

Design and Build an Application for Patient Registration Services at Prosthetics Orthotics Clinic, Health Polytechnic of Jakarta I



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ABSTRACT: This study aims to design a patient registration service application for the Prosthetics Orthotics Clinic at the Health Polytechnic of Jakarta I. Several methods for developing patient registration applications that were previously developed used the waterfall method. In this study, it was designed using the Rapid Application Development method with the hope that the development process could be faster with good results compared to the waterfall method. The result of this design is the formation of input and output designs for patient registration services for prosthetic orthotic clinics. This is followed by the implementation of this design to be able to speed up the service process to patients and store patient data more efficiently.

KEYWORDS: Patient registration, Clinic, Prosthetics Orthotics, RAD.

I. INTRODUCTION

Department of Prosthetic Orthotics, Health Polytechnic Jakarta I is a public university in the field of Prosthetic Orthotic Services which was established in 2009 in collaboration between the Ministry of Health of the Republic of Indonesia and an NGO from the UK, namely The Cambodia Trust, which is in charge of Prosthetic Orthotic education which provides assistance in bringing in expatriates from several countries that are reliable in their fields with technology transfer and workshop assistance along with materials in accordance with the National curriculum and ISPO/WHO curriculum.

The Prosthetic Orthotic Study Program at the Health Polytechnic Jakarta I has clinical services aimed at people with disabilities. In 2021, the prosthetic orthotic department is still dedicated to helping old patients who directly assist the educational process as patient models by providing repair tools, or replacement of assistive devices in order to create the best applied educational environment that is adaptive to the work environment.

Currently, the prosthetic orthotic clinic in recording patient registration and patient medical records still uses a manual system, which is recorded through a registration form written by the patient and a medical record form recorded by the prosthetic orthotic clinic admin. Along with the development of the era towards the digitalization of information systems where the collection of data and information should have been recorded through the information system.

Based on a literature study of several articles discussing patient registration, the development of an information system on patient registration services has been carried out, but still uses the waterfall method where there is a faster and more efficient method of developing applications, namely the Rapid Application Development method [1–3]. RAD is a software process model that emphasizes a short development life cycle, and a rapid adaptation version of the Waterfall method using component construction [4]. From these problems, it is necessary to develop an information system or application for registration of patients at the prosthetic orthotic clinic at the Health Polytechnic Jakarta I.

II. METHOD AND MATERIAL

The methodology used is Rapid Application Development (RAD) with a prototype approach and the resulting product is a prototype of Patient Registration Services at the Prosthetic Orthotic Clinic, Health Polytechnic Jakarta I. This method allows system development to be carried out faster and increases system users' understanding of technology quickly [5]. Researchers will carry out the analysis, design, and implementation phases sequentially and iteratively to obtain a simplified version more quickly. The RAD method is very suitable for use on systems that are not so large and complex [6]. It's just that this research did not carry out a redesign phase based on the results of the re-analysis of the first prototype until it finally produced an implementation product. The stages carried out in the development of this research information system are as follows:

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1. Planning

At this stage, identification of the resources needed in the development of information systems is carried out by reviewing the literature and related theories which are limited by the scope of the research.

2. RAD design workshop

The analysis is carried out on the system that is already running to find out the shortcomings and problems of the system. This information provides the resource requirements used in correct and efficient system improvement. The data and information used at this stage comes from document analysis, in-depth interviews with related parties and observations.

The results of the needs analysis are used in designing information systems according to needs. The design of the data flow and user interface follows the applicable design rules. The creation of the database is adjusted to the needs of data storage, traffic/data transactions and the needs of the data in the indicators. The activities carried out at this stage are:

- Input design, by designing the form, the input display form of the user interface (user interface) follows the applicable design rules.
- Output design, by designing views for system output, including documents and user interfaces.
- Database design, by designing the shape of the database and files needed in the development of an information system for patient registration services at the orthotic prosthetic clinic of Health Polytechnic Jakarta I.

