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- Project Title: Health Care Management System
- Course Code: CSE2004
- Course Title: Database Management Systems
- Class Number: **CH2020211700469**
- Semester: Winter 2020-21
- Slot: D1
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ABSTRACT

The purpose of the project entitled as "HealthCare Management System" is to computerize end to end management of Hospital by developing software which is user friendly simple, fast, and cost effective.

The main function of the system is to register and store patient and doctor's details, create appointments for patient for specialized doctor and to generate the prescription by doctor. It also generates a sales report after the drugs are purchased. Any update or deletion of these details can also be done as and when required.

The login into the Health Care Management System is using a username and password. User can be created by two roles: Admin and Receptionist. The data can be retrieved easily by patient, doctor, Receptionist or pharmacist according to their role. The interface is very user-friendly

Introduction

To develop a Health Care Management system, we take care of patient registration, Doctor Registration, Appointment Management for Patients and Doctors, Prescription and drug information and sales reports generated by the Pharmacist.

Currently there is manual system in many healthcare clinics which is slow laborious and error prone, hence the need to computerize the same for quicker efficient results and customer satisfaction. The system is designed for multispecialty health clinics.

Project Motive

With every going day, there is a need to have a centralized mechanism where the inflow of outpatient request exceeds that which can be handled manually. Hence computerization of patient registration, create appointments for specialized doctors for the required patients, create prescriptions and also to maintain the drugs for the pharmacists through the computerization to bring better satisfaction.

Creating of automatic receipt would mean better service to the patients. It would also help in reducing the complexity of maintaining the records manually and thus less time is wasted on rework. In order to achieve this, the computerization of the Health Centre will help greatly in maintaining of proper information about the out patients, doctors, automatic room booking for patients appointments, generating prescriptions by the doctor, patients records and daily dispatching of the drugs to various patients, creating of sales reports for the pharmacists.

To develop a Health Care Management system as from manual system to computerized system, and to maintain a centralized system for Patients, Doctor and Pharmacist. The current manual system is slow, tedious and error prone.

Main Features in this project:

- Maintaining records of indoor/outdoor patients

- Maintaining records of specialized Doctor
- Maintaining the appointment for patients for specified doctors
- Maintaining patient's prescription and medicines
- Providing billing details for the drugs purchased by the patients.
- Sales reports can be generated by the pharmacists

This project consists of three roles of login system known as the Doctor and Receptionist and Pharmacist. The system shall be secure enough and only accessible via valid usernames and passwords for each user.

Receptionist

- On discussing the receptionist's power on the project, the receptionist has full access to the system.
- Receptionist shall be able to create the user types (Doctor, Receptionist, Patient, Pharmacist).

Patient

- Receptionist shall be able to add the patient details.
- Receptionist shall be able to retrieve the patient details.
- Receptionist shall be able to edit and delete the patient details.

Doctors

After creating the doctor by user, doctor shall be able to login in to the system.

- Doctors shall be able to fill the registration form.
- Doctors shall be able to retrieve their details.
- Doctors shall be able to view the appointment details.
- After examining the patient, doctor shall be able to click the prescription button. It will take you to the prescription form for writing the prescription.
- Doctors shall be able to retrieve the prescription details.

Pharmacist

- Pharmacist shall be able to add the pharmacy items.
- Pharmacist shall be able to view the prescription details upon requested by doctor.
- Pharmacist shall be able to handle the inventory of the drugs.

- Pharmacist shall be able to generate the sales report

METHODOLOGY IN DEVELOPING PROJECT

The general methodology in developing a system is involved in different phases, which describe the system's life cycle model (software development lifecycle model) for developing software project. Like most systems, the life cycle of the computer based system also exhibits distinct phases.

As part of Requirement Analysis, the general requirement is collected from smaller health clinics.

Current system

Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms and often information is incomplete or does not follow any standards. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores.

