

Software Requirement Specification of Web-based Clinic Appointment System

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Abstract—Clinic as one agency that provides health services to the general public who require the existence of an information system. In providing services and information on clinic still not using a computerized system. The service is for example: patient registration is still done by the patient must come directly to the clinic, do not have queue system in treatment, some patients who want to do health consultation often experience disappointment, and medical record management which have many weaknesses such as difficulty search for files, allowing the occurrence of damage and errors of writing and reading. Therefore, built a web-based clinic appointment system using PHP framework that can provide information about registration of medication.

Index Terms—clinic, information, PHP, registration

I. INTRODUCTION

Clinic is a place of health care for the general public. Clinics can create value positive for patients who visit for treatment, by having quality health services, both from the doctor's perspective, as well as polite attitude from employee. To create health services, The clinic must know what it wants patients through efforts to manage good relationships with his patient. The system used by the Clinic in providing services and information Currently we still don't use that system computerized. For example, this service Patient registration is still done on a patient basis must come directly to the clinic or by telephone, does not have a queue system for treatment with aim to serve its patients in a coordinated manner and maintain an orderly clinic atmosphere, then patients who wish to have a health consultation often experience disappointment, because doctors who want to be found not come to practice and not find out the correct consultation schedule information for patients. In addition, based on the online registration survey, queues, doctor consultations and data management medical records of patients who have many weaknesses such as difficulty finding files, allows damage and errors to occur writing and reading. Therefore, an information system was built Clinical services

using PHP framework. With this system it can provide convenience for patients who will seek treatment at the clinic in getting clinical services in the form of registering, taking a queue, making a consultation, reply to online consultations, and history disease. The system will make things easier for clinic to be able to manage patient medical data so that it still exists and can be done more easy, fast and transparent.

II. METHOD & ALGORITHM

In carrying out this research, the SDLC method was used. The SDLC method is a method which uses a systems approach called the waterfall approach) where each stage of the system will be carried out in descending order from planning, analysis, design, implementation, and maintenance [1]. Use System development standards are very rarely used for development software in the analysis phase can use standards that have been translated from best practices that are already a standard in the form of Documentation on Specifications Software requirements in accordance with IEEE 830-1998 standards on Software Requirement Specification[2].

A. Problems Indetification

Based on observations made at the clinic, there are still problems using manual (non-computerized) methods, the obstacles faced are:

- a) There is not enough space to queue at the clinic
- b) It takes time to queue for treatment.
- c) the patient does not know the schedule of the doctor
- d) It is difficult to find patient data and it takes a long time to search for files.

B. User Requirements

This Information System is a system that processes data and information about clinic, patients, doctors and appointment schedules with the aim of making it easier for administrator to manage patient and doctor data, as well as making it easier for patients to register for making appointment with doctor. Based on observations at clinics that currently do not use a computerized system in providing services and information, the

solution is:

1. Create online patient registration.
2. Online registration for an appointment with a doctor
3. Show clinic information
4. Show patient medical records
5. Create a drug inventory master

C. Product Perspective

This information system is a system used to monitor and manage patient or doctor data and patient and doctor appointment schedules. Several system limitations:

1. This clinical information system is used online and is website-based contains registration of patient and doctor appointments.
2. The information presented is information related to the schedule of the doctor on duty and patient data.
3. User can use the Information System and only those who have registered can use.
4. Only patient can register for appointments
5. Administrator will approve registration if it matches the doctor's schedule.

D. User Classes and Characteristic

There are several types/characteristics of users of this system, namely:

1. Super Administrator: user with the highest level of access and use as well as adding and changing data for all information displayed in the system.
2. Patient: is the level of user who functions and has rights and authority use and view data and information related to patient data and appropriate doctor's schedules and make appointment registrations.

