Bilkent University

Department of Computer Engineering

CS 353 Term Project

Design Report

Hospital Database Management System

Section 3

Group 29

Project Group Members

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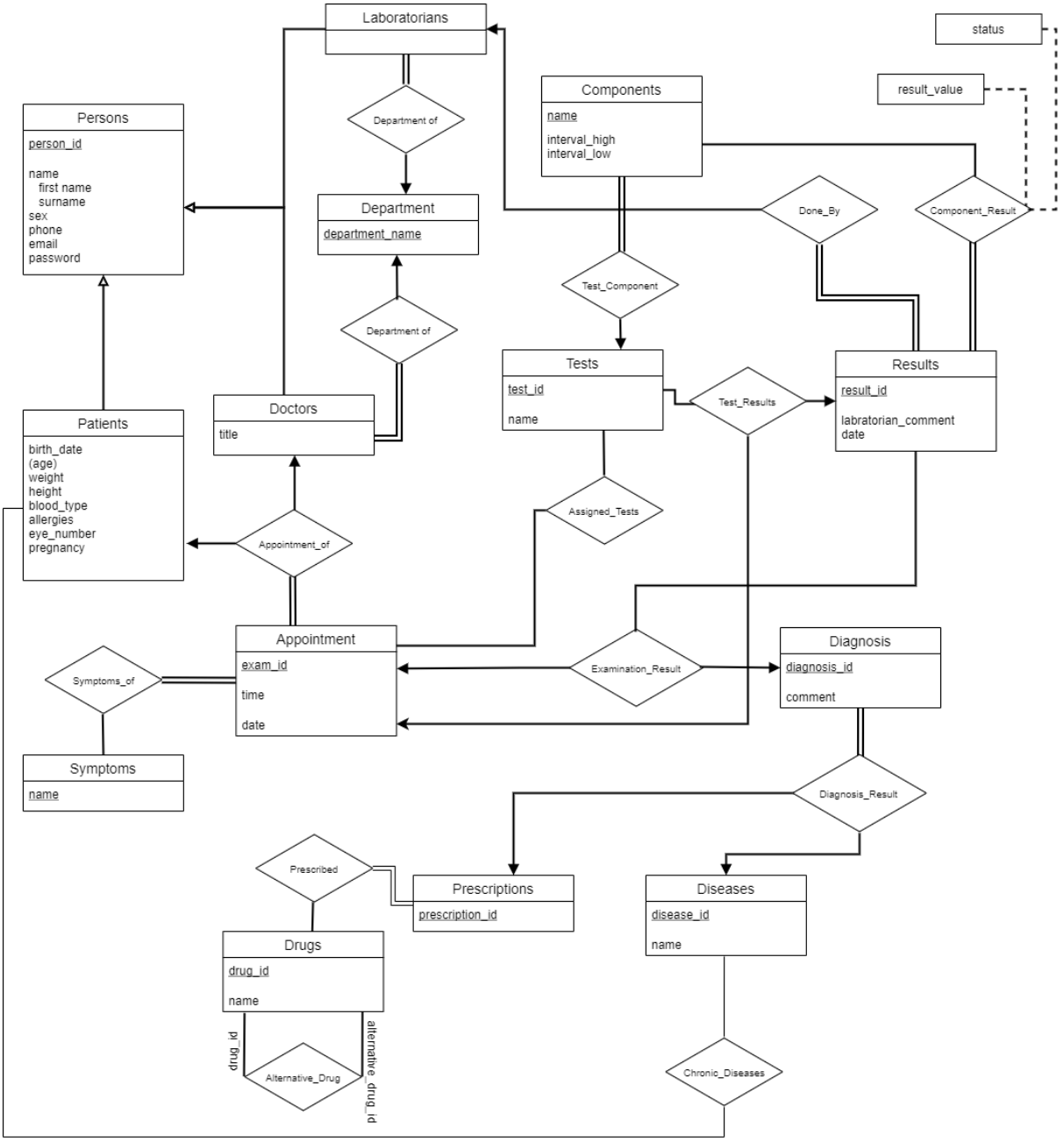
1. Revised ER Diagram



