. The Stages of Prototype Flowchart

The initial stage of the research was gathering needs which began with conducting an interview with the principal of Wooi State Middle School. These needs are classified into two, namely functional needs and non-functional needs. Functional requirements describe the service capabilities of a system (Danto, 2011). The functional requirements are that the system has a journal recording feature, provides a photo upload feature for daily journals, the system can recap data in various formats, the system can print or download recap data, and the system can limit the access rights of each user.

In system development, this research used an Acer Swift 3 laptop with Windows 10 specifications, 8 GB RAM capacity, and an AMD Ryzen 5 processor. The software used included XAMPP, Visual Studio Code Version 1.3.1. The database uses MySQL and the programming language uses HTML, PHP, Javascript, and the Codeigniter 4 framework.

The design stage includes the design stage which includes Use Case Diagrams, Activity Diagrams and Database Design. Use Case diagrams are used to show interactions between systems and actors affecting the system as a whole (Kulkarni, 2021). This system includes two actors, namely Teacher and Admin. Teachers are actors who can view and change profiles, view journals, fill in journals, recap journals, print journals and upload documents. Admin is an actor who can view and change profiles, view journals, fill in journals, summarize all journals, summarize all documents, add member data, access all teacher data, add new actors, and give permission to actors.


Figure 2. Usecase Diagram of the Developed System

An activity diagram is a definition of the flow activities of a software system (Kulkarni, 2021). Activity diagrams contain any activities that can be carried out by users. When successfully logging in with the correct username and password, the user will be directed to the main page according to the category. Figure 3 is a diagram of how the system login process takes place, where the user will enter the system based on the role they have.

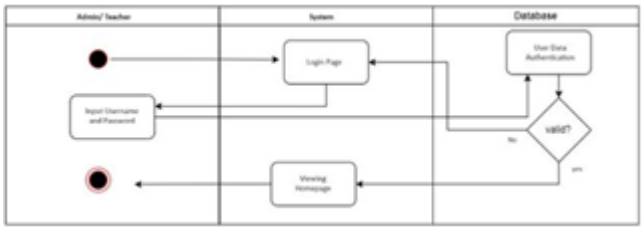


Figure 3. Login Activity Diagram

 

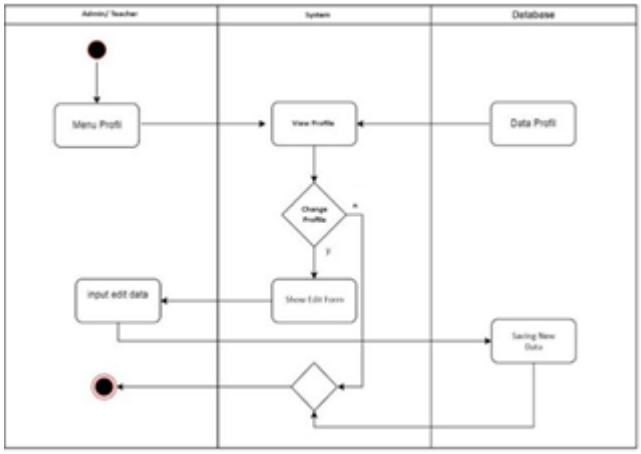


Figure 4. Changing Profile Activity Diagram

Admin and teacher, both are allowed to modify profile. When an error occurs when inputting profile data, either the Admin or Teacher can change it in the profile menu, the process is shown in Figure 4.

Activity diagram viewing, adding journals by admin and teacher. Actors can view journal data and enter journal data. The process is shown in Figure 5.

