Refining Web-Based Job Search through Goal-Directed Design Improvement

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| Article Information	Abstract
	This study aims to improve a job search web application that not only addressed usability problems but also surpassed user expectations. A recently released job search web application was found to have usability problems during interviews with the Information Technology division. To measure the usability of the application and provide recommendations for improvement, the study uses the Goal-Directed Design framework, Performance Measurement method, and System Usability Scale measurement method. The evaluation was conducted twice, with the first assessment identifying problems and the second evaluation measuring the effectiveness of the recommendations made. The website prototype was developed and passed all test scenarios with an A+ grade. The modifications make important level of effectiveness, achieving an A+ grade with an 85% effectiveness rate. Furthermore, the website received exceptional user satisfaction, with an A+ rating and a score of 85.5 in usability satisfaction.

A. INTRODUCTION

In the last two decades, the world has become more advanced due to the continuous development of technology, which makes human life easier in many ways. The internet plays a crucial role in this development, particularly in job searching. The majority of people, specifically 75%, trust and use online job search sites when looking for a job [1]. Effective use of the internet can aid job seekers in their search for employment opportunities. Certain online portals offer an efficient method for job seekers to browse and search for job vacancies [2]. Some examples of job portals in Indonesia are jobstreet.co.id, linkedin.com, glints.com, kalibrr.com, and others [3]. A new job search web application called Humanvue [4] was launched in March 2022. Humanvue is a new web-based job search application, which allows users to search for job vacancies and apply for them. However, there are usability issues with the application, where one of the outstanding features of the website is difficult for users to find. The Information technology Development division in the company is responsible for developing the Humanvue website. The features on the website are important in an application has a greater effect on user satisfaction with the application [5]. In the interview, the website has not undergone any user experience evaluations yet, even though it is necessary to assess the quality of user comfort and usefulness [6]. To achieve a good user experience, it is necessary to evaluate the usability of the application [7]. Usability refers to how easily users can use the application and it can be measured through efficiency, effectiveness, and satisfaction [8]. Usability and user experience are important because if users have a bad experience with an application, they will likely switch to another application that offers the same services [9]. In previous studies [10] and [11], it was explained about evaluating user experience using usability attributes that measure effectiveness, efficiency, and satisfaction on the application to determine the user experience results. Meanwhile, in previous studies [12] and [13], usability evaluation and recommendations were made with the aim of developing and improving the website by designing its user interface and successfully improving its usability. The novelty of the study lies in the specific context of the Humanvue website and the implemented modifications. The study demonstrates, for the first time, the positive impact of these modifications on the website's effectiveness, efficiency, and user satisfaction. This new research contributes to the understanding of how website improvements can enhance user experiences and meet user needs. Additionally, the study offers novel suggestions for future research, such as exploring different user experience dimensions beyond usability and considering the perspectives of website administrators.

B. RESEARCH METHODS

Goal-Directed Design

Goal-Directed Design is a design method that focuses on user goals, which can be implemented in a product or application [14]. In this case, "goals" are different from tasks. A goal is more focused on the result, while a task is a step or process to achieve that goal. This approach was introduced by Alan Cooper in Palo Alto, California, by emphasizing user goals [15]. By focusing on user goals,

application designers will know user satisfaction, so that the goals of a company can be achieved more effectively [16]. Goal-Directed Design focuses on how to design a user interface model by identifying behavior-based application needs to achieve user and stakeholder goals [17]. It can combine various goals from different users to achieve a single objective [18].
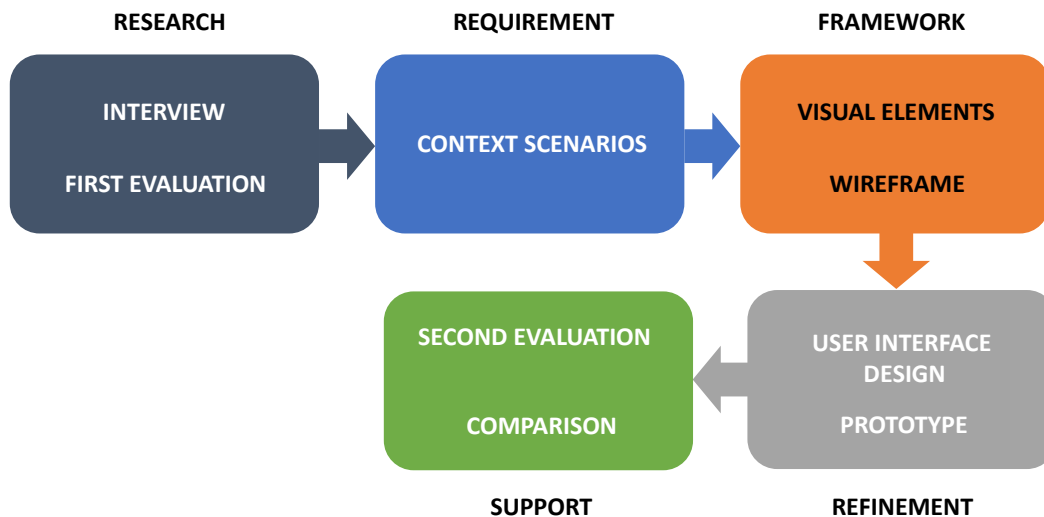
Figure 1. Goal-Directed Design Processes