3. Implementation

The form of the implemented application is a prototype of the designed application. The test is carried out thoroughly, both in terms of interface design, flow of database usage and the completeness of the required information. Then it was tested on the first prototype of the system that was produced.

III. RESULT

1. Logical Record Structure (LRS) Design

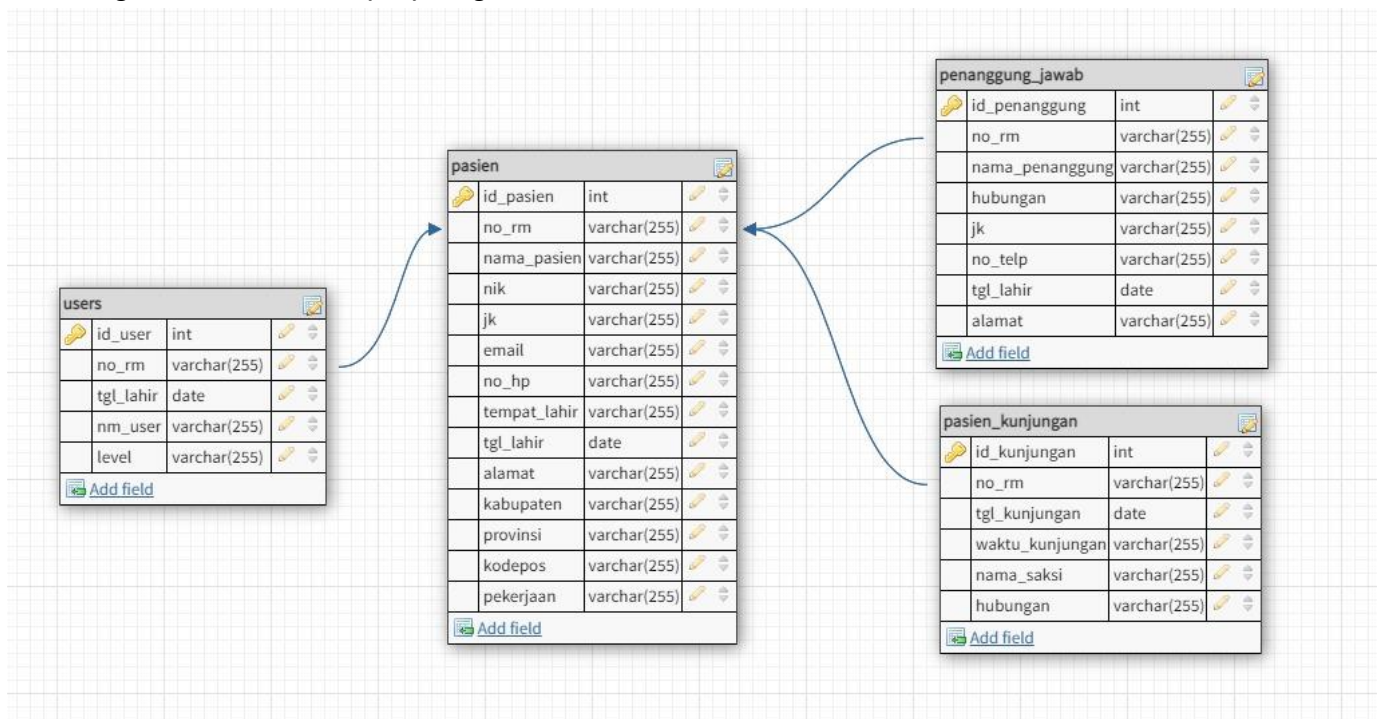


Figure 1. Design of Logical Record Structure (LRS)