Proposed System

The Health Care Management System is designed for any hospital to replace their existing manual paper based system. The new system is to control the information of patients. Room availability, generate prescription and provide sales reports for pharmacists. These services are to be provided in an efficient, cost effective manner, with the goal of reducing the time and resources currently required for such tasks.

Software Specifications

The system application is designed in Java (Frontend) and database as MySQL. The webserver used is XAMPP server. NetBeans is used as IDE for developing the Java code. JDBC connectivity used for database connectivity (mysql-connector-java-5.1.47).

Design:

The requirements are collected and Entity relation diagram is drawn. From the ER diagram, the tables are finalized after normalization. The insert, update and select queries from specified tables are finalized and then code developed in Java.

Database Design (ER diagram, Tables, Normalization)

System Specification

- **Hardware requirement**

Processor	-	Intel Celeron class Processor with 2.0 GHz
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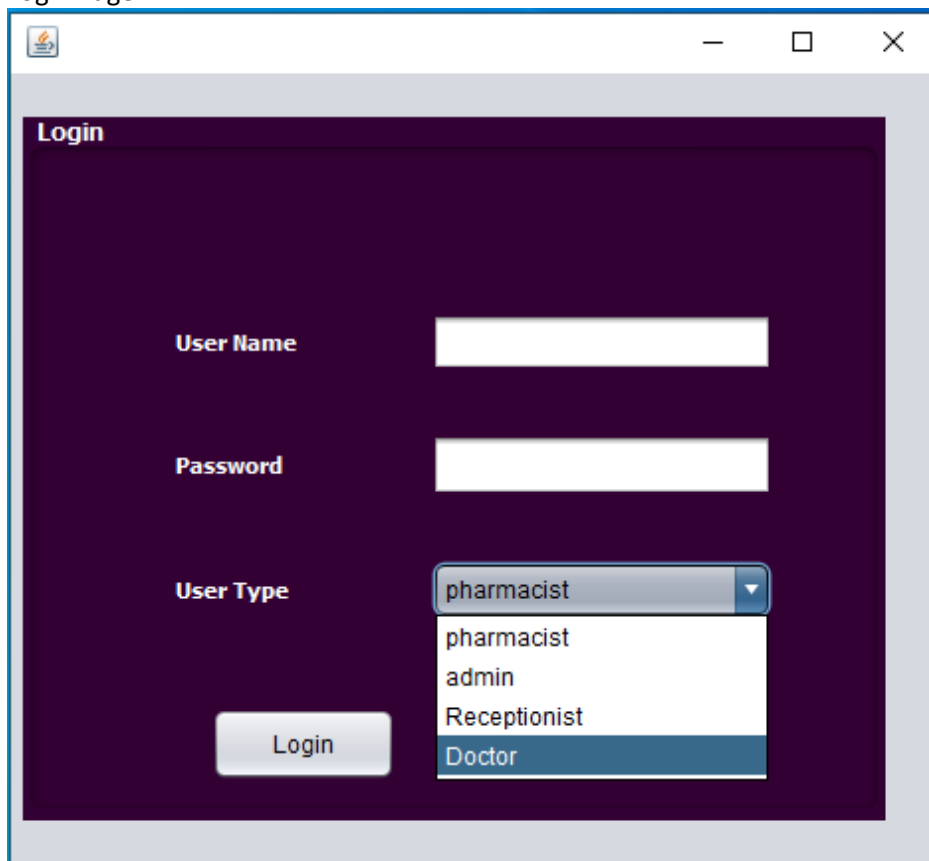
RAM	-	256 MB
Hard Disk	-	40 GB
Keyboard	-	101 keys
Mouse	-	Any pointing device

- **Software requirement**

- Front end:
 - Java
- IDE:
 - NetBeans
- Webserver:
 - XAMPP Server
- Back end:
 - MySQL
 - JDBC
- Operating System:
 - Windows 10

