# Information System of Diploma Companion Certificate in South Aceh Polytechnic

M Arinal Ihsan [a,1]*, Nurul S [b,2], Sepri Kurniadi [c,3]

[a,b,c] Informatics Engineering Study Program, South Aceh polytechnic, Tapaktuan , 23711, Indonesia
[1]arynalfrank@gmail.com*; [2]nurulsafitriana9@gmail.com; [3]seprikurniadi@gmail.com

ARTICLE INFO

A B S T R A C T

As an institution providing higher vocational education, the South Aceh Polytechnic (POLTAS) must of course be consistent in carrying out innovations and policies regarding the development of information technology in improving services for the use of systems implemented within the campus. South Aceh Polytechnic issued a policy in 2023 regarding the issuance of Diploma Companion Certificates. The problem formulation in this research is how to build, design and collect the results of an information system that is able to adapt dynamically in assessing student activities while they are active students at the South Aceh Polytechnic, which is realized in a certificate accompanying the diploma. The aim of this research is to build a South Aceh Polytechnic Diploma Companion Certificate Information System (SISKPI), which provides information about a graduate's field of expertise to agencies or industry to obtain professional workers. This type of research is applied research with a case study at the South Aceh Polytechnic.

## I. Introduction

Various aspects of life are helped by technology, one aspect that is helped by technological developments is education. An individual's level of education greatly influences the profession he or she will pursue later. South Aceh Polytechnic (POLTAS) As an institution providing vocational higher education, of course it must be consistent in carrying out innovations and policies regarding the development of information technology in improving services for the use of systems implemented within the scope of the campus. Diploma Companion Certificate (SKPI) is an official document issued by a higher education institution. In article 1 paragraph 4 of Government Regulation number 81 of 2014, it is stated that the SKPI contains matters that include academic achievements or qualifications from degree education. During the study period, students can include the SKPI in their cirriculum vitae (CV) because the SKPI contains the student's track record and is a supporting document for all achievements and certifications of each student. The publication of the South Aceh Polytechnic SKPI is considered important because the SKPI provides detailed information about the areas of expertise possessed by every student who graduates from college. This research builds, designs and simulates the results of an information system that is able to adapt dynamically in assessing student activities while they are active students at the South Aceh Polytechnic which is stated in a certificate accompanying the diploma.

In this research, the author proposes to build a POLTAS Diploma Companion Certificate Information System (SISKPI) which is able to provide detailed information about the areas of expertise possessed by each student who graduates from South Aceh Polytechnic College. This research is also part of the POLTAS Competency Service which is managed independently as a guide to controlling and improving the quality of students and graduates in a planned and sustainable manner.

## II.  The Proposed Method

### Research Method

In the design of the South Aceh Polytechnic Complaints Information System, the stages carried out are the observation stage, data collection, the implementation stage, the evaluation stage, and the last stage is the implementation result stage.

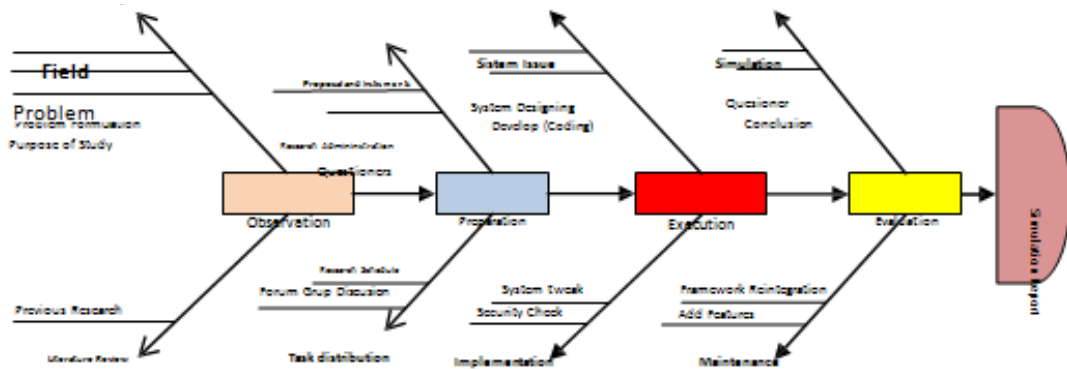The research procedure can be seen in the fishbone below:



Fig. 1. Fishbone Chart of Research

The research stages in this research are:

1.  Observation

Observations were made by conducting field studies at the South Aceh Polytechnic to obtain current system data, collect information to identify problems in the running system then formulate problems, and set research objectives. Furthermore, conducting a literature review by looking at previous research to support research carried out. This Stage of Literature Study conducts a collection of journals, websites, articles, theses to find out the theory supporting research and previous studies that have been conducted.

