

Application Smart Internship System Unika Soegijapranata (SISTA) berbasis Web (Progressive Web Apps)

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Abstract— Apprenticeship is a student activity carried out on the basis of cooperation between the University and the institution where the work apprenticeship program is implemented which aims to be a place of learning as well as training for students to assess students' knowledge and understanding of the learning that has been given on campus and applied directly to the world of work at once Where there are difficulties in getting information on job apprenticeship vacancies, students usually search by contacting related agencies or seeing job internship vacancies on the online platform of each agency, which if accommodated will be very time consuming.

Therefore a media is needed to accommodate information on vacancies as well as a place to register for an internship program that is easy, fast and easy to use by students and companies to create job apprenticeship vacancies.

Purpose of this research is to make an application that can accommodate all of these activities from opening and looking for job apprenticeship program vacancies, approving and collaborating on apprenticeship programs as well as providing value or results of an integrated internship program with transcript information and Certificate of Companion Diploma (SKPI) Students. This media will be designed using a web application as well as the use of a progressive web app to be used on all types of platforms.

Keywords— Internship, Job internship, Online application, Progressive web app, PWA, Magang kerja.

I. INTRODUCTION

Latar Belakang

According to Tejoyuwono (2006), an information system is an activity of collecting information and data that is integrated and organized as well as implementation which includes more than just presenting. [1] This statement shows that the information system is needed to organize, process and compile the information necessary for a goal to be achieved. The success of an information system that is measured based on its objectives depends on three main factors, namely the harmony and quality of data, data management, and how to use the data.

Management information systems according to Rob and Etnyre (2015) provide an overview of hardware and software as well as important concepts and issues related to the development and management of information systems. [2] Decision making and problem solving in organizations aimed at managing data in providing effective and efficient information (Hidajat, 2013; Januarita & Dirgahayu, 2015).[3] Effective means that information can be quickly received and easily understood by users, while efficient means that information storage and management can run well.

According to Mien A. Rifai (1995), journals are periodicals, these periodicals contain specific scientific studies and in certain fields. [4]

Research Objectives

The purpose of this research is to produce an information system application that is developed to accommodate the activities of an apprenticeship program from opening and

looking for job internship program vacancies, approving and collaborating with work apprenticeship programs and providing values or results of apprenticeship programs integrated with transcript information and *Surat Keterangan Pendamping Ijazah (SKPI)* for Students of Soegijapranata Catholic University.

II. LITERATURE REVIEW

System

System is a collection of elements or components which is a broadly accepted definition, where these components cannot stand alone, all interact and are connected to form one unit so that the system can be achieved. Systems theory includes the definition of systems, system environment and system components. In the book of Decision Support and Expert System, Turban (1995) declare "a system is a collection of object such as people resources, concept and procedures intended to perform an identifiable function or to sere goal." [5] Or a system is a collection of objects such as human resources, concepts and procedures which are intended to perform identifiable functions or to achieve objectives.

Meanwhile, according to Jogiyanto (1990), the system is generally divided into two, namely:

- a. Procedural Approach: Network and interconnected procedures come together to carry out an activity to achieve certain goals.
- b. Elemental or component approach: A collection of many elements that interact to achieve a specific goal. [6]

Thus the system can be concluded is a collection of elements in the form of human resources, concepts and procedures that interact and relate to each other so that they can carry out activities to achieve goals.

Web Based Application

A web-based application is an application that can be accessed via a web browser when connected to an internet network. This application is also software or software that uses programming languages such as html, javascript, php, css and other programming languages. As hypertext documents, documents on the web can have a link (url) with other documents, either stored on the same web server or on other web servers. Links make it easy for web users to move from one page to another and "surfing" from one server to another. [7]

Progressive Web App

Progressive web apps or often called PWAs are software applications that are delivered via the web, built using common web technologies including HTML, CSS and JavaScript, aiming to make the web work on any platform that uses a standard-compliant browser. The result is a mobile application that has features like the one on the original web with optimization for the mobile experience and the website will be accessed quickly on the mobile display. According to Andreas Biørn-Hansen (2017) application progressive web app dapat make it easier for end users or often called end-users, operate the application without having to open an application market such as Google Playstore and install the application, users only need to press the "add to main screen" button to install application on the user's device. [8]

III. METHOD

In designing this system the authors use the System Development Life Cycle (SDLC) method or the system development life cycle is the entire process in developing an information system through several steps, Nur Zeina Maya Sari (2018) SDLC is a method used to develop a system.[9] There are several SDLC models, in this thesis the author uses SDLC Waterfall model which is quite famous and widely used.