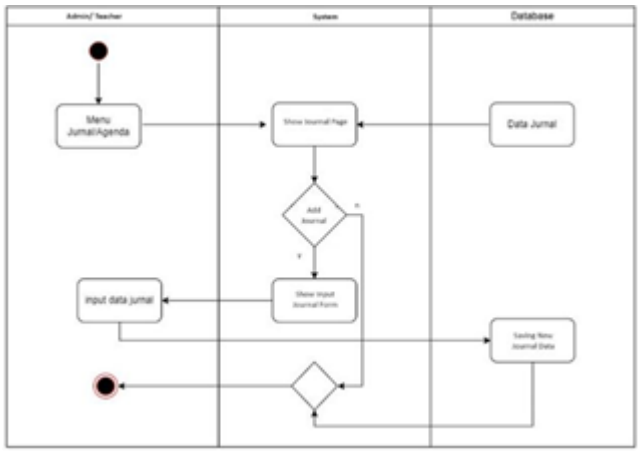


Figure 5. Activity Diagram on Adding Journal Data

Activity diagram summarizes journal, teacher, class, subject data by admin. The activity of recapping data as a whole can only be carried out by the Admin, one of which is recapping all teacher journals, the process is shown in Figure 6.

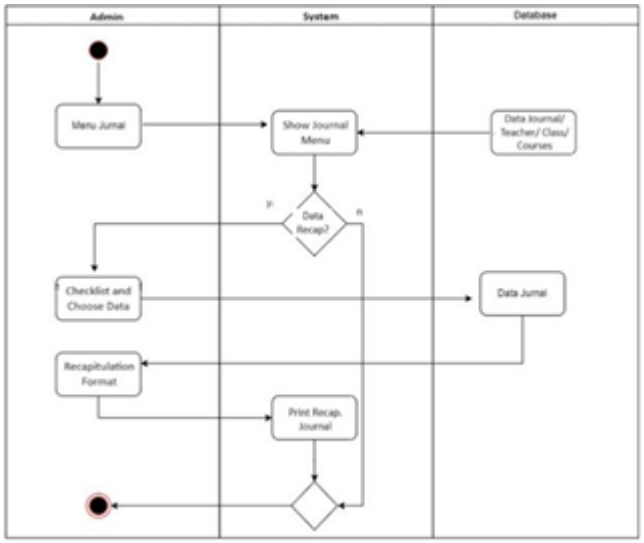


Figure 6. Activity Diagram on Journal Recapitulatio

Activity Diagram Changing User Access Rights by Admin. Admins can limit any access carried out by users, for example wanting to add access or delete user access, the process is shown in Figure 7.

Database design is a description of the database architectural design that will be implemented in the system. Used to define any relationships that occur between tables, shown in Figure 8.

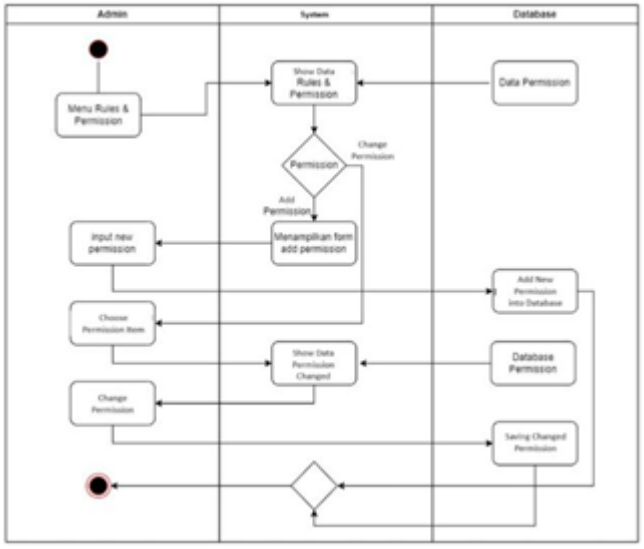


Figure 7. Change Permission Data Activity Diagram

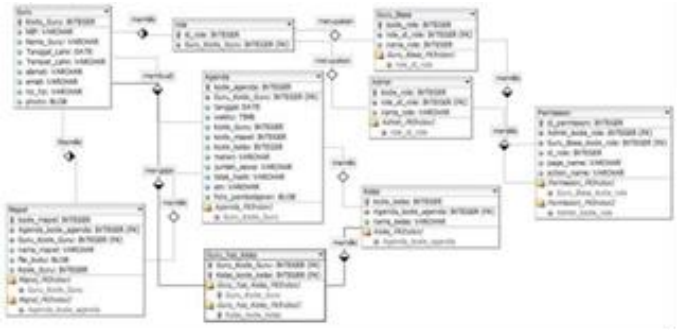

Figure 8. Entity Relationship Diagram

 