SAMPLE SCREENSHOTS

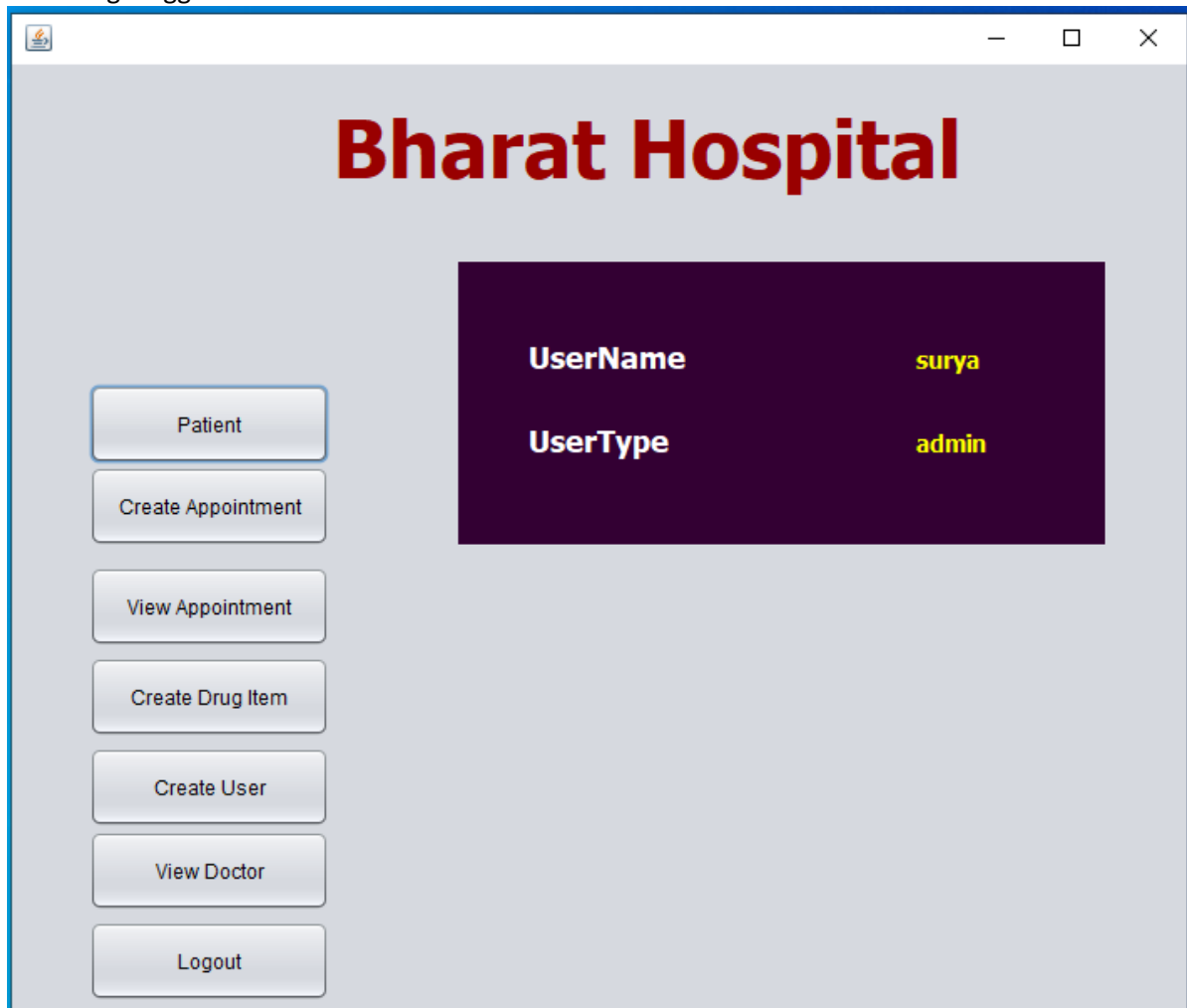
Login Page



The screenshot shows a window titled "Login Page" with a dark purple background. The window contains the following elements:

- Login**: A title label in the top left corner.
- User Name**: A text label next to a white input field.
- Password**: A text label next to a white input field.
- User Type**: A text label next to a dropdown menu. The dropdown menu is open, showing a list of user types: "pharmacist", "admin", "Receptionist", and "Doctor". The "pharmacist" option is currently selected.
- Login**: A button located below the input fields.