2.  Data Collecting

This stage collects data that will be used to support the content of this information system such as campus profile data, SPMI data, data for each study program, and other data needed.

3.  Implementation

At this stage, researchers jointly implement tasks at the preparation stage including system and framework issues to be used, designing and coding and testing the system, finding debugging of the system both security issues and user interface, and then implement it following the SDLC methodology.

4.  Evaluation

At this stage, together with the members of the researcher compile, create, and distribute questionnaires regarding the information system understudy to see the weaknesses and the possibility of adding features for later maintenance. Then make conclusions from the questionnaire data on the readiness of the system as a whole.

5.  Research

At this stage the chairman makes a report about the results of the SISKPI Simulation

## III. Method

In this study, researchers approached the System Development Life Cycle (SDLC) development model so that the process of building this information system was carried out sequentially and well-organized
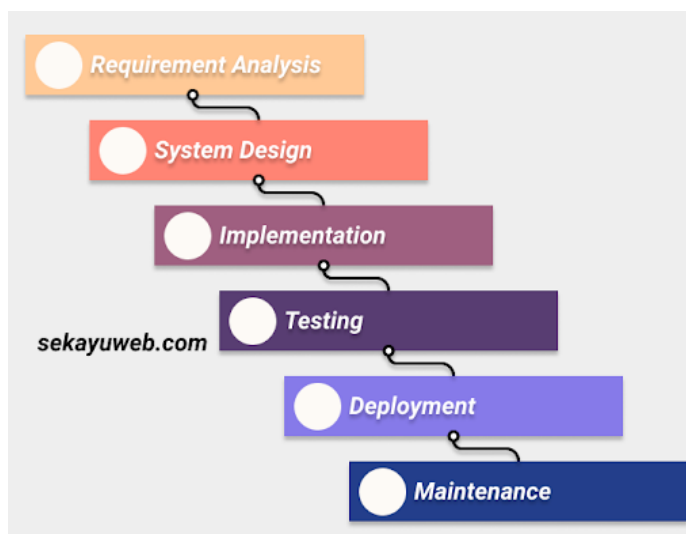
Fig. 2. System Development Life Cycle (SDLC)

The SDLC conceptual process model includes:

1. Analysis
   In this section, researchers carry out a needs analysis involving system functional requirements for end users. Researchers also identify problems and determine the scope of research to determine the steps in the process of solving the problem being studied, including determining resources, financial budget and technical workmanship.

2. System Design
   In this section, researchers design modules, security, architecture, information system interfaces and evaluate the software in both functional and operational aspects.

3. Buliding Software
   In this section the team works on building, coding and improving the overall required technical and physical configuration.

4. Software Testing
   This stage tests the system as a whole to answer the expected goals. This is done to ensure satisfaction with the use of the system for end users and find errors in the system

5. Software Implementation
   This stage is to release the software ready for use by end users

6. Maintenance
   At this stage, end users can contribute to improving the system to improve performance and add features. This stage is important to do to evaluate performance and the application of new technology to anticipate cyber security.