The next stage is prototyping. Reviewing the needs that have been defined, a prototype is created. The Figma application was used in creating the user interface for this website to produce a good, attractive, contemporary and of course user friendly design. The prototype can be changed according to the client's wishes, if it is felt to be lacking and if there are additional or reduced features. The coding stage is entering the stage where the system will be implemented in the form of programming code that has been discussed, namely using definitions in HTML, PHP, Javascript, and with the help of the Codeigniter framework 4. According to (Kelen, 2018), the Codeigniter Framework is one of several well-known framework that supports MVC (Model, View, Controller). An illustration of the MVC architecture in Codeigniter is shown in Figure 9

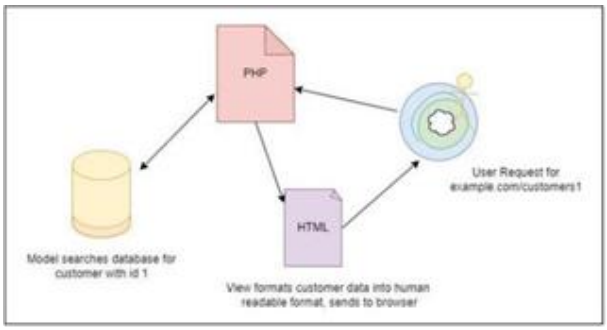


Figure 8. MVC architecture in Codeigniter

The testing stage is an effort to find out whether there are errors and whether the system is running as required. At this stage testing is carried out. This research asks clients again to seek feedback. If there are changes in needs, it will be discussed again and improvements to the system will be made. System testing will be carried out using the Blackbox test and the System Usability Scale (SUS) test. Blackbox Testing is a type of system test that is carried out by observing and checking the results of system functionality (Sholeh, 2021). Meanwhile, the SUS test functions to assess the quality of the level of convenience, speed, errors and level of user satisfaction (Sharfina, 2017). Questions with odd numbers (1,3,5,7,9) are questions with a positive tone, while questions with even numbers (2,4,6,8,10) are questions with a negative tone (Wardani, 2019)

TABLE 1. SYSTEM USABILITY SCALE QUESTIONS

| No | Question |
|---|---|
| 1 | I think I will use this system often |
| 2 | I feel this system is so complex that it makes me difficult |
| 3 | I think this system is easy to use |
| 4 | I feel like I need someone else's help to be able to use this system |
| 5 | I assess that the features of this system are working well |
| 6 | I feel like this system has a lot of inconsistencies |
| 7 | I feel others will easily learn how to use this system |
| 8 | think this system is confusing |
| 9 | I feel very confident using this system |
| 10 | I need to learn many things about this system first before using this system |

The evaluation stage is the stage in completing the prototype creation. Evaluation is carried out to find out whether the system that has been developed has fulfilled its function or not. The author asked the client, if there are changes, they will continue to make changes until the system is in accordance with their wishes. When the system is accomplished, ready to use, and there are no revisions, the system will be uploaded to Wooi State Middle School's site.

## III. *RESULTS AND DISCUSSION*

On the teacher page, data will be displayed on all teachers/staff who work at Wooi State Middle School, only the Admin actor can access it. Where on the teacher page, the Admin can add a new teacher account, or change teacher data, delete it, and also print it in various formats.

The journal page is a page that contains journal data. On this page, the journal data that has been filled in will be displayed. Users can add new journals as shown in Figure 11. Apart from that, if an error occurs the user can change or delete it.