This research process is adapted to the Goal-Directed Design as shown in Figure 1. In this research, Goal-Directed Design consists of Research, Requirement, Framework, Refinement, and Support. Goal-Directed Design is used because this framework provides solutions to meet user needs and organizational and technical requirements at the same time. The design analysis process is also detailed and produces documentation that can be used by the development team. Each phase of this research is divided into several activities. In the Research phase, interview and evaluations of the Humanvue website will be conducted. The evaluation of the user experience of the website is based on three usability attributes: effectiveness, efficiency, and satisfaction [19]. To measure user satisfaction, The System Usability Scale is applied since it is a popular standardized questionnaire for evaluating or assessing the perceived usability aspects of a product [20]. In the Requirement phase, scenario contexts will be created as guidelines for redesigning the website application. In the Framework phase, visual design and wireframing will be determined to ensure consistency in the design. In the Refinement phase, user interface design, prototyping, and development of recommendations for the website will be conducted. The final phase, Support, will conduct a second evaluation, which includes an evaluation of the user experience design already created in the form of a website prototype, as well as an analysis of the comparison between the first and second evaluations.

Performance Measurement

Performance measurement is a method or metric that focuses on analyzing and observing users when performing specific tasks or activities assigned. The presence of performance measurement allows for the comparison of values

between recommendation prototypes and existing prototype models. In this study, Performance measurement consists of Effectiveness Value, Effectiveness Value, and User Satisfaction.

The effectiveness of a task can be assessed by measuring the completion rate, which quantifies the number of tasks accomplished by users [21]. The completion rate is a straightforward and informative metric that is often represented using binary values, where one indicates successful task completion and zero represents unsuccessful task completion. By applying Equation 1, the effectiveness is determined by dividing the number of completed tasks by the total number of tasks and multiplying the result by 100%. It is important to note that a minimum completion rate of 78% is required to consider the task completed [22].

$$Completion\ Rate = \frac{Success\ Tak + 0.5 \times Partial\ Success}{Total\ Task} \times 100\% \qquad (1)$$

The value of the efficiency aspect can be measured based on task time, which refers to the duration in minutes/seconds taken by participants to complete specific tasks [23]. The task time is calculated by subtracting the start time from the end time. The start time is determined when the participant has finished reading the given task scenario, and the end time is determined when the participant has completed all tasks and actions, including review. After determining the task time, the overall relative efficiency is calculated to measure the overall time taken by all participants. Equation 2 represents the overall relative efficiency [22]:

$$Overall\ Relative\ Efficiency = \frac{Total\ Times\ of\ Success\ Task}{Total\ Time\ of\ All\ Tasks} \times 100\% \qquad (2)$$

	The System Usability Scale Standard Version	Strongly Disagree				Strongly Agree
		1	2	3	4	5
1	I think that I would like to use this system frequently.	o	o	o	o	o
2	I found the system unnecessarily complex.	o	o	o	o	o
3	I thought the system was easy to use.	o	o	o	o	o
4	I think that I would need the support of a technical person to be able to use this system.	o	o	o	o	o
5	I found the various functions in this system were well integrated.	o	o	o	o	o
6	I thought there was too much inconsistency in this system.	o	o	o	o	o
7	I would imagine that most people would learn to use this system very quickly.	o	o	o	o	o
8	I found the system very awkward to use.	o	o	o	o	o
9	I felt very confident using the system.	o	o	o	o	o
10	I needed to learn a lot of things before I could get going with this system.	o	o	o	o	o

Figure 2. The System Usability Scale Questions Standard Version [22]

Table 1. System Usability Scale Curved Grading Scale [25]

Grade	System Usability Scale
A+	84.1 – 100
A	80.8 – 84.0

A-	78.9 – 80.7
B+	77.2 – 78.8
B	74.1 – 77.1
B-	72.6 – 74.0
C+	71.1 – 72.5
C	65.0 – 71.0
C-	62.7 – 64.9
D	51.7 – 62.6
F	0 – 51.6