E. Database Specification

Database in this system is using MySQL. Here is the structure of database for this system:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id_rekam_medis	int(11)			No	None		AUTO_INCREMENT	 Change  Drop More
2	kode_rm	varchar(50)	utf8mb4_general_ci		No	None			 Change  Drop More
3	id_user	int(11)			No	None			 Change  Drop More
4	tgl_periksa	datetime			No	None			 Change  Drop More
5	bln	varchar(2)	utf8mb4_general_ci		No	None			 Change  Drop More
6	thn	varchar(4)	utf8mb4_general_ci		No	None			 Change  Drop More
7	id_pasien	int(11)			No	None			 Change  Drop More
8	keluhan	text	utf8mb4_general_ci		No	None			 Change  Drop More
9	pemeriksaan_fisik	text	utf8mb4_general_ci		No	None			 Change  Drop More
10	diagnosa	text	utf8mb4_general_ci		No	None			 Change  Drop More
11	terapi	text	utf8mb4_general_ci		No	None			 Change  Drop More
12	biaya_periksa	int(20)			No	None			 Change  Drop More
13	biaya	varchar(20)	utf8mb4_general_ci		No	None			 Change  Drop More

Figure 2 Medical Record

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id_pasien	int(11)			No	None		AUTO_INCREMENT	 Change  Drop More
2	tgl_terdaftar	date			No	None			 Change  Drop More
3	nama_pasien	varchar(50)	utf8mb4_general_ci		No	None			 Change  Drop More
4	alamat	varchar(100)	utf8mb4_general_ci		No	None			 Change  Drop More
5	usia	int(11)			No	None			 Change  Drop More
6	id_jk	int(11)			No	None			 Change  Drop More
7	nama_ibu	varchar(60)	utf8mb4_general_ci		No	None			 Change  Drop More
8	id_agama	int(11)			No	None			 Change  Drop More
9	no_telp	varchar(12)	utf8mb4_general_ci		No	None			 Change  Drop More
10	gol_darah	varchar(10)	utf8mb4_general_ci		No	None			 Change  Drop More
11	pekerjaan	varchar(50)	utf8mb4_general_ci		No	None			 Change  Drop More

Figure 3 Patient

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id_daftar	int(11)			No	None		AUTO_INCREMENT	 Change  Drop More
2	id_pasien	int(11)			No	None			 Change  Drop More
3	jadwal_temu	datetime			No	None			 Change  Drop More
4	id_dokter	int(11)			No	None			 Change  Drop More
5	keluhan	varchar(255)	utf8mb4_general_ci		No	None			 Change  Drop More
6	id_ket	int(11)			No	None			 Change  Drop More

Figure 4 Appointment

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id_dokter	int(11)			No	None		AUTO_INCREMENT	 Change  Drop More
2	nama_dokter	varchar(100)	utf8mb4_general_ci		No	None			 Change  Drop More
3	ket	varchar(100)	utf8mb4_general_ci		No	None			 Change  Drop More

Figure 5 Doctor

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id_user	int(11)			No	None		AUTO_INCREMENT	 Change  Drop More
2	nama	varchar(80)	utf8mb4_general_ci		No	None			 Change  Drop More
3	username	varchar(80)	utf8mb4_general_ci		No	None			 Change  Drop More
4	password	text	utf8mb4_general_ci		No	None			 Change  Drop More
5	id_jk	int(11)			No	None			 Change  Drop More
6	email	varchar(80)	utf8mb4_general_ci		No	None			 Change  Drop More
7	no_telp	varchar(12)	utf8mb4_general_ci		No	None			 Change  Drop More
8	photo	text	utf8mb4_general_ci		No	None			 Change  Drop More

Figure 6 User

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id_obat	int(11)			No	None		AUTO_INCREMENT	 Change  Drop More
2	nama_obat	varchar(50)	utf8mb4_general_ci		No	None			 Change  Drop More
3	jenis_obat	varchar(50)	utf8mb4_general_ci		No	None			 Change  Drop More
4	dosis	varchar(40)	utf8mb4_general_ci		No	None			 Change  Drop More
5	stok_obat	varchar(30)	utf8mb4_general_ci		No	None			 Change  Drop More
6	stok_keluar	varchar(20)	utf8mb4_general_ci		No	None			 Change  Drop More
7	tgl_kadaluarsa	date			No	None			 Change  Drop More
8	harga	varchar(20)	utf8mb4_general_ci		No	None			 Change  Drop More
9	harga_jual	varchar(20)	utf8mb4_general_ci		No	None			 Change  Drop More
10	profisi	varchar(50)	utf8mb4_general_ci		No	None			 Change  Drop More