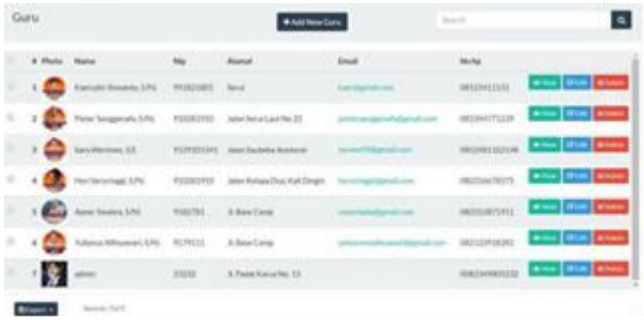


Figure 10. Teacher Actor Data

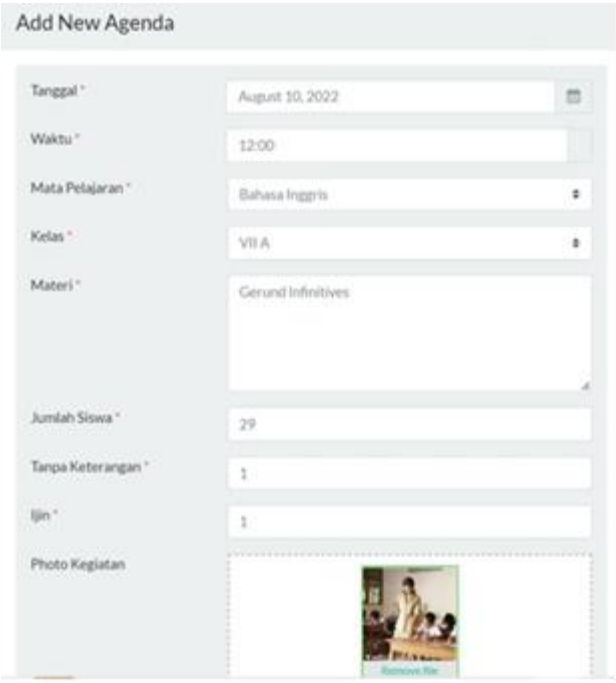


Figure 11. Adding Journal Data

BlackBox testing is useful for ensuring that the features on this site are working properly and achieving defined requirements.

 

Testing is carried out by checking and observing system functionality. The following are the results of the BlackBox test in Table 2.

According to (Alqahtani, 2019), the score obtained from respondents on odd numbered questions is reduced by 1 for each question, while on even numbered questions by 5 the score obtained from the respondent is reduced, then the resulting scores from the 10 questions are added up and multiplied by 2.5 to get a number in the range 0-100. The range of SUS values is shown in Figure 12.