SDLC is divided into 7 main steps, namely:

1. Planning
Namely making plans related to the project.
2. Design
At this stage, a workflow management plan is carried out and the program design will be developed.
3. Analysis
At this stage, an analysis of the ongoing workflow management is carried out.
4. Development
That is the process of creating a pre-designed project and transferring it into a programming language coding.
5. Testing
Namely testing the information system that has been created.
6. Implementation
Application of information systems that have been made for use by all users.
7. Operation and maintenance
Activities carried out after the development period to support the operation of the system over a long period of time.

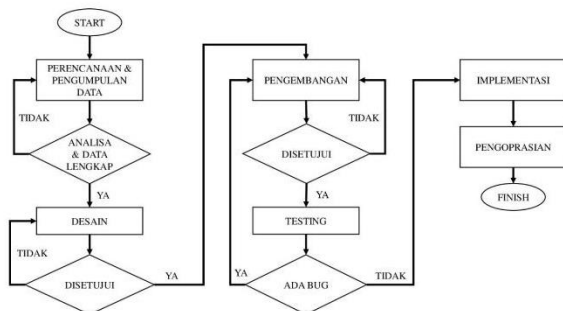


Figure.1. Application development framework

Application

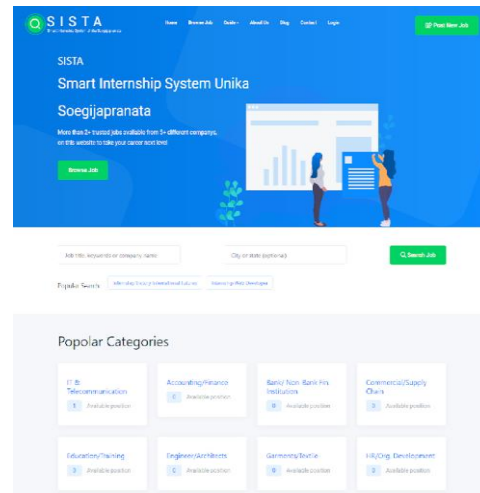


Figure.2. Main Page

The main page displays the company and available internship vacancies.

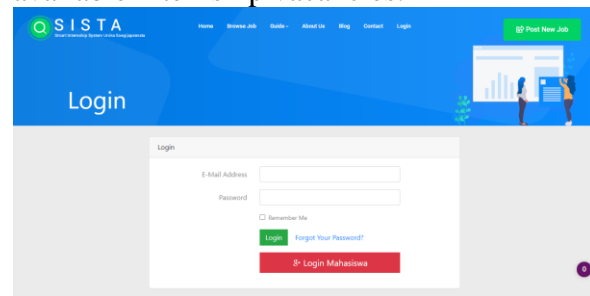


Figure.3. Login Page

The login page is used to apply for apprenticeship programs for students, and create job internship vacancies and details of internship vacancies for companies.

```

Mulai
Tampilkan halaman login
IF (Login Mahasiswa = True) THEN
    Masuk halaman login akun gmail
    IF (Berhasil = True) THEN
        Masuk halaman dashboard
Mahasiswa
    ELSE
        Tampilkan pesan gagal
login
    ENDIF
ELSE
    Input username dan password
    IF (akun = 'admin') THEN
        Masuk halaman dashboard
        sebagai admin
    ELSEIF (akun = 'perusahaan')
    THEN
        Masuk halaman dashboard
        sebagai perusahaan
    ELSEIF (akun = 'fakultas') THEN
        Masuk halaman dashboard
        sebagai fakultas
    ELSE
        Tampilkan pesan username
        atau password salah
        Kembali ke halaman login
    ENDIF
ENDIF
Selesai
    
```

Figure.4. Pseudocode login page

Figure 4 is a pseudocode which aims to explain the system workflow when the user enters the dashboard.