The System Usability Scale is a popular and widely used standardized questionnaire for evaluating or assessing the perceived usability aspects of a product. The System Usability Scale was introduced by John Brooke in 1986 and is designed to measure a single factor of usability [24]. It can be employed to evaluate several types of testing, including information systems, Android software, websites, and more. The System Usability Scale is a reliable tool used to measure usability, comprising a questionnaire with ten items and five response options for participants. There are several benefits associated with using System Usability Scale, including its ease of administration, suitability for small sample sizes, and validity. The questionnaire items in the System Usability Scale are standard version as shown in Figure 2, however, this questionnaire is given to the users in Bahasa. The System Usability Scale employs a curved grading scale to interpret user responses and evaluate the usability of a system. This scale spans from 0 to 100, with distinct thresholds allocated to each grade as shown in Table 1.

C. RESULTS AND DISCUSSION
Research

In this stage, an interview was conducted with the Information Technology Development division, who are the developers of the Humanvue website. The purpose of the interview was to gather information about the website, including its features and functionality. The interview revealed that the user experience of the application had not been evaluated before and that there were some difficulties in finding certain features. The information gathered from the interview was used as a reference for creating tasks for usability testing in the first and second evaluation stages.

The next step after the interview with the company is to conduct the first evaluation of the Humanvue website through usability testing. The testing process will involve video recording to capture the participant's performance and feedback. The success rate of participants in completing tasks, time taken to complete tasks, and open-ended questions will be recorded. The effectiveness of the application will be measured based on the completion rate of tasks by the participants.

Table 2. Humanvue Website Effectiveness and Efficiency at First Evaluation

Task	Task Completion					Time Task				
	P1	P2	P3	P4	P5	P1	P2	P3	P4	P5
T1	1	0.5	1	0.5	1	187	266	129	164	312

T2	0.5	0.5	1	0.5	1	629	410	301	385	398
T3	0.5	0.5	0.5	1	0.5	230	225	172	459	399
T4	1	1	1	1	1	12	9	10	4	10
T5	0	0	0	1	0	33	18	102	9	19
T6	1	0.5	0.5	1	0.5	50	102	95	81	132

This passage explains the metric used to measure the effectiveness aspect of user experience, which is the completion rate. Completion rate is a simple metric that indicates the number of tasks completed by users where 1 (in green) means the task was completed, 0.5 (in orange) means the task was partially completed, and 0 (in red) means it was not. Table 2 shows the effectiveness of the Humanvue website based on the percentage of tasks completed by participants during the first usability testing. The number of participants in the usability test is 5 people since in general 5 users are sufficient for a usability test [26]. The effectiveness was calculated using the completion rate formula.

$$Completion\ Rate = \frac{Success\ Tak + 0.5 \times Partial\ Success}{Total\ Task} \times 100\%$$
$$= \frac{14 + 0.5 \times 12}{30} \times 100\% = 66\%$$

The initial evaluation of the Humanvue website application revealed an effectiveness score of 66%. However, when considering the completion rate based on the System Usability Scale Curved Grading Scale shown in Table 2, it only achieved a C grade. This result indicates that the website's performance fell below expectations because it is lower than 78%. Further improvements are needed to enhance its usability and overall quality.

After assessing the effectiveness of the Humanvue website application, the subsequent step is to evaluate its efficiency. Table 2 also presents the time taken by participants in seconds to complete assigned tasks. The overall relative efficiency, as shown below, is calculated to determine task completion times. The outcome of the efficiency evaluation in the initial assessment yielded a score of 66.80%. As this score falls within the C range according to the System Usability Scale scoring system, improvements are necessary to enhance the website's efficiency, as it currently falls short of desired levels.

$$Overall\ Relative\ Efficiency = \frac{Total\ Times\ of\ Success\ Task}{Total\ Time\ of\ All\ Tasks} \times 100\%$$
$$= \frac{3576}{5353} \times 100\% = 66.8\%$$

Furthermore, satisfaction is measured by analyzing the data collected from the System Usability Scale questionnaire. Table 3 presents the responses obtained from five participants (P1 to P5) regarding 10 System Usability Scale questionnaire questions (Q1 to Q10). Upon data processing, a usability satisfaction score of 57 was derived. Based on the usability satisfaction score interpretation, this indicates

that the website is currently categorized at a D level in terms of user satisfaction. Further improvements are required to enhance user satisfaction with the website.