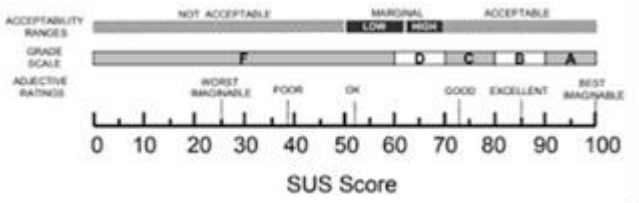


Figure 12. SUS Valu

TABLE 2. BLACKBOX TESTING RESULT

| No. | Scenario | Test Case | Expected Result | Conclusion |
|---|---|---|---|---|
| 1. | Login System | Enter the appropriate username or email and password, then press the Login button | Displays the main page according to its role. | Valid |
| | | Input an incorrect username or email and password, then click the Login button | The user fails to log in to the system and a pop-up appears "username & password incorrect!" | Valid |
| 2. | Admin shows teacher data | Press the Teacher menu | Displays the Teacher page | Valid |
| 3. | Admin adds new teacher data | Click the "Add Teacher" button, fill in the new teacher data form, then click save. | Teacher data is stored in the database and displayed on the Teacher page | Valid |
| 4. | Admin changes teacher data | Select the teacher data you want to change, change the form, then click save | The data has been successfully changed and stored in the database | Valid |
| 5. | Admin deletes teacher data | Select the teacher data you want to delete, then click the delete button, press the yes button. | Teacher data has been successfully deleted and is no longer displayed on the Teacher page. | Valid |
| 6. | The teacher looks at the journal | Press the Agenda menu | Displays the Agenda page containing the journal | Valid |
| 7. | Teacher adds journal | Press the "add" button, fill in the journal form, press the save button | The journal has been successfully added and is displayed on the Agenda page | Valid |
| 8. | The teacher changes the journal data | Select the journal data to be changed, change the form you want to change, click the save button | The journal you want to change has been successfully saved in the database and displayed on the Agenda page | Valid |
| 9. | The teacher deletes the journal data | Select the journal you want to delete, press the delete button, press the yes button. | The data has been successfully deleted and is no longer displayed on the page | Valid |
| 10. | Admin prints journal data | Select the journal data you want to print, select the desired format, press the print button | Admin can add, print journals, output will appear according to what was selected (pdf, doc, etc.) | Valid |
| 11. | Teachers upload teaching files | Press the upload button, select the teaching file to be uploaded | The file is successfully uploaded, saved in the database, and displayed on the Teaching Files page | Valid |
| 12. | Admin adds permissions | Press the add button, fill in the new permissions form, select the user and what permissions are given, press save | The new permission has been successfully added, users who are given permission can access the permitted pages. | Valid |
| 13. | Admin changes permissions | Choose data permissions, change form contents, and save | Permission changed successfully. | Valid |
| 14. | Admin removes permissions | Select the permission to delete, press delete | The permission has been successfully deleted, the user whose permission has been deleted can no longer access it | |
| 15. | Logout System | Clicking the Logout button | The user exits the system and enters the main page. | Valid |

Referring to this research topic, the criteria for respondents were teachers and staff at Wooi State Middle School, students and the general public. Research respondents are listed in Table 3, while the results from the respondents are in Figure 13.

TABLE 3. RESPONDENT CRITERIA

| No | Respondent | Total |
|---|---|---|
| 1 | Teacher and Staff in Woii State Middle School | 6 |
| 2 | University College | 9 |
| 3 | Other society | 5 |
| | | 20 |

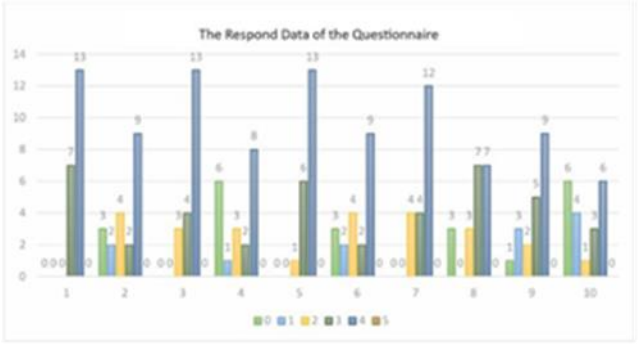


Figure 13. The Respond Data of Questionnaire

Based on data from Figure 12, a value of 74.6 is obtained, including acceptable with grade C and a Good rating.

## IV. CONCLUSION

Reviewing the research that has been carried out, a website-based prototype of the teacher assignment journal information system at Wooi State Middle School has been successfully created. The system can record and record journals online, making it easier for teachers and staff at Wooi State Middle School and supervisors when they need journal recaps to carry out school assessments. The results of Blackbox testing show that the system can run according to the defined functionality. Then the System Usability Scale test produced an average value of 74.62, which
proves that the system is included in the acceptable category with a Good rating. So that the system is acceptable and suitable for use by teachers and staff at Wooi State Middle School. In this research, researchers include several suggestions if this system will be developed again. The suggestions attached are adding a journal data filter feature and grouping journals by month/year.

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