2. Relational Schemas

2.1 Persons

Relational Model
persons(<u>person_id</u>, first name, last name, sex, phone, email, password)

Candidate Keys
{ (person_id) }

Table Definition
CREATE TABLE persons(

person_id	char(11) PRIMARY KEY,
first_name	varchar(20),
last_name	varchar(20),
sex	varchar(20),
phone	varchar(50),
email	varchar(50),
password	varchar(50) NOT NULL);

2.2 Patients

Relational Model
patients(<u>person_id</u>, birth_date, weight, height, blood_type, allergies, eye_number, pregnancy)

Candidate Keys
{ (person_id) }

Table Definition
CREATE TABLE patients(

person_id	char(11) PRIMARY KEY,
birth_date	date NOT NULL,
weight	numeric(3,2),
height	numeric(3,2),
blood type	varchar(10),
allergies	varchar(100)
eye_number	numeric(2,2),
pregnancy	bit(0),
FOREIGN KEY (person_id) references Persons);	

2.3 Doctors

Relational Model
doctors(person_id, title)

Candidate Keys
{ (person_id) }

Table Definition
```
CREATE TABLE doctors(
        person_id               char(11) PRIMARY KEY,
        title                   varchar(20) NOT NULL,
        FOREIGN KEY (person_id) references Persons);
```

2.4 Appointment

Relational Model

appointment(exam_id, time, date)

Candidate Keys
{ (exam_id) }

Table Definition
```
CREATE TABLE appointment(
        exam_id char(11) PRIMARY KEY,
        time time NOT NULL,
        date date NOT NULL);
```

2.5 Symptoms

Relational Model
symptoms(name)

Candidate Keys
{ (name) }

Table Definition
CREATE TABLE symptoms(
name char(15) PRIMARY KEY);

2.6 Drugs

Relational Model

drugs(drug_id, name)

Candidate Keys
{ (drug_id) }

Table Definition
CREATE TABLE drugs(
drug_id char(11) PRIMARY KEY
name varchar(20));

2.7 Prescriptions

Relational Model

prescriptions(prescription_id)

Candidate Keys
{ (prescription_id) }

Table Definition
CREATE TABLE prescriptions(
prescription_id char(11) PRIMARY KEY);

2.8 Diseases

Relational Model
diseases(disease_id, name)

Candidate Keys
{ (disease_id) }

Table Definition
CREATE TABLE diseases(
disease_id char(11) PRIMARY KEY
name varchar(20));

2.9 Diagnosis

Relational Model

diagnosis(diagnosis_id, comment) nerdesiin nerde nerde nerdeee

Candidate Keys

{ (diagnosis_id) }

Table Definition

CREATE TABLE diseases(

disease_id char(11) PRIMARY KEY
name varchar(20));

2.10 Results

Relational Model

results(result_id, laboratorian_comment, date)

Candidate Keys

{ (result_id) }

Table Definition

CREATE TABLE diseases(

result_id char(11) PRIMARY KEY
laboratorian_comment varchar(20)
date date NOT NULL);

2.11 Tests

Relational Model

tests(test_id, name)

Candidate Keys

{ (test_id) }

Table Definition

CREATE TABLE tests(

test_id char(11) PRIMARY KEY
name varchar(20));

2.12 Components

Relational Model

components(name, interval_low, interval_high)

Candidate Keys

{ (name) }

Table Definition

CREATE TABLE components(

name varchar(20) PRIMARY KEY
interval_low numeric(2,2)
interval_ high numeric(2,2));

2.13 Department

Relational Model

department(department_name)

Candidate Keys

{ (department_name) }

Table Definition

CREATE TABLE department(

department_name varchar(20) PRIMARY KEY);

2.14 Laboratorians

Relational Model

laboratorians(person_id)