Figure 7 Medicine

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id_ket	int(11)			No	None		AUTO_INCREMENT	 Change  Drop More
2	keterangan	varchar(100)	utf8mb4_general_ci		No	None			 Change  Drop More

Figure 8 Description

F. Use Case Diagram

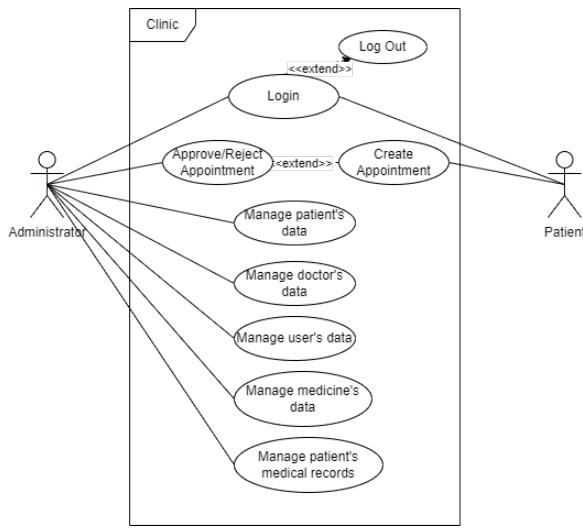


Figure 1 Use Case Diagram

G. Hardware Interfaces

The hardware interfaces used in this software are:

- Desktop PC/Notebook/Tablet/Smartphone with minimal processor
- Minimum RAM 512 Mb
- Hard disk/Media Card/MMC/SD Card
- Monitors
- Keyboard/Mouse/Touchscreen

III. RESULT

This section is the result of the design above:

A. Log in page

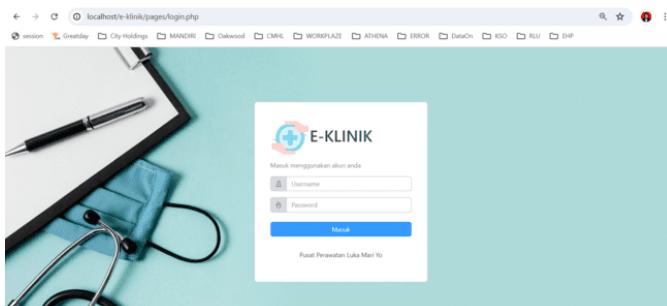


Figure 9 Log in page

B. Dashboard page

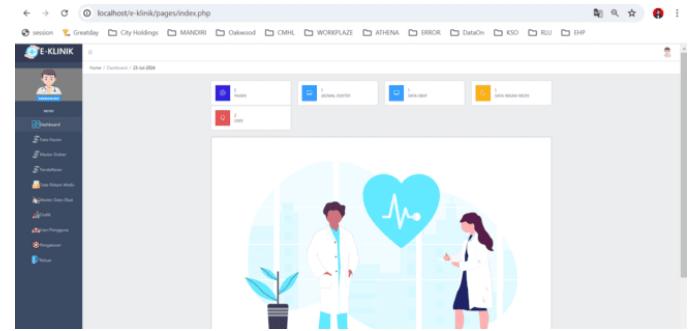


Figure 10 Dashboard page

C. Appointment's Page

In Appointment page, admin can edit or delete the appointment. Admin will approve based on the schedule of doctor.

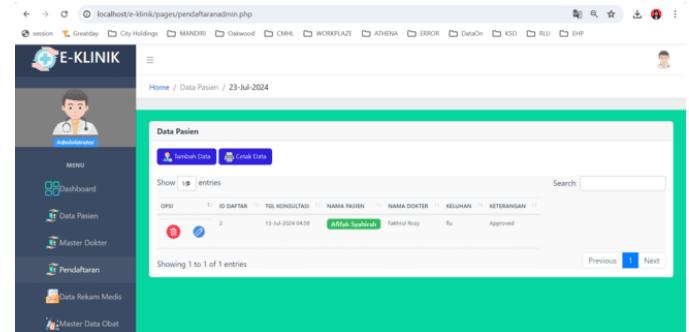


Figure 11 Appointment Page (admin)

Patient can create an appointment in this page.

