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#### Design of A Website-Based Internship Information System (Case Study of Industrial Engineering UPN "Veteran" East Java)

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Article Information	Abstract					
Submitted : 7 Dec 2024 Reviewed: 12 Dec 2024 Accepted : 30 Dec 2024	The Industrial Engineering Study Program is one of the study programs at the Faculty of Engineering, UPN "Veteran" East Java. In the teaching and learning process, students are required to undertake an internship as a graduation requirement. Currently, the training administration still relies on					
Keywords	manual processes, which results in the administration process needing to be more effective and efficient. Given these problems, an internship information					
Information System, Website, Internship	system will be produced. This website-based internship information system is implemented so that anyone can access the website anytime and anywhere. Therefore, the relevant parties can access this internship information system more efficiently. The research method for collecting the required data is observation and interviews. This information system uses PHP programming language and MySQL as the database. Based on the results of the tests that have been carried out, this website-based internship information system makes it easier for related parties to administer internship activities. Students can apply for supervisors' internship seminars and upload internship grades, and admins can plot supervisors, provide assignment letters for supervisors, and plot examiners online and systematically.					

#### A. Introduction

Industrial Revolution 4.0 is a revolution where this system focuses on collaboration between information and communication technology in the industrial sector. Industrial Revolution 4.0 is also often referred to as a cyber-physical system. The presence of the Industrial Revolution 4.0 can be seen in various fundamental changes. The changes in question include basic technology, social, macroeconomic, etc [1]. With the Industrial Revolution 4.0, the work environment will be more effective and efficient in its implementation. Developments in education indeed cannot be separated from the story of the Industrial Revolution that is currently occurring in the world because changes in the economic order also indirectly change the educational mandate of a country, one of which is in the field of education. In the era of Industrial Revolution 4.0, computer technology and unlimited data make several things endless. Of course, this happens due to the massive influence of the development of the internet and digital technology, which is helpful as the backbone of human and machine movement and connectivity [2].

The Industrial Engineering Study Program is one of the study programs at the Faculty of Engineering, UPN "Veteran" East Java. Students must carry out internships as a graduation requirement in the teaching and learning process. Internship is an activity where students will be placed in a company or agency to provide direct work experience to students. Internships aim to enable students to apply the knowledge they gain in college and further develop their abilities to solve problems that exist in the real world of work [3]. However, the administrative implementation of internships, such as submitting internship applications, submitting applications for supervisors, submitting seminars, and collecting data on student grades, still relies on manual processes, which results in the administrative process needing to be more effective and efficient. Given these problems, an information system for an internship will be required.

An information system is an interrelated part where the systems will work together to collect information, store information, manage data, and display information, which will help make a decision and a picture of what an organization will do [4]. Through information systems, the accuracy and speed of data acquisition can be done quickly [5]. The internship information system simplifies administrative processes for students implementing internships. Using a website, all information and news can be accessed anywhere and at any time; the website is also an alternative for the internship administration process, meaning related parties need a website to assist in the internship administration process [6]. Therefore, the relevant parties can access this internship information system more efficiently. A website is a collection of web pages displaying various information types. Website information can be static or dynamic, and this website provides information for computer users connected to the internet, ranging from utterly useless information to serious details, ranging from accessible communications to commercial information [7][8]. This internship information system includes a dynamic website because its contents can be updated regularly [9]. The internship information system was built with the PHP programming language using the CodeIgniter framework and supported by MySQL as a database. In dynamic website programming using the PHP programming language and MySQL database, PHP is a language integrated with HyperText Markup Language (HTML) [10]. This combination of PHP and MySQL can provide the speed of access, scalability, and security needed to develop this internship information system [11]. Meanwhile, CodeIgniter provides libraries and helpers to make it easier and faster to standardize the development of websites and web-based applications [12].

Based on the description above, it is necessary to create an information system for internships that students, lecturers, and coordinators can access. The aim of creating an internship information system is to make the administrative process of this internship activity more effective and efficient.

#### B. Research Method

#### Place and Time of Research

The research was conducted at the Industrial Engineering Study Program, Faculty of Engineering, Universitas Pembangunan Nasional "Veteran" East Java. The university is at Rungkut Madya Street No.1, Gunung Anyar, Surabaya City, East Java. The analysis was carried out from November 2023 until sufficient data was obtained.