In getting maximum results in the SISKPI development case study, the author focuses on using a parallel model approach. This methodology is a development of the waterfall methodology, where the process of system design and implementation is carried out sequentially for the entire system and then divided into different sub-activities which are carried out in parallel.
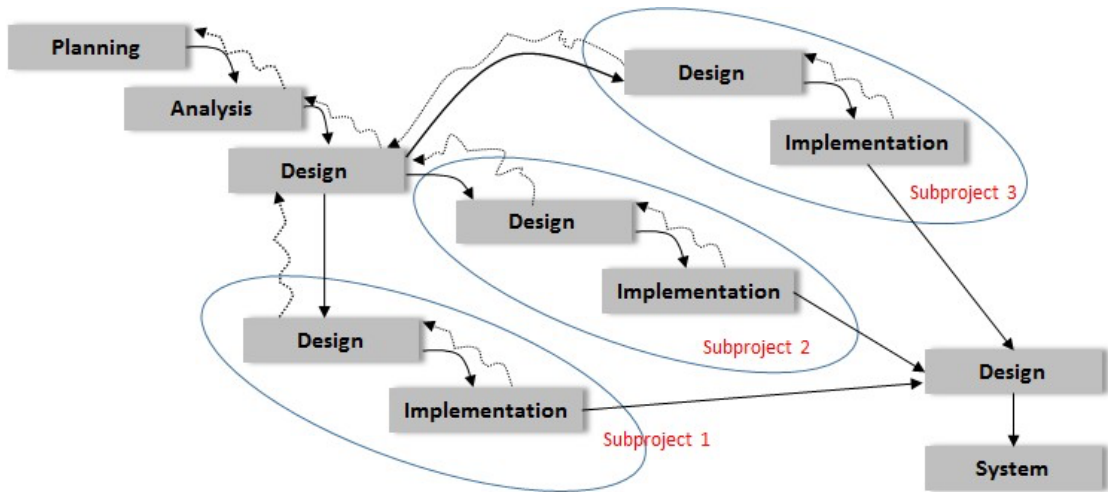
Fig. 3.Parallel Model Approach

## IV. Results and Discussion

The conclusions of this report are as follows:

a) The Diploma Companion Certificate Information System (SKPI) is an information system that functions to manage the data required in the process of issuing SKPI documents.

b) In this system there are three user levels, namely, students as users who are tasked with inputting SKPI data, study program admins as users who are tasked with verifying SKPI data that has been uploaded by students, and UPT admin who is super admin who is tasked with managing the entire system and printing student SKPI documents.

Based on the information system that the author has designed and created, the author hopes that this information system can be useful and beneficial for the South Aceh Polytechnic. The author realizes that this system is not perfect, both in appearance and in the data contained in it. The author hopes that in the future this system can be developed in the SKPI letter print menu, so that the values in the SKPI letter come out automatically without having to re-input them.

**Design**



Fig. 4. Diagram Use case

Figure 4 above illustrates that there are several actors and use cases involved in the Web-based Diploma Companion Certificate Information System (SKPI) at the South Aceh Polytechnic. The duties of each actor will be explained in table 1 below.

Tabel 1. Actor's Job

| No | Actor's name | Task |
|---|---|---|
| 1. | Students | *Students as users only have access to input data on their activities* |
| 2. | Study Program Admin | *The Study Program Admin's role is as a verifier who verifies/checks the data that has been input by students* |
| 3. | UPT Admin | *The UPT Admin is the user who prints the SKPI based on student data which has previously been verified by the Study Program Admin and can manage users such as adding, changing, deactivating and deleting users.* |
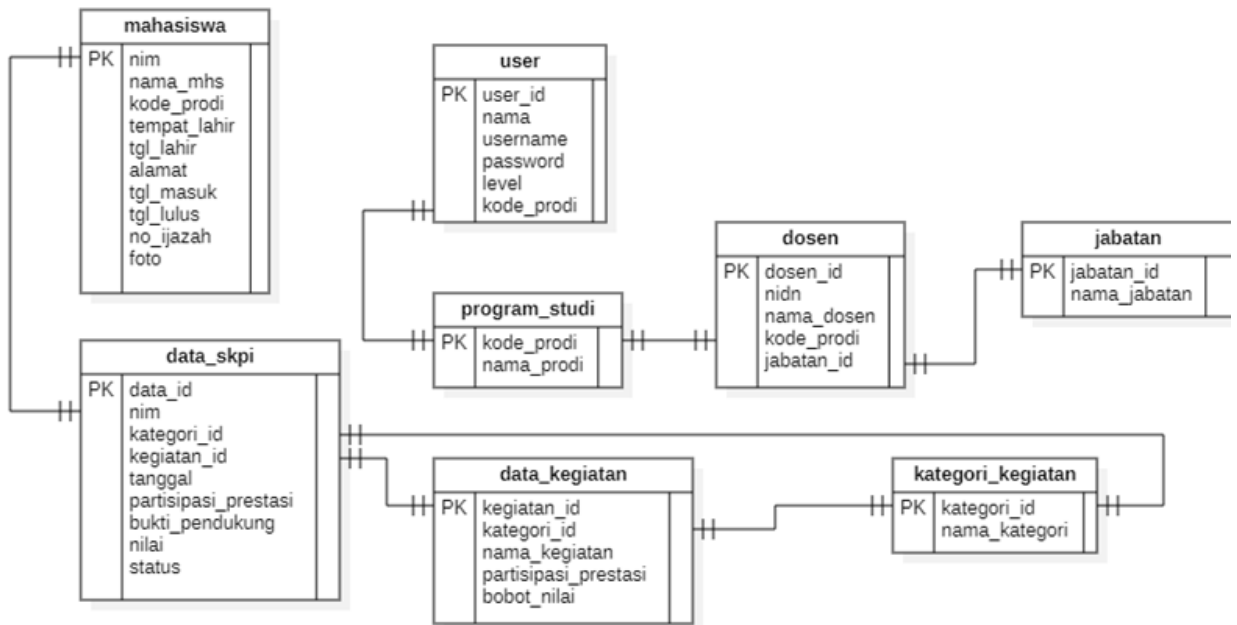