Table 3. System Usability Scale Questionnaire Responses at Humanvue Website First Evaluation

Participants	Score											Satisfaction Score
	1	2	3	4	5	6	7	8	9	10	Total	
P1	4	2	4	1	4	2	4	2	4	4	29	72.5
P2	2	3	3	4	1	5	3	2	2	3	14	35
P3	4	3	4	4	3	3	4	3	4	5	21	52.5
P4	4	4	3	2	4	5	4	3	2	5	18	45
P5	1	1	5	1	4	1	5	1	2	1	32	80
Satisfaction Score Average												57

Requirement

In the scenario creation phase, requirement goals will be developed to describe the detailed objectives and improvement needs of the website according to the issues faced by the participants in the previous evaluation. The requirement goals are listed in detail in Table 4.

Table 4. Humanvue Website Requirement Goals

No.	Goals	Requirement
1	Users can complete profile data	This application feature can complete or modify user data and save it.
2	Users can apply for job vacancies	This application feature will display a list of job vacancies. Users can apply for the selected job vacancies.
3	Users can see vacancies along with the progress of vacancies that have been applied for	This application feature will display a list of job vacancies that have been applied to by the user. This list of vacancies is sorted by vacancy status. There is also an application tracking feature here to find out the stages of the user in the vacancy.
4	Users can change their account password	This application feature will display a password change form.

**Framework**

Table 5. Humanvue Website Visual Elements

No.	Visual Elements	Description
1	Navigation Bar	The Navigation Bar component is used to direct users to

		the menu on the website.
2	Button	The button component is used when we need the user to act such as Save, Edit, Upload, etc.
3	Text Field	The Text Input component is only used if we want the user to enter short text content that is no more than one line.
4	Dropdown List	The Dropdown component is used to display a list of options where the user can only select one option from the list.
5	Text Area	The Text Area component is used when we want the user to enter long text content that exceeds one line.
6	Icons	Icons are useful for identifying functions on the user interface.
7	Cards	A card is used to display valuable information concisely.

The initial stage of this framework phase is the determination of visual elements. To represent these elements, the Common Element Sets design system is employed. Common Element Sets encompasses a collection of commonly used user interface elements that appear in multiple User Interface designs [27]. These visual elements serve as a reference for the components that will be used in the creation and arrangement of wireframe design. The results of user observation and solutions to their perceived problems are one way to determine visual elements. Table 5 shows the visual elements that will be used for the wireframe later.