#### Identification and Operational Definition of Variables

In conducting a study, it is necessary to identify its variables. The related variables for the study are listed below about the study's title.

1. Dependent Variable

A dependent variable is a variable that is affected by changes in other variables. It is not an independent variable, and its value depends on the importance of other variables. The dependent variable in this study is the information system of Field Work Practices in the Industrial Engineering Study Program of the University of National Development "Veteran" East Java.

2. Independent Variable

An independent variable is a variable that affects the dependent variable. The independent variables in this study were:

a) Lecturer Data

The lecturer data includes NIP, name, email, photo, and password.

- b) Student Data The student data includes NPM, name, email, photo, and password.
- c) Supervisor Submission Data The supervisor submission data includes internship companies, internship implementation periods, internship requirements files, supervisors, and supervisor assignment letters.
- d) Internship Seminar Data The data used for the internship seminar includes the title of the internship report, report file, logbook, examiner lecturer, seminar date, seminar room, and seminar file.
- e) Internship Value Data The internship value data includes minutes, lecturer grades, and company value files.

#### Data Collection Methods

In conducting research, of course, data collection is needed where the data collection methods used are as follows:

a) Interview

Collecting data with interviews is done by interviewing sources directly so that the information obtained is more valid.

b) Observation

Collecting data by observation is by directly observing the object being studied so that you can be more straightforward about the process.

#### C. Result and Discussion

#### Data Collection

1. Lecture Data

Data on internship lecturers for the Industrial Engineering Study Program at the UPN "Veteran" East Java is available in the table below.

	Tuble II lecture Du	
No	Name	NIP
1	Dr. Farida Pulansari, ST., MT., CSCM., IPM.	197902032021212007
2	Dr. Ir. Minto Waluyo, MM	196111301990031001
3	Dr. Dira Ernawati, ST., MT.	197806022021212003
4	Ir. Moch.Tutuk Safirin, MT.	196304061989031001
5	Ir. Rr. Rochmoeljati, MMT.	196110291991032001
6	Ir. Sumiati. MT.	196012131991032001
7	Ir. Endang Pudji W., MMT.	195912281988032001
8	Ir. Rusindiyanto, MT.	196502251992031001
9	Ir. Joumil Aidil SZS., MT.	196203181993031001
10	Ir. Iriani, MMT.	196211261988032001
11	Ir. Akmal Suryadi, MT.	196501121990031001
12	Dwi Sukma Donoriyanto, ST., MT.	198107262005011002
13	Enny Ariyani, ST., MT.	197009282021212002
14	Tranggono, ST., MT.	17119861222053
15	Nur Rahmawati, ST., MT.	198708012019032012
16	Sinta Dewi, ST., MT.	21219880830285
17	Mega Cattleya Prameswari A. I., S.ST., MT.	21219921112290
18	Rizqi Novita Sari, S.ST., MT.	21219921121289
19	Yekti Condro Winursito, ST., M.Sc.	21119920813288
20	Isna Nugraha, ST., M.T.	21219950301286
21	Hafid Syaifullah, S.ST., MT.	198910172022031003

Table	1.	Lecture	Data
IUDIC		Lecture	Dutu

#### Database Design

1. System Flowchart



Figure 2. System Flowchart

2. Entity Relationship Diagram

An Entity Relationship Diagram (ERD) is a model that represents the relationship between different activities in a process. It is based on real-world impressions where objects are related to each other. In this model, objects are referred to as entities, and their relationships are called relationships. Each entity has its attributes, and things also have unique properties [13].

Figure 3. Entity Relationship Diagram



#### 3. Context Diagram

Context diagrams are a valuable tool for creating a data model. In a context diagram, a system is depicted as a network of interconnected processes, with data flows shown as arrows. This diagram is the highest level of a Data Flow Diagram (DFD), and it visualizes all inputs leading to the system's output [14], [15].



#### Figure 4. Context Diagram

4. Data Flow Diagram

System data flow diagrams, also known as data flow diagrams, are used to visualize the logical development of an existing or new system. These diagrams are created without other considerations and show how the system produces and stores data [13].



#### Figure 5. Data Flow Diagram

#### 5. Implementation

The website interface in this internship information system is used by users, with three users: admin, lecturers, and students.

1) Index Interface

This page has a login button for all users and a register button for students. The following is a display of the internship information system index interface.