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2. Sequence Diagram Design

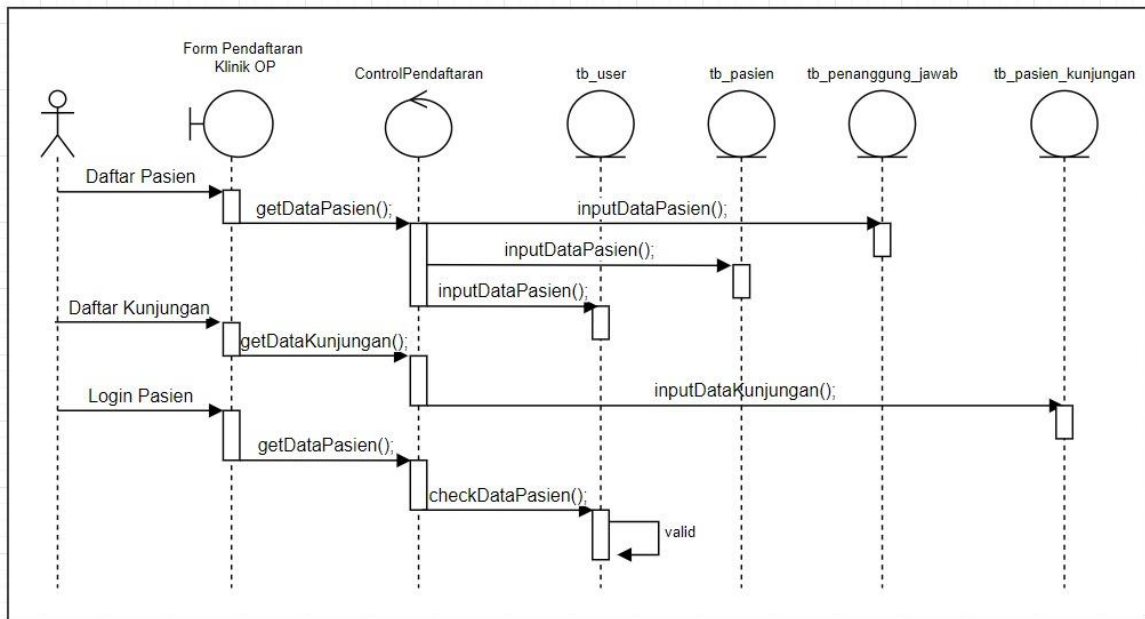


Figure 2. Sequence Diagram design (patient registration process)