After determining the visual elements, the second stage in this framework phase is to create a wireframe. Figure 3 shows example recommended wireframe designs for the Humanvue website prototype. The wireframes that are created for all menus will be redesigned based on the problems experienced by the user including the My Application page. Within the "My application" page, a comprehensive history of job applications is encompassed, providing users with a detailed overview of their past interactions with various employment opportunities. This encompasses a wide range of statuses, including applied jobs, applications under review, received offers, and positions where the user was not selected. To facilitate easy navigation and information retrieval, a well-structured table is incorporated into the page's layout. This table encompasses crucial details pertaining to each job application, including the job title, company name, application date, status, and progress. The inclusion of these elements allows users to gain a quick understanding of their application history briefly. In addition to the tabulated information, the "My application" page offers convenient links to further enhance the user experience. These links enable users to access additional details about each job, such as job board information and comprehensive job descriptions. Furthermore, progress updates are readily accessible, providing users with real-time information regarding the status and progression of their applications. By providing such a comprehensive and intuitive interface, the "My application" page enhances user convenience and streamlines the job application process. Users can effortlessly review their application history, monitor the progress of their submissions, and access relevant job details, empowering them to make informed decisions and effectively manage their job search endeavors.
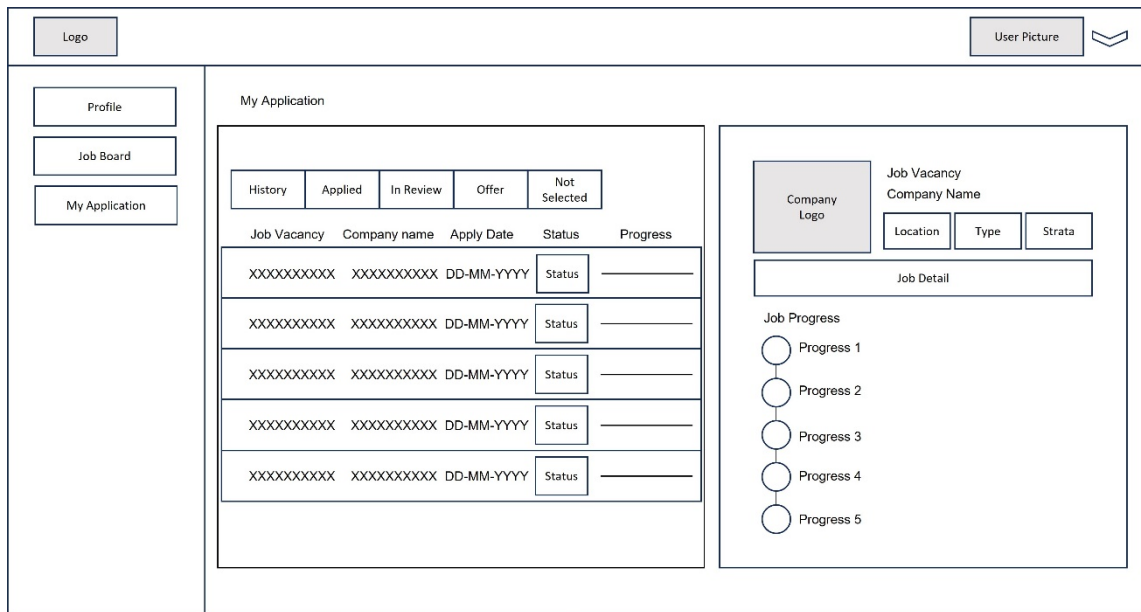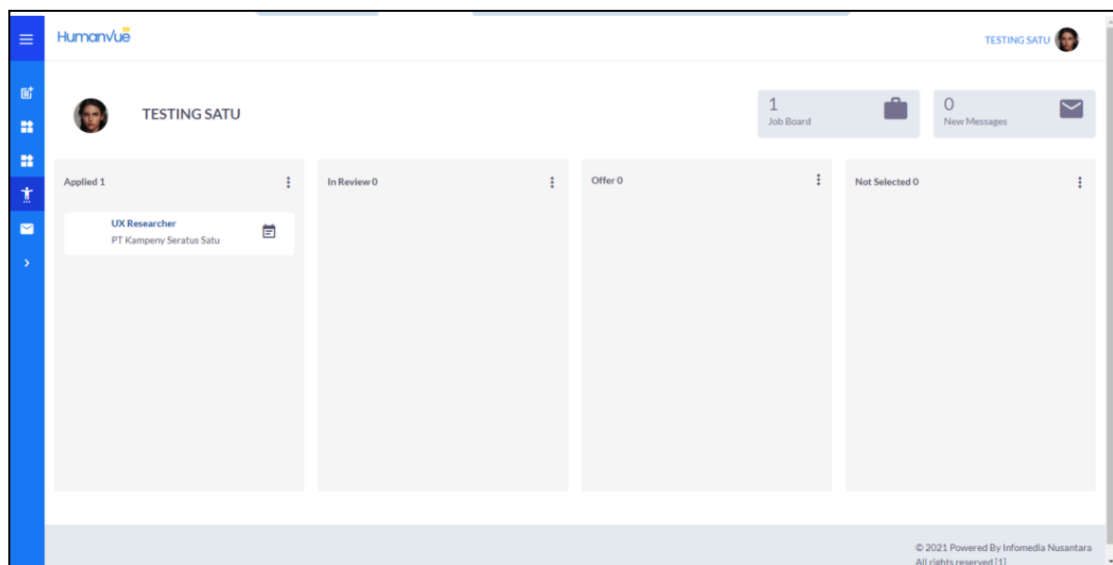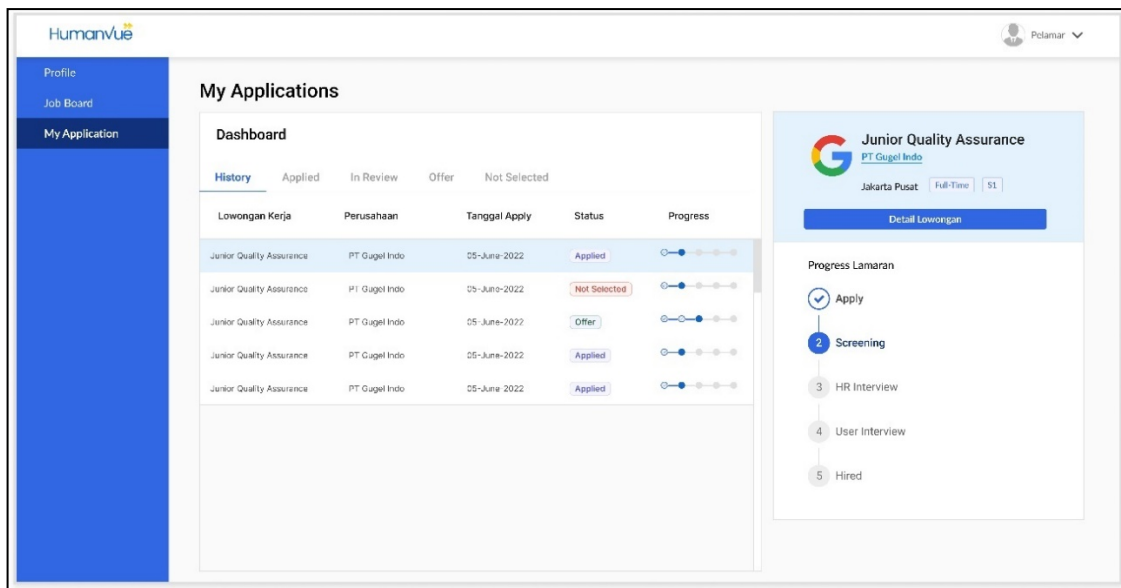
Figure 3. Humanvue My Application Wireframe