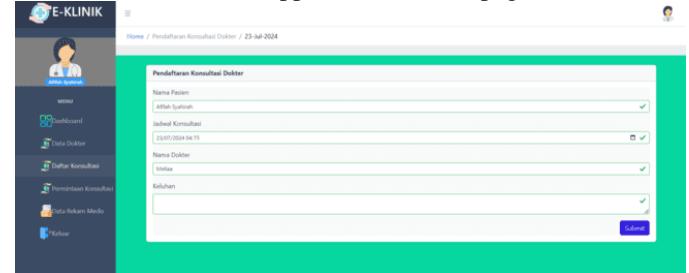


Figure 12 Creating Appointment Page (patient)

In this page, patient can see the status of the appointment. Once admin approves, patient can see 'approved' here.

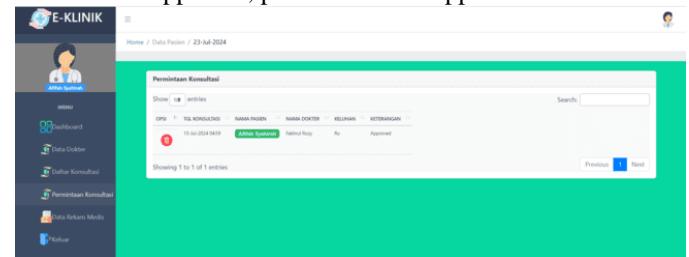


Figure 13 Appointment Page (patient)

D. Patient's Master Data Page

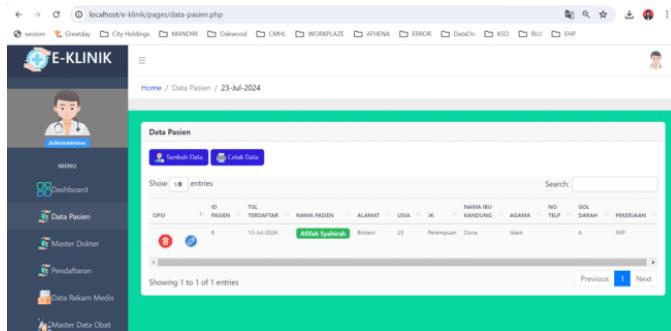


Figure 14 Patient's Master Data Page

E. Doctor's Master Data Page

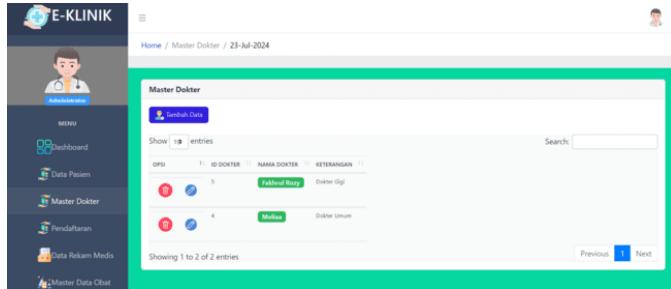


Figure 15 Doctor's Master Data Page (admin)

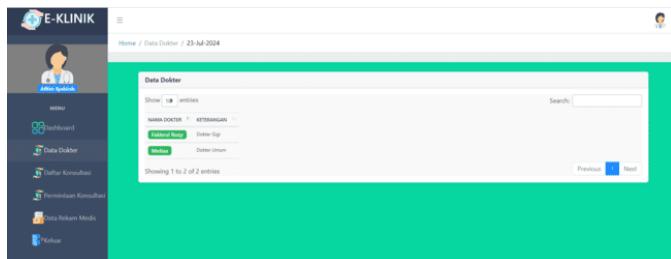


Figure 16 Doctor's Master Data Page

3. web-based clinic information system as a solution for managing clinic data quickly and easily compared to manual, it is more efficient and saves storage space and management, for example add data, change (update) data, and delete data.

B. Suggestion

The suggestions given are: implementing applications on mobile platforms, creating queue numbers and for further development, the system can add services connected to health insurance such as BPJS Health, etc.

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IV. CONCLUSION

A. Conclusion

The conclusion of this paper is that the web-based clinic appointment system is as follows:

1. The web-based clinic appointment system has been successfully built to suit the user requirements that produce a system that can provide information about clinic services.
2. This web-based clinic information system was created as an information tool in presenting information regarding patient data, medical record data, doctor data, drug data, and action data.