Candidate Keys

{ (person_id) }

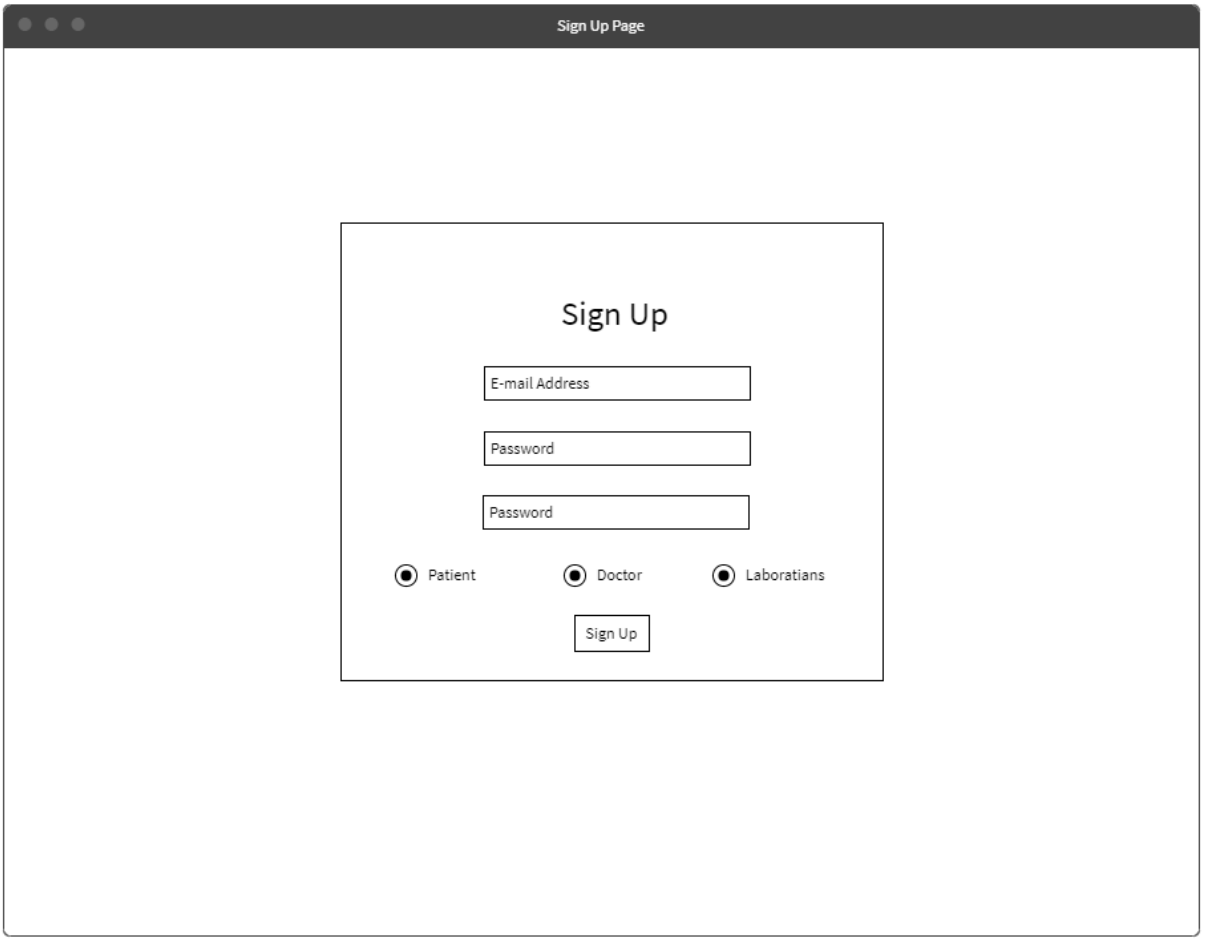
Table Definition

CREATE TABLE department(

person_id char(11) PRIMARY KEY);