Figure 6. Index Interface



2) Register Interface (Student)

To register, students must enter a username as NPM, full name, email, password, and password confirmation. The following is a display of the student register interface of the internship information system.

	rigule /. Re	gister interface (stud	encj
0			Masuk Daftar
		Pust skup anda	
	Licername (NPM)	Masukkan data anda untuk buat akun	
	Email	indina cengkap	
	Parsword	Konfirmari Barruard	
	Fassword	KUTITTIASI PASSWUTU	
	Sudah punya akun? Masuk	Register	

3) Login Interface

To be able to log in, the user must enter the username and password that have been stored in the database. The following is a display of the login interface of the internship information system.

<b>9</b>		Masuk Daftar
	Masuk ke akun anda Masukkan username & password untuk login Username/NIP/NPM	
	Password	
	Login Belum punya akun? Buat akun	

4) Dashboard Interface (Admin)

On this page, two menus are left, namely the internship menu and lecturer management. The following is a display of the admin dashboard interface of the internship information system.

◎ ≡	- gui e zi zaolizo	Hafid Syaifullah, S.ST.,MT
Image: Second	Hafid Syaifullah, S.ST.,MT. Admin	Detail     Edit Profil     Ubah Password       Detail Profil     Full Name     Hafid Syaifullah, S.ST., MT.       Username     admin1
		Teknik Industri UPN   All Right Reserved

Figure 9. Dashboard Interface (Admin)

5) Internship Data Interface (Admin)

On this page, the admin can only manage supervisory lecturer data and supervisory lecturer assignment letters and examine lecturers by adding and editing data. Admin can also download files that students have uploaded. The following displays the internship admin interface of the internship information system.

Dashboard	PKL						
PKL	Sea	rch					
Kelola Dosen	NO	Status 🗍	Nama Mahasiswa	NPM Mahasiswa	Perusahaan	Periode Mulai	Periode
	1	DIAJUKAN	Bintang Andita Kartikasari	19032010123	PT Ajinomoto Indonesia	2023-12-01	2023-12-
	3	DILAPORKAN	Annisa Rahmi Azizy	19032010147	PT. Petrokimia Gresik	2023-12-01	2023-12-
	4	DIUJI	Dave Dee Susilo	19032010115	PT PAL Indonesia	2023-12-01	2023-12-
	2	DIVERIFIKASI	Nuarita Tri Kartika	19032010146	PT Asahimas Flat Glass	2023-12-01	2023-12-
	5	SELESAI	Vincentius Atuna	19032010136	PT Campina Ice Cream Industry	2023-12-01	2023-12-
	Show	ing 1 to 5 of 5 ent	ries				

Figure 10. Internship Data Interface (Admin)

6) Manage Lecturer Interface (Admin)

On this page, the admin can manage lecturer data, such as adding, editing, and deleting data. The following displays the internship information system admin lecturer management page.

ГТ — —	gule 11.	Mallage		ace(Aum	
9 =					Hand Syanulian, S.ST.,
88 Dashboard	Dosen				Tambah Dat
88 PKL	Se	arch			
88 Kelola Dosen	NO	NIP	Nama Dosen 🌐	Total Bimbingan	Aksi
	1	198910172022031003	Hafid Syaifullah, S.ST., MT.	0	<b>1</b>
	2	21219950301286	Isna Nugraha, ST., M.T.	0	o 🛛 🗊
	3	21119920813288	Yekti Condro Winursito, ST., M.Sc.	0	<b>1</b>
	4	21219921121289	Rizqi Novita Sari, S.ST., MT.	0	o 🛛 🗊
	5	21219921112290	Mega Cattleya Prameswari A. I., S.ST., MT.	0	<b>1</b>
	6	21219880830285	Sinta Dewi ST MT	0	

7) Logout (Admin)

To log out, the admin can click on the profile in the top right corner, where there is a dropdown and a sign-out option. If you click sign out, it will return to the index interface.

8) Dashboard Interface (Lecture) On this page, there is one menu on the left: the internship menu. The following is a display of the lecture dashboard interface of the internship information system.