Refinement

Figure 4 displays the Humanvue User Interfaces resulting from wireframe development. For this study, the user interface design was created using the Figma tool since it is a scalable vector graphics editor with various features and plugins, making it easier to design user interfaces. Figma eliminates the need for traditional programming by providing a visual editor, reducing the reliance on developer interaction for interface design [28].


Figure 4. Humanvue My Application before Refinement

Figure 5. Humanvue My Application User Interface after Refinement

The use-case diagram for the Humanvue redesign prototype is shown in Figure 6. This use-case diagram describes how the system interacts with its environment. There are two actors in this use-case diagram: the job seeker and the admin. The job seeker can complete their profile, view, and apply for job vacancies, view their applications, and change their password. To complete their profile, the job seeker must provide their personal information and educational background. The admin, on the other hand, can manage companies, institutions, job vacancies, job seekers, and applications.
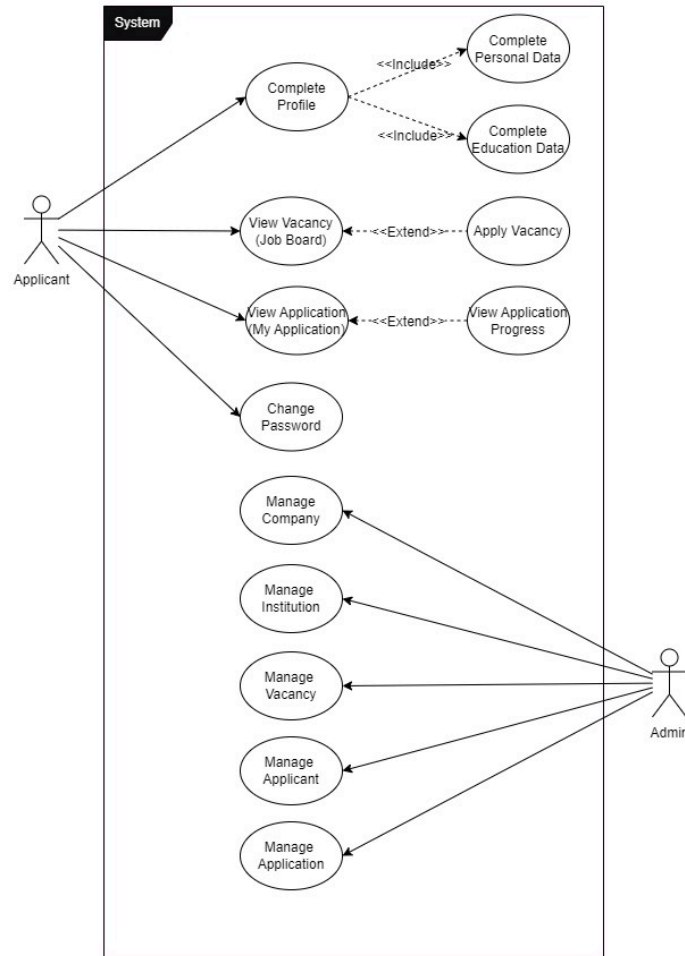
Figure 6. Humanvue Website Use Case Diagram

To perform the testing, the black box testing method was used. Table 6 shows the testing scenarios. These scenarios involve the testing of key functionalities in a web-based job search application. Users were able to successfully register an account, log in without errors, enter and save their profile and education information, search for jobs, apply for them by creating and submitting curriculum vitae, track their application progress, change their password securely, and log out from the system. The tests were conducted by three users (User1 to User3) and all scenarios passed successfully with score A+ using System Usability Scale, indicating that the application is functioning as expected. These test results affirm that the application provides a seamless user experience, enabling users to efficiently navigate through the registration, login, profile management, job search, application tracking, password maintenance, and logout processes.