Front Page logged in as admin



Patient

Patient Registration

Employee Registration

Patient No **PS009**

Patient Name

PhoneNo

Address

Save

Update

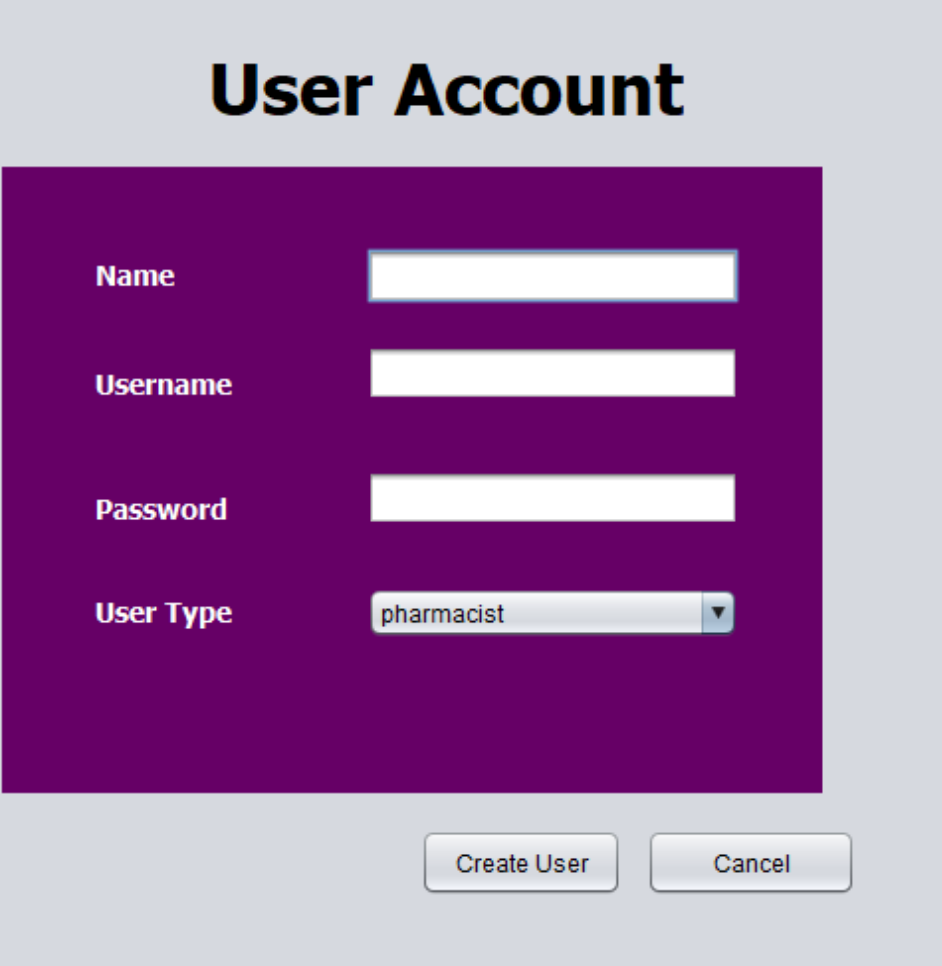
Delete

Clear

Exit

Patient No	Patient Name	Phone	Address
PS002	vasantha	12312312	jp nagar
PS003	lalitha	9900513604	jayanagar
PS004	Venkat	821232322	Jayanthi Gardens J...
PS007	sandhya	9945350342	jp nagar bangalore
PS008	muruga	1232312	werwer