Fig. 5. Database Relations Table

Figure 5 above depicts the Entity Relationship Diagram (ERD), which consists of tables of users, students, study programs, lecturers, positions, SKPI data, activity data and activity categories that are related to each other.

**Information System Implementation**

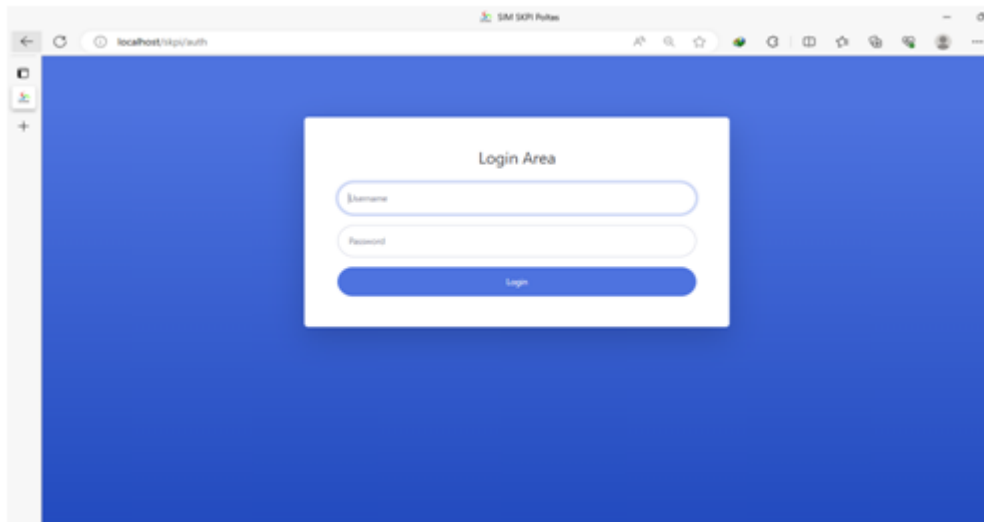Information System For Poltas Company Certificate Letter (SISKPI) are as follows:

Fig. 6. Display user login menu

Users are asked to enter a username and password that has previously registered. This is the login page display for students, study program admins, and UPT admins.
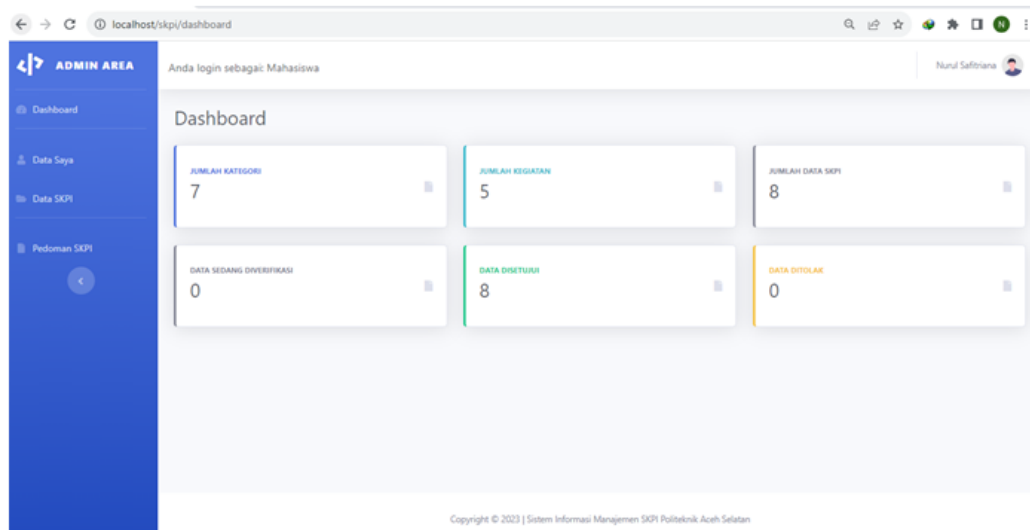