. ● ●	0	Dwi Sukma Donoriyanto, ST., MT
8 Dashboard 8 PKL	Dwi Sukma Donoriyanto, ST., MT. Dosen	Detail     Edit Profil     Ubah Password       Detail Profil     Edit Name     Dwi Sukma Donoriyanto, ST., MT.       Username     198107262005011002
		Teknik Industri UPN   All Right Reserved

Figure 12. Dashboard Interface (Lecture)

9) Internship Data Interface (Lecture)

On this page, lecturers can see data on students who are or have done internships under their guidance and can download files that students have uploaded. The following is a display of the information systems lecturer internship interface.

Figure 13. Internship Data Interface (Lecture)

:	Dwi Sukma Donoriyanto, ST., MT
88 Dashboard	PKL
88 PKL	Search
	NO Status Nama Mahasiswa NPM Mahasiswa Perusahaan Periode Mulaj Periode
	1 <b>DILAPORKAN</b> Annisa Rahmi Azizy 19032010147 PT. 2023-12-01 2023-12-: Petrokimia Gresik
	Showing 1 to 1 of 1 entries
	Teknik Industri UPN   All Right Reserved

10) Logout (Lecture)

To log out, the lecturer can click on the profile in the top right corner, with a dropdown and a sign-out option. If you click sign out, it will return to the index interface.

11) Dashboard Interface (Student)

On this page, there is one menu on the left: the internship menu. The following is a display of the student dashboard interface of the internship information system.

Dashboard		Detail Edit Profil Ubah Password
PKL	Bintang Andita Kartikasari Mahasiswa	Detail Profil       Full Name     Bintang Andita Kartikasari       Username     19032010123       Email     bintangandita15@gmail.com
		Teknik Industri UPN   All Right Reserved

Figure 14. Dashboard Interface (Student)

12) Internship Data Interface (Student)

Students can manage company data, start period, end period, requirements files, seminar data, and internship value data by adding, editing, and deleting on this page. Students have the option to download any uploaded files. This demonstrates the interface for the student internship program in information systems.

Figure 15. Internship Data Interface (Student)

0	≡								Bintang Andita Kartikasari 🕶
88	Dashboard	PKL							Tambah Data
88	PKL		Coor	a ha					
			NO	Status Ĵ	Perusahaan	Periode Mulai	Periode Akhir	Berkas Syarat	Dosen Pembimbing
			1	DIAJUKAN	PT Ajinomoto Indonesia	2023-12-01	2023-12-31	Lihat File	(Belum ada)
			Showir	ng 1 to 1 of 1	entries				
		۲.	-	_	_		-		,
						Teknik Industri UPN	All Right Reserved		

13) Logout (Student)

To log out, the student can click on the profile in the top right corner, with a dropdown and sign-out option. If you click sign out, it will return to the index interface.

# *System Testing* 1. Verification Test

No	Process	Figure	Keterangan
1	Register	115410	The internship
1.	System		information
	System		system provides
		Buat akun anda	a registration
		Masukkan data anda untuk buat akun	form for
		Username (NPM) Nama Lengkap	students To
			register an
		Email	account
			students must
		Password Konfirmasi Password	fill in the
			required data If
		Register	the registration
		Sudah nunya akun? Masuk	is successful
		Juuan punya akun: masuk	they will go to
			the login page
			If the student
			successfully
		Akup berbasil dibuat	registers on
			alert will appear
			act will appear
			If a student
			registers but the
			student account
		l Isername sudah terdaftar 🛛 🗙	already exists in
		Osername sudan teruartar A	the database an
			alert will appear
			as follows
2	Login		The internship
2.	System		information
	System		system provides
			a login form
		Masuk ke akun anda	when the user
		Masukkan username & password untuk login	wants to access
			the dashboard.
		Username/NIP/NPM	Users can log in
			by entering the
			registered
		Password	username and
			password. If
			you log in
		Login	successfully.
		Relum pupus akun? Ruat akun	you will go to
		belum punya akun: buat akun	the dashboard
			page according
			to your role.
			An alert will
			appear if the
		Password Salah X	user logs in
			with the wrong
			password.
			r