User Creation Page



A screenshot of a web application window titled "User Creation Page". The window has a standard title bar with a small icon on the left and minimize, maximize, and close buttons on the right. The main content area has a light gray background. At the top, the text "User Account" is displayed in a large, bold, black font. Below this, there is a dark purple rectangular box containing four form fields. The first three are text inputs labeled "Name", "Username", and "Password" in white text. The fourth is a dropdown menu labeled "User Type" in white text, with "pharmacist" selected and a small downward arrow on the right. At the bottom of the purple box, there are two buttons: "Create User" and "Cancel", both with a light gray gradient and rounded corners.

Name	<input type="text"/>
Username	<input type="text"/>
Password	<input type="password"/>
User Type	<input type="text" value="pharmacist"/>

Doctor Registration

Doctor Registration

Doctor Registration

Doctor No

DS010

Doctor Name

Specialization

Qualification

Consultation Fees

Email

Room

0

Save

Update

Delete

Clear

Exit

Doctor No	Name	Specialization	Qualification	Fee	Email	Room
DS009	Bose	Oncology Surgeon	MBBS,MD	1000	bose@gmail.com	21

Create New Appointment

Create New Appointment

Channel

Appointment No **CH013**

Doctor Name

Patient Name

Room No

Appointment Date

Appointment No	Doctor Name	Patient Name	Room No	Appointment Date
CH008	DS009	Venkat	123	2021-07-23
CH009	DS009	surya	32	2021-07-23
CH010	DS008	muruga	32	2021-06-11
CH011	DS005	Venkat	23	2021-06-09
CH012	DS001	vasantha	12	2021-06-09

Create Prescription

Prescription

Prescription ID

PC008

Appointment ID

Doctor Name

DS001

Disease Type

Description


PrescriptionID	Appointment ID	DoctorName	DiseaseType	Description
PC001	CH010	Sunder	cold	cough
PC002	CH008	Bose	covid	headache cold
PC003	CH009	Bose	fever	132123123
PC004	CH011	Sunder	acidity	stomach upset
PC005	CH012	DS001	heart attack	breathlessness
PC006	CH009	Bose	123	2213
PC007	CH009	DS009	stomach problem	headache,fever
PC008	CH009	Bose	Cancer	Tamoxifen/Letrozole
PC009	CH013	DS001	Fever	Fever,cough and c...

Save

Update

Close

View Prescription



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View Prescription

Prescription ID	Appointment ...	Doctor Name	Disease Type	Description
PC001	CH010	Sunder	cold	cough
PC002	CH008	Bose	covid	headache cold
PC003	CH009	Bose	fever	132123123
PC004	CH011	Sunder	acidity	stomach ups...
PC005	CH012	DS001	heart attack	breathlessness
PC006	CH009	Bose	123	2213