Fig. 7. Display of the student data page

This is a display of the student data page. This page contains student identity data such as name, NIM, study program, activity category, activity details, participation/achievements, supporting evidence, and status.
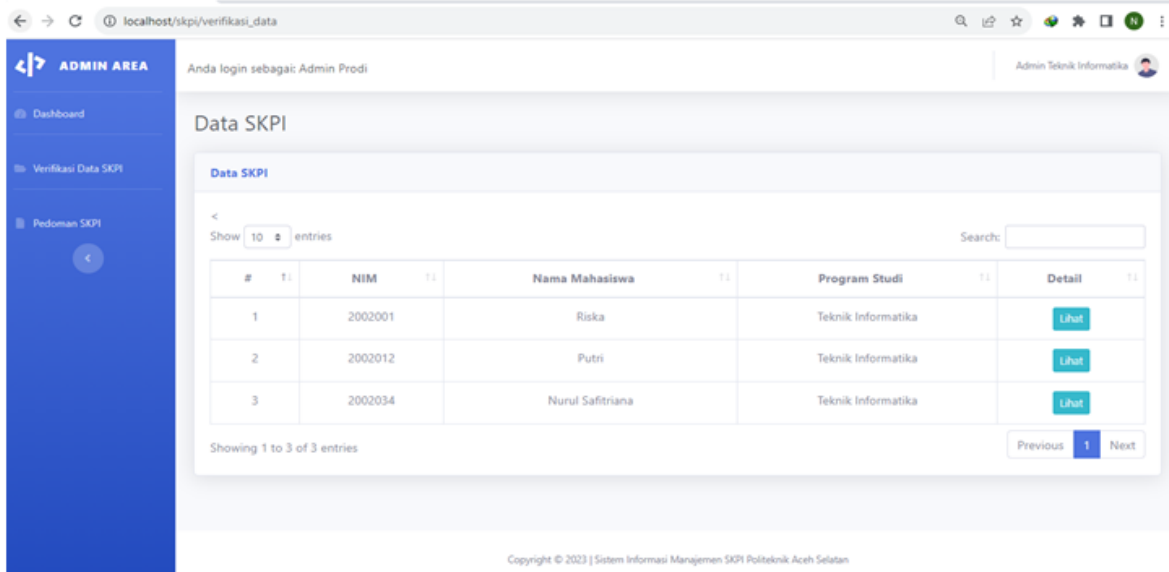
Fig. 8. SKPI Data Verification Page