3. System Prototype Design

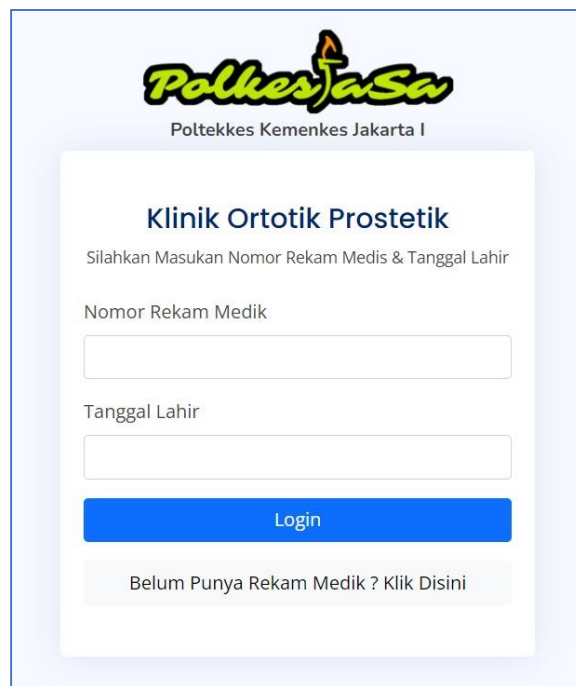


Figure 3. Login page design

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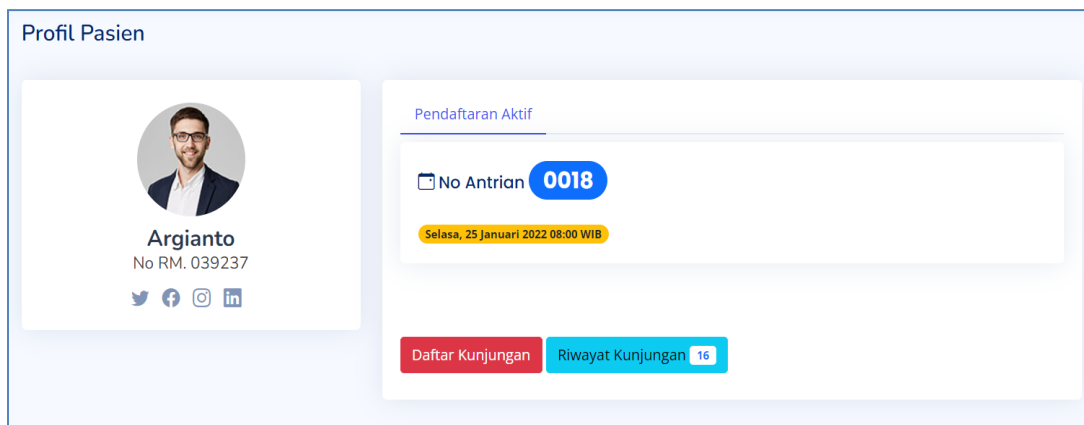


Figure 4. Patient profile page

The form is titled "Registrasi Pasien Baru" with the subtitle "Lengkapi Formulir Dibawah Ini". It features the "Poltekjasu" logo at the top. The form is divided into two main sections: "Identitas Pasien" and "Penanggung Jawab Pasien".

Identitas Pasien

- Nama Lengkap:
- NIK:
- Jenis Kelamin:
- Email:
- No. HP:
- Tempat Lahir:
- Tgl Lahir:
- Alamat Lengkap:
- Kab/Kota:
- Provinsi:
- Kodepos:
- Pekerjaan:

Penanggung Jawab Pasien

- Nama Lengkap:
- Hubungan:
- Jenis Kelamin:
- No. HP:
- Tgl Lahir:
- Alamat Lengkap:
- Saya menyetujui [Syarat dan Ketentuan](#)

At the bottom, there are two buttons: a blue "DAFTAR" button and a grey "BATAL" button.

Figure 5. New patient registration page design

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Pendaftaran Kunjungan

Pasien Umum

No RM: 039237

Nama: Argianto

No KTP: 3175094707490007

No HP: 0182910830

Tgl Kunjungan:

Waktu Kunjungan:

Saksi

Nama Saksi:

Hubungan dg pasien:

Saya telah membaca dan menyetujui PERSETUJUAN /IJIN PELAYANAN ORTOTIK PROSTETIK

DAFTAR SEKARANG

Figure 6. Patient visit registration page

Riwayat Kunjungan

Daftar Kunjungan

#	Tanggal	Waktu	Petugas	Status
1	Senin, 01 Januari 2022	09:00 WIB	Ahmad	Sukses
2	Senin, 02 Januari 2022	09:00 WIB	Subekti	Batal
3	Senin, 03 Januari 2022	09:00 WIB	Ahmad	Batal
4	Senin, 04 Januari 2022	09:00 WIB	Ahmad	Sukses

Figure 7. Patient visit history page

PolkesJasa
Poltekkes Kemenkes Jakarta I

Bukti Pendaftaran



No Pendaftaran : 0018

Nomor Rekam Medik
039237

Nama **Argianto**

Tgl Kunjungan
Selasa, 26 Januari 2022

Pukul
09.00 WIB

Figure 8. Patient registration proof page

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V. CONCLUSIONS

Applications for patient registration services at the prosthetic orthotic clinic can speed up the service process to patients and store patient data more efficiently. In addition, a prosthetic orthotic clinic with an educational orientation where students can directly see the process of recording and examining patients directly so that students can use the clinic for the learning and research process.

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