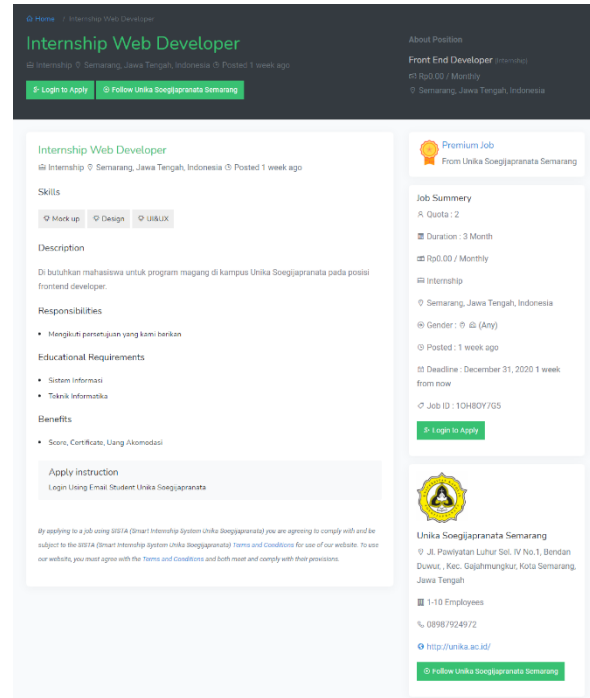


Figure. 5. Job detail page

The job internship details page contains company details and internship vacancies as well as a button to apply for internship vacancies for students.

```

Mulai
Tampilkan detail lowongan
IF (Login = True) THEN
    IF (Melamar = True) THEN
        Tampilkan pesan maaf
        anda sudah melamar di lowongan magang
        ini
    ELSE
        Bisa melamar
    ENDIF
ELSE
    Tampilkan pesan silahkan login
    dengan menggunakan akun Mahasiswa
    Tampilkan halaman login
ENDIF
Selesai
    
```

Figure.6. Pseudocode job detail page

Figure 6 is a pseudocode that aims to explain the workflow of the system when students apply for an internship program.

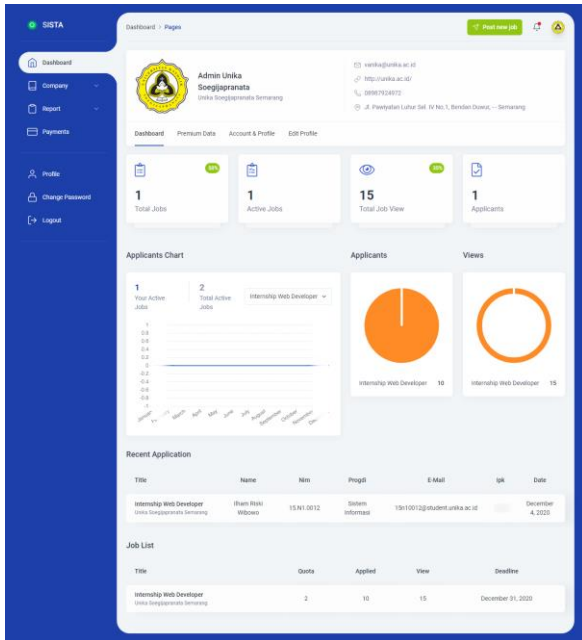


Figure.7. Dashboard

The dashboard page contains the necessary data information for companies such as a list of students applying for related job internships.

```

Mulai
IF (Login = True) THEN
    IF (akun = 'mahasiswa') THEN
        Tampilkan data mahasiswa
    ELSEIF (akun = 'perusahaan')
    THEN
        Tampilkan data perusahaan
    ELSEIF (akun = 'admin') THEN
        Tampilkan data admin
    ELSEIF (akun = 'fakultas') THEN
        Tampilkan data fakultas
    ENDIF
ELSE
    Tampilkan pesan silahkan login
    Tampilkan halaman login
ENDIF
Selesai
    
```

Gambar.8. Pseudocode dashboard

Figure 8 is a pseudocode which aims to explain the system workflow when the user successfully logs into the dashboard.

IV. RESULTS AND DISCUSSION Respondent Profile

After testing the smart internship system application Unika Soegijapranata (sista) web-based (progressive web apps) and collecting data in the form of a questionnaire from 37 people aged 18-24 years, the following results were obtained for age, gender and experience:

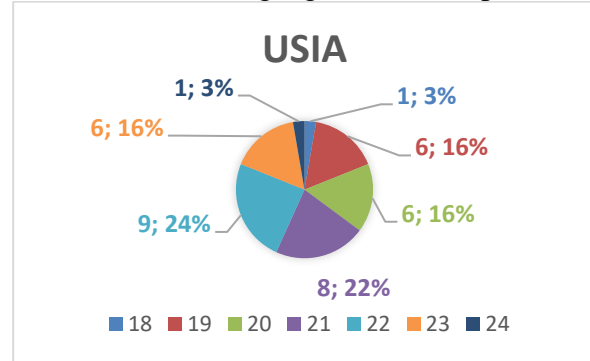


Figure.9. Respondent age diagram

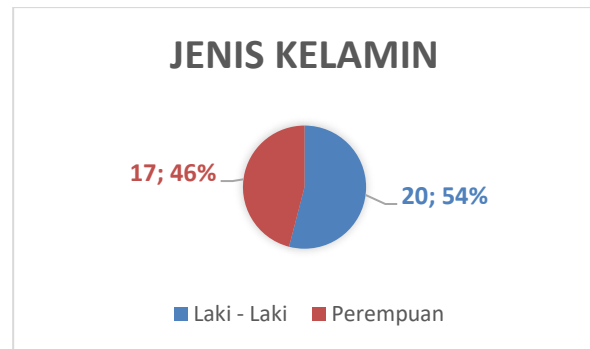


Figure.10. Respondent gender diagram

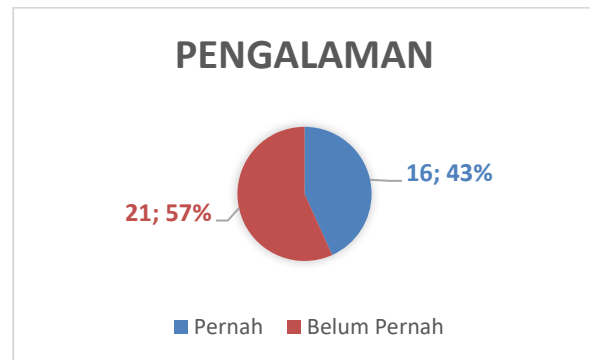


Figure.11. Respondent experience diagram

Variabel	Cronbach's Alpha Based on Standardized Items	Keterangan
Keinginan untuk menggunakan (BI)	.638	Questionable
Kebergunaan (U)	.875	Good
Tampilan (T)	.851	Good
Fungsi (F)	.928	Excellent
Atraktif (A)	.858	Good

Tabel.1. Tabel Reliability

The reliability test of variables BI, U, T, F and A, to determine in table 8 is based on George and Mallery (2005) George and Mallery (2003) rules of thumb: " $> .9$ - Excellent, $> .8$ - Good, $> .7$ - Acceptable, $> .6$ - Questionable, $> .5$ - Poor, and $< .5$ - Unacceptable".[10] Reliability test is a measuring tool used in research to determine the consistency of test results or questionnaires. In the results of the questionnaire for the reliability test for the BI variable, it was declared Questionable because the Cronbach's Alpha value showed the number .638, the Cronbach's Alpha value was obtained by testing similar variables using the Reliability Analyze menu on SPSS. The reliability test for the variables U, T and A was declared Good with Cronbach's Alpha values respectively .875, .851, and .858. The results of the reliability test on the F variable were declared Excellent with the Cronbach's Alpha value .928.

V. CONCLUSION

The conclusions obtained from the research "Smart Internship System Unika Soegijapranata (SISTA) based on Web (Progressive Web Apps)" are:

Companies can select prospective students who receive work apprenticeship programs by providing a filter feature where companies can search for candidates based on GPA and certificate accompanying diplomas as completeness of the search data for students who are applying for the related internship program.

Students can more easily carry out work apprenticeships where students can search for and apply for these activities not manually and without having to attach lots of files, by using the Web-Based Smart Internship System Unika Soegijapranata (SISTA) (Progressive Web Apps), Students only need send the latest photos and all data ranging from transcripts to certificates of obtaining diplomas have been integrated with the data of Soegijapranata Unika students.

Development of the Unika Soegijapranata Smart Internship System (SISTA) application based on Web (Progressive Web Apps), Progressive Web Apps are used to provide easy access and eliminate device limitations, using this method users can access applications on all different devices and operating systems, in addition to The use of bootstrap and tailwind as a frontend framework can be used to make the appearance more attractive.

The use of an API (application program interface) in the Unika Soegijapranata (SISTA) Web-based Smart Internship System (Progressive Web Apps) application greatly facilitates application development, besides implementing APIs can make applications faster and safer in exchanging data and information from applications one application to another, application communication with the API service provider server uses the request method, where the Web-based Unika Soegijapranata Smart Internship System (SISTA) application (Progressive Web Apps) makes a request to the server with a web

address that has been provided using certain variables then the API server will responds to data according to the variables that have been requested in the form of a json file format which will be processed by the Unika Soegijapranata Smart Internship System (SISTA) application based on Web (Progressive Web Apps) for display.

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