Inventory

Cancel

Create New Drug

Create Drug

Channel

Item ID

DR005

Item Name

Description

Sell Price

Buy Price

Qty

Save

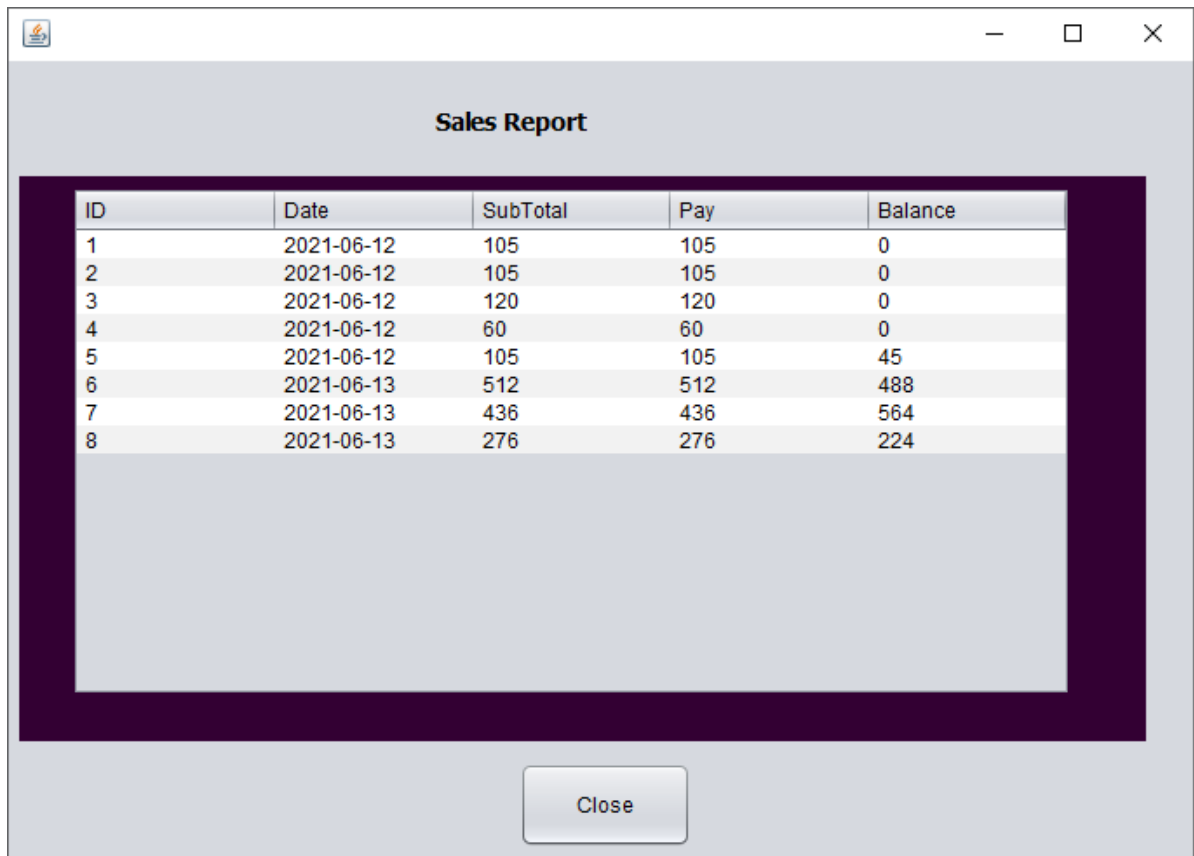
Update

Delete

Clear

Item ID	Item Name	Description	Sell price	Buy price	Qty
DR001	Pandol	for acidity	12	10	964
DR002	Dolo 650	fever, headache	15	10	455
DR003	vicks	cough	100	95	100
DR004	Tamoxifen	Post cancer m...	40	35	60

Sales Report for Drugs

A screenshot of a software window titled "Sales Report". The window has a standard Windows-style title bar with a minimize button, a maximize button, and a close button. The main content area is light gray and contains a table with 5 columns: ID, Date, SubTotal, Pay, and Balance. The table has 8 rows of data. The table is framed by a thick dark purple border. Below the table, there is a large empty gray rectangular area. At the bottom center of the window, there is a "Close" button.

ID	Date	SubTotal	Pay	Balance
1	2021-06-12	105	105	0
2	2021-06-12	105	105	0
3	2021-06-12	120	120	0
4	2021-06-12	60	60	0
5	2021-06-12	105	105	45
6	2021-06-13	512	512	488
7	2021-06-13	436	436	564
8	2021-06-13	276	276	224

Close

Sales Inventory for Drugs

Conclusion

The project Health Care Management System is for computerizing the working for a simple multispecialty healthcare system. It takes care of all the requirements of a hospital and is capable to provide easy and effective storage of information related to patients coming to the hospital. It automates the patient, doctor registration, generates prescription automatically for patient and doctor. It also provides sales report for the pharmacist associated in the same system.