Figure 8. above is a display of the SKPI data verification page. This page contains student SKPI data for verification, such as NIM, student name, study program and details for viewing student activities that will be verified.
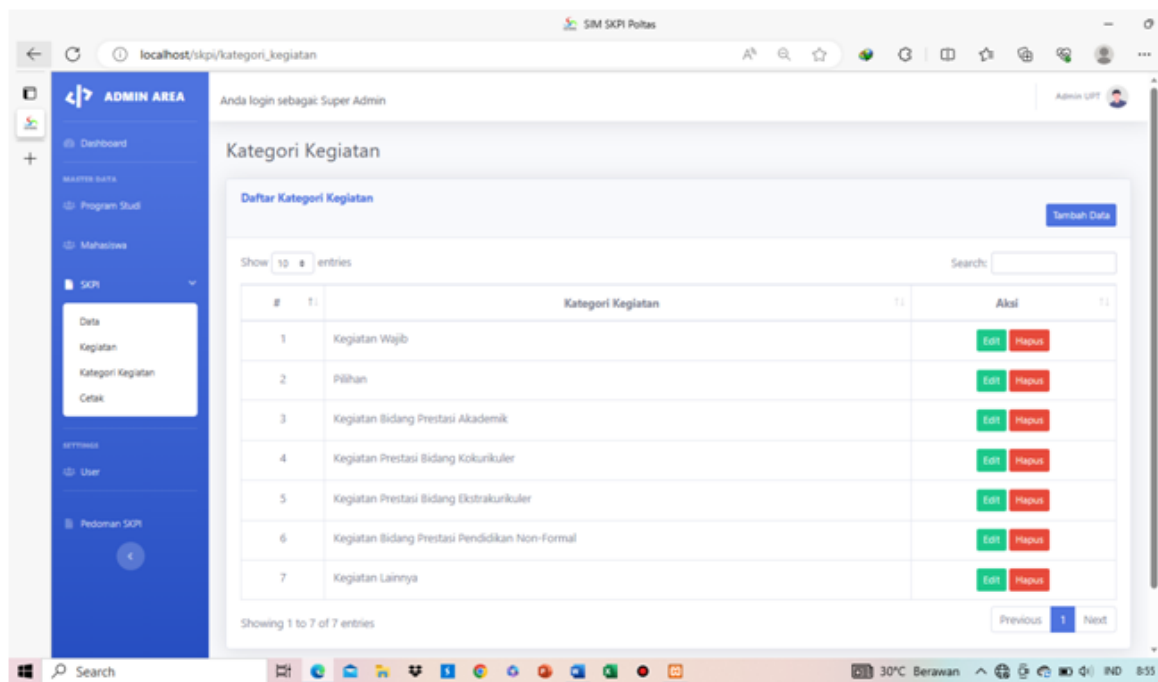


Fig. 9. Activities Page

Figure 9. above is a page display of the activity page which contains activity data such as activity category, activity name, participation/achievement, value weight, and action.

**Surat Keterangan Pendamping Ijazah (SKPI)**
**Program Diploma III**

**POLITEKNIK**
ACEH SELATAN

Nomor: ...../UPT.LUK/..../2023

| | | |
|---|---|---|
| Nama Lengkap | : | Yuli |
| Nomor Induk Mahasiswa (NIM) | : | 2002001 |
| Tempat dan Tanggal Lahir | : | tapaktuan, 09 September 2000 |
| Akreditasi Kampus | : | Baik |
| Program Studi | : | Teknik Informatika |
| Tanggal Masuk | : | 09 September 2020 |
| Tanggal Lulus | : | 09 November 2023 |
| Nomor Ijazah | : | 023/D3/I/09/2023 |
| Gelar yang diperoleh | : | A.Md |
| Jenis Pendidikan | : | Vokasi |
| Bahasa Pengantar Kuliah | : | Bahasa Indonesia |
| Program Pendidikan Tingkat Lanjutan | : | D4 dan Strata 1 |

| No. | Kriteria Kegiatan | Nilai SKP |
|---|---|---|
| 1 | **Kegiatan Wajib** | |
| | Orientasi Mahasiswa Baru Tingkat Institusi | 25 |
| 2 | **Kegiatan Bidang Prestasi Akademik** | |
| | Wisudawan Terbaik Tingkat Institusi | 15 |
| | **Jumlah Perolehan SKP** | 40 |
| | **Predikat** | Cukup |

Ketua Program Studi

**Tapaktuan, 02-09-2023**
**Kepala UPT**

**Salya Rater, S.Kom., M.Kom**
NIDN.1234567890

**M. Arinal Ikhsan, S.Kom., M.Kom**
NIDN.2345678901

Jln. Merdeka, Kompleks Reklamasi Pantai, Tapaktuan 23711, Aceh Selatan, INDONESIA
Tel: +62 656-2310057, Email: humas@poltas.ac.id, Website: www.poltas.ac.id

Fig. 10. SKPI Print Results

Figure 10. above is a display of the printed page of the certificate accompanying the diploma

## V. Conclusion

In this system there are three user levels, namely, students as users who are tasked with inputting SKPI data, study program admins as users who are tasked with verifying SKPI data that has been uploaded by students, and UPT admin who is super admin who is tasked with managing the entire system and printing student SKPI documents.

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