Table 6. Humanvue Website System Testing Scenario

Test	Scenario	Expected Result	Score	Average Status
Register Account	Users can fill out the registration	The system Displays the registration form. The User can enter the form successfully.	90 88 87	88.33 A+

	form successfully.			
Login	User can type their username, and password, and click the login button	User entry login form without errors. If the username and password are correct, the system will show my application menu otherwise the system will show an error message.	99 86 90	91.67 A+
User Profile	Users can enter their profile and education	The system displays the user profile page, if the user enters the form completely, the system will save the data successfully and show a notification, if the data is not complete, the system will show the data that is not complete.	95 96 96	95.67 A+
Job Search	Users can find jobs and apply for the jobs	The system shows the jobs page. The system shows job details. Users can create Curriculum Vitae and send their Curriculum Vitae.	98 97 94	96,33 A+
Application Tracking	Users can track the job for which they have applied.	The system shows my application page. The system shows the application progress. Users can create a Curriculum Vitae and send their Curriculum Vitae.	100 90 100	96.66 A+
User Password Maintenance	User can change their password	The system shows the user's information page. Users can enter their old password and new password. The old password is replaced by the new password successfully.	98 93 98	96.33 A+
Logout	Users can logout from the system	Users can click the logout button on the user profile page. The system closes the user profile page. Afterward, the system shows the home page.	96 92 94	94 A+

Support

After creating the recommended Humanvue website prototype, a second evaluation will be conducted to assess the prototype. The second evaluation process is like the first one, except for the object being evaluated. The usability testing will be recorded and analyzed via video. The first measurement for the

second evaluation is to determine the application's effectiveness, which is obtained by measuring the participants' completion rate of the tasks given.

Table 7. Humanvue Website Effectiveness and Efficiency at Second Evaluation

Task	Task Completion					Time Task				
	P1	P2	P3	P4	P5	P1	P2	P3	P4	P5
Task1	0.5	1	1	1	1	75	37	47	35	41
Task2	0.5	0	1	1	0	115	64	120	105	55
Task3	1	1	1	1	1	86	93	41	30	71
Task4	1	1	1	1	1	13	9	8	18	11
Task5	1	1	1	1	1	86	16	11	11	10
Task6	1	0.5	1	1	0.5	41	45	60	23	61

Based on Table 7, the percentage of six tasks completed by the five participants (P1 to P5) was obtained. Using the following Completion Rate equation, the effectiveness results are calculated as follows:

$$Completion\ Rate = \frac{Success\ Tak + 0.5 \times Partial\ Success}{Total\ Task} \times 100\%$$
$$= \frac{23 + 0.5 \times 5}{30} \times 100\% = 85\%.$$

The second evaluation results indicate an important level of effectiveness, achieving an effectiveness rate of 85% or an A+ grade according to the System Usability Scale grading scale (Table 1). The system fulfills the required threshold of 78%. It signifies that the recommended prototype is significantly effective in achieving its intended objectives. Additionally, Table 7 also reveals that most participants were able to complete the assigned tasks, with only four tasks partially completed and two tasks not completed by all participants. This indicates a satisfactory level of task completion and overall usability of the Humanvue website. Comparing the effectiveness results between the first and second evaluations, there was a notable increase in effectiveness, from a C grade to an A+ grade, reflecting the positive impact of the implemented improvements. This increase signifies a substantial enhancement in the website's effectiveness in meeting user needs. The implications for users based on the evaluation results are quite positive. The important level of effectiveness achieved by the recommended prototype indicates that users can expect a satisfying and efficient experience when using the application. With an effectiveness rate of 85% or an A+ grade, users can have confidence in the application's ability to meet their needs and help them accomplish their objectives effectively. The fact that most participants were able to complete their tasks successfully further reinforces the user-friendly nature of the application. The improvements implemented based on user feedback have resulted in a substantial enhancement in meeting user needs, ensuring that users can navigate the website seamlessly and achieve their goals. Overall, the evaluation results indicate that users can expect a highly effective and user-centric experience when using the application.