## Table 2. Verification Test

		Anda tidak terdaftar 🛛 🗙	An alert will appear if the user logs in but the account is not registered.
		If the user successfully logs in, the following alert will appear.	
3.	Edit Profile	Detail       Edit Profil       Ubah Password         Foto Profil       Image: Choose File       No file chosen         Upload       Choose File       No file chosen         Gambar       Bintang Andita Kartikasari         Lengkap       Bintang andita 15@gmail.com         Email       bintangandita 15@gmail.com	The internship information system has a profile edit page that aims to change the user's profile photo, full name, and email.
4.	Change password	Detail       Edit Profil       Ubah Password         Password saat	The internship information system has a change password page that aims to change the old password to a new one.
		Password berhasil diubah	After changing the password successfully, the following alert will appear.
5.	Add, Edit, and Delete Data	Tambah data berhasil	The internship information system provides a form to add data, and when the data is successfully added, the
			following alert will appear.
		Edit data berhasil	information system provides a form for editing data, and when the
1			data is



8.	Internship	: ◎	Hafid Syathulah, 5.57, MT.+	aifullah, S.ST., MT. =
	Status	88 Dashboard	PKL	There are f
		88 Kelola Dosen	Search NO Status Nama Mahasiswa NPM Mahasiswa Perusahaan Periode Mulai Periode	statuses fo
			1 DIAJUKAN Bintang Andita 19032010123 PT Bakti Abadi 2023-12-01 2023-12-: Kartikasari Bersama	students
			2 DIVERIFIKASI Nuarita Tri Kartika 19032010146 PT Artha 2023-12-01 2023-12-1 Sejihtera Mandri	carrying o
			3 DILAPORKAN Dave Dee Susilo 19032010115 PT Berkah 2024-01-01 2024-02-: Mandiri Jaya	internship
			4 DIUJI Vincentius Atuna 19032010136 PT Bina 2023-12-01 2023-12- Sejuhtera Abadi	Submitted, Verified.
		5	5 SELESAI Annisa Rahmi Azizy 19032010147 PT Damai 2023-11-01 2023-11-1 Sejaherra Mandiri	Reported
			Showing 1 to 5 of 5 entries	Tested, an
				Complete
			Televik Industri UPN   All Right Reserved	

After going through several testing stages, the Internship Information System program was found to consist of 8 processes, which include the Register System, Login System, Edit Profile, Change Password, Add, Delete and Edit Data, Display Managed Data, Upload Internship Value Data, and Internship Status. A verification test was carried out on the program, and based on the results of the tests, it was concluded that the website-based Internship Information System had been completed according to the previously established design.

2. Validation Test

 Table 3. Validation Test

User Expectations	User Status
Data Input Process	The internship information system has provided a form for
	managing data, which consists of adding, editing, and deleting data.
	Users can also upload profile pictures and change profiles.
Data Output Process	The internship information system is successful in displaying data
	that has been input by the user, consisting of company, starting
	period, ending period, requirements files, supervisor lecturer,
	supervisor assignment letter, seminar data, and examining lecturer
	and internship grade data. This information system also succeeds in
	displaying the profile of the user according to the login.
System Process	The internship information system successfully carried out add,
	edit, and delete functions where these functions were for processing
	data. This information system also succeeded in the login function
	and changing the user's profile picture, full name, and password.
	The system also successfully performed the file download function.
Administration Process for	The internship information system successfully carries out the
Internship Activities	administration process for internship activities; students can upload
	all information and files regarding the internship they are currently
	undertaking, and the admin can plot lecturers and upload specific
	files; this system also succeeds in carrying out the interaction
	process between admin and students through the plotting process
	for supervisors and examining lecturers.
Performance	The internship information system has succeeded in documenting
	all data managed by users automatically into a database.
System Security	The internship information system provided security by validating
	usernames and passwords, which only one user accessed according
	to each user's rights. This website also cannot be accessed if you are
	not logged in.

Based on the validation test results above, there are several points of user expectations for this Internship information system website, starting from the Data Input Process, Data Output Process, System Process, Internship Administration Process, System Performance, and Security. From these expectations, the system has successfully implemented the users' expectations. In its implementation, the website-based internship information system functions to simplify the administrative activities of internships for admins, lecturers, and students.

#### D. Conclusion

After analyzing and discussing the matter, the website-based internship information system has made internship administrative activities more convenient for students and other parties involved. When students apply to a supervisor, the admin will provide the supervisor with a letter of assignment. Then, students can apply for an internship seminar, where the admin will also offer an examining lecturer. Then, after that, students can upload the internship score data obtained online and systematically. The system efficiently manages administrative processes for internships.

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