After measuring the effectiveness, the next step is to measure the efficiency. Like the first evaluation, the efficiency of the time taken by participants to complete tasks will be calculated using the following overall relative efficiency formula. The calculation conducted for the second evaluation of the Humanvue website yielded an efficiency score of 81.43%, which corresponds to an A grade according to the System Usability Scale grading scale. This indicates a significant improvement in the website's efficiency compared to the initial evaluation, which showed a disappointing C-level efficiency. The efficiency measurement in the second evaluation has positive implications for users. With an efficiency score of 81.43% and an A grade on the System Usability Scale grading scale, the Humanvue website has shown significant improvement in efficiency compared to the initial evaluation. This translates to faster and more streamlined task completion for users. The optimized design and reduced complexities allow users to navigate the website more efficiently, saving time and effort. Users can now expect a smoother and more time-effective experience, enhancing their overall satisfaction. The improved efficiency of the Humanvue website ensures a user-friendly interface that enables users to accomplish their tasks more quickly and effectively.

$$Overall\ Relative\ Efficiency = \frac{Total\ Times\ of\ Success\ Task}{Total\ Time\ of\ All\ Tasks} \times 100\% = \frac{1171}{1438} \times 100\% = 81.43\%$$

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After measuring effectiveness and efficiency, the next step involves assessing user satisfaction by analyzing data obtained from the System Usability Scale questionnaire. Table 8 presents the values derived from five participants' responses (P1 to P5) to the System Usability Scale questionnaire questions (Q1 to Q10) in the second evaluation. Data processing revealed a user satisfaction score of 85.5, indicating that the website achieved an A+ level of user satisfaction. This exceptionally high score signifies that users are highly satisfied with the modified website's usability and overall user experience. The positive evaluation of user satisfaction reflects the effectiveness of the implemented improvements and ensures that the website successfully meets and even exceeds user expectations. The higher user satisfaction score in the second evaluation indicates the success of the improvement efforts on the Humanvue website, resulting in a significantly improved user experience. The significant increase in user satisfaction reflects the fact that the new website has successfully met and exceeded user expectations. The implication for users is with a user satisfaction score of 85.5, corresponding to an A+ level, it indicates that users are extremely satisfied with the usability and overall user experience of the modified website. This exceptionally high score signifies that users find the website easy to navigate, intuitive, and enjoyable to use. The positive evaluation of user satisfaction demonstrates the effectiveness of the implemented improvements, ensuring that the website meets and surpasses user expectations. Users can have confidence in the website's ability to deliver a gratifying and fulfilling experience, fostering trust and loyalty. The substantial increase in user satisfaction from the first to the second evaluation highlights the success of the improvement efforts, signifying that the new website not only meets but exceeds user expectations. Overall, users can anticipate a highly satisfactory and pleasurable experience when interacting with the Humanvue website.

Table 8. System Usability Scale Questionnaire Responses at Humanvue Website Second Evaluation

Participants	Score											Satisfaction Score
	1	2	3	4	5	6	7	8	9	10	Total	
P1	4	1	5	1	5	2	4	2	5	2	35	87.5
P2	5	1	4	2	5	1	5	1	5	1	38	95
P3	5	1	5	1	5	1	5	1	5	1	40	100
P4	4	2	4	2	5	1	4	4	4	4	28	70
P5	5	2	4	3	4	2	5	2	5	4	30	75
Satisfaction Score Average												85.5

D. CONCLUSION

It can be concluded that the website modifications have positively impacted the effectiveness, efficiency, and user satisfaction of the Humanvue website. The website passed all test scenarios with an A+ grade. The second evaluation of the Humanvue website demonstrated an important level of effectiveness, achieving an A+ grade with an effectiveness rate of 85% according to the System Usability Scale grading scale. The results indicate that the implemented improvements significantly enhanced the website's effectiveness in achieving its intended objectives. Most participants were able to complete the assigned tasks, reflecting a satisfactory level of usability. The notable increase in effectiveness from the first to the second evaluation highlights the positive impact of the improvements and signifies a substantial enhancement in meeting user needs. In addition, the second evaluation of the Humanvue website demonstrated a significant improvement in efficiency, with an A grade (81.43%) according to the System Usability Scale grading scale. The findings suggest that the website's efficiency has been successfully enhanced. Finally, the second evaluation of the Humanvue website yielded a remarkable outcome with an important level of user satisfaction. The website received an exceptional A+ rating, scoring 85.5 in usability satisfaction. This positive evaluation is a testament to the effectiveness of the implemented improvements, surpassing user expectations.

For future research, it is suggested to explore user experience measurement methods for attributes beyond usability. This could involve utilizing other usability attribute calculations identified by researchers, such as learnability, error rates, and memorability. Additionally, it would be valuable to develop prototype recommendations from the perspective of website administrators. These recommendations could encompass aspects related to website management and administration, further enhancing the overall user experience.

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