3. User Interface Design

3.1 Register Page



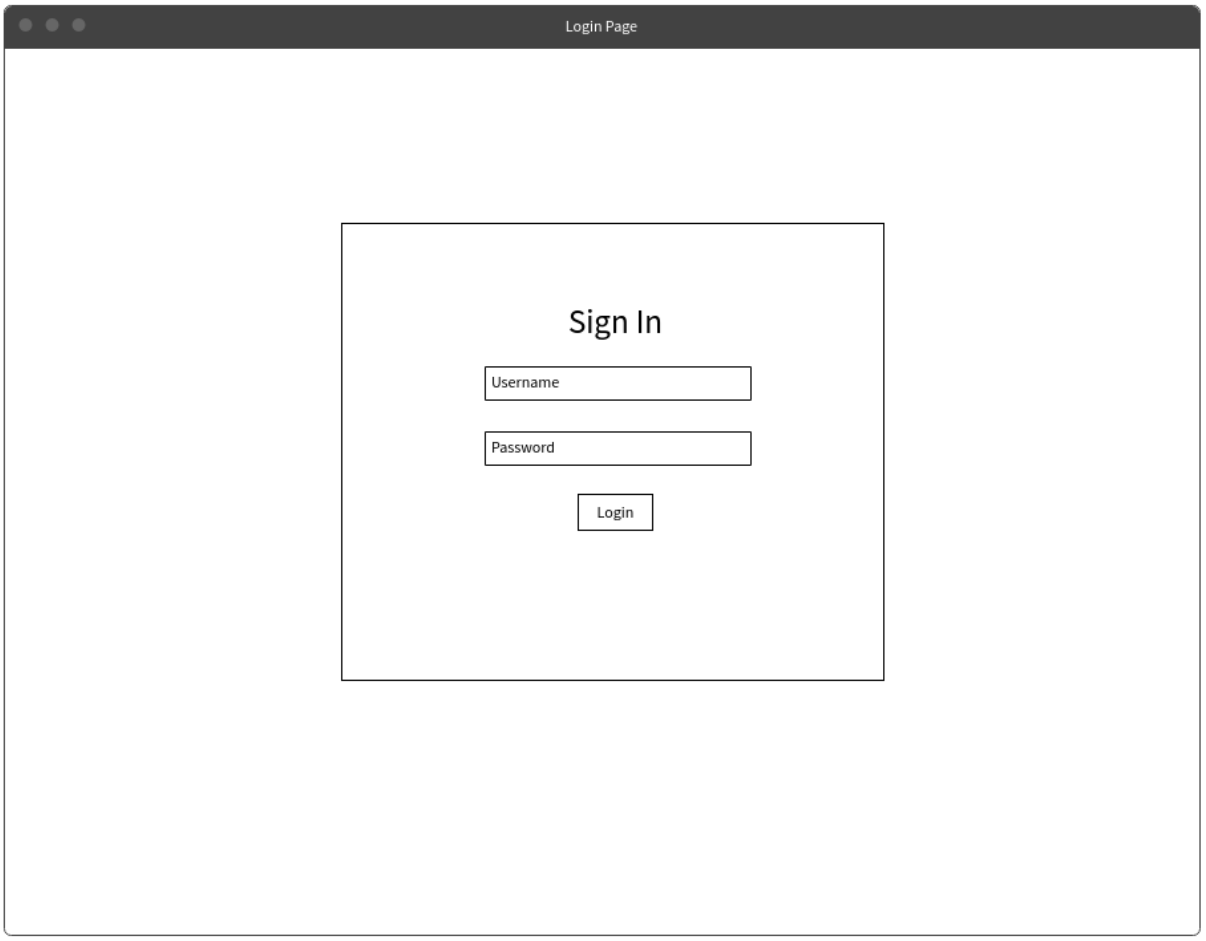
Register page:

INSERT INTO persons VALUES (null, null, null, null, input_email, input_password);

int id = select person_id from Persons where email = input_email

if signed up user is a doctor:
    INSERT INTO Doctors VALUES (id, input_title, null);
if signed up user is a laboratorian:
    INSERT INTO Laboratorians values (id, null);
if signed up user is a patient:
    INSERT INTO Patients VALUES (id, null, null, null, null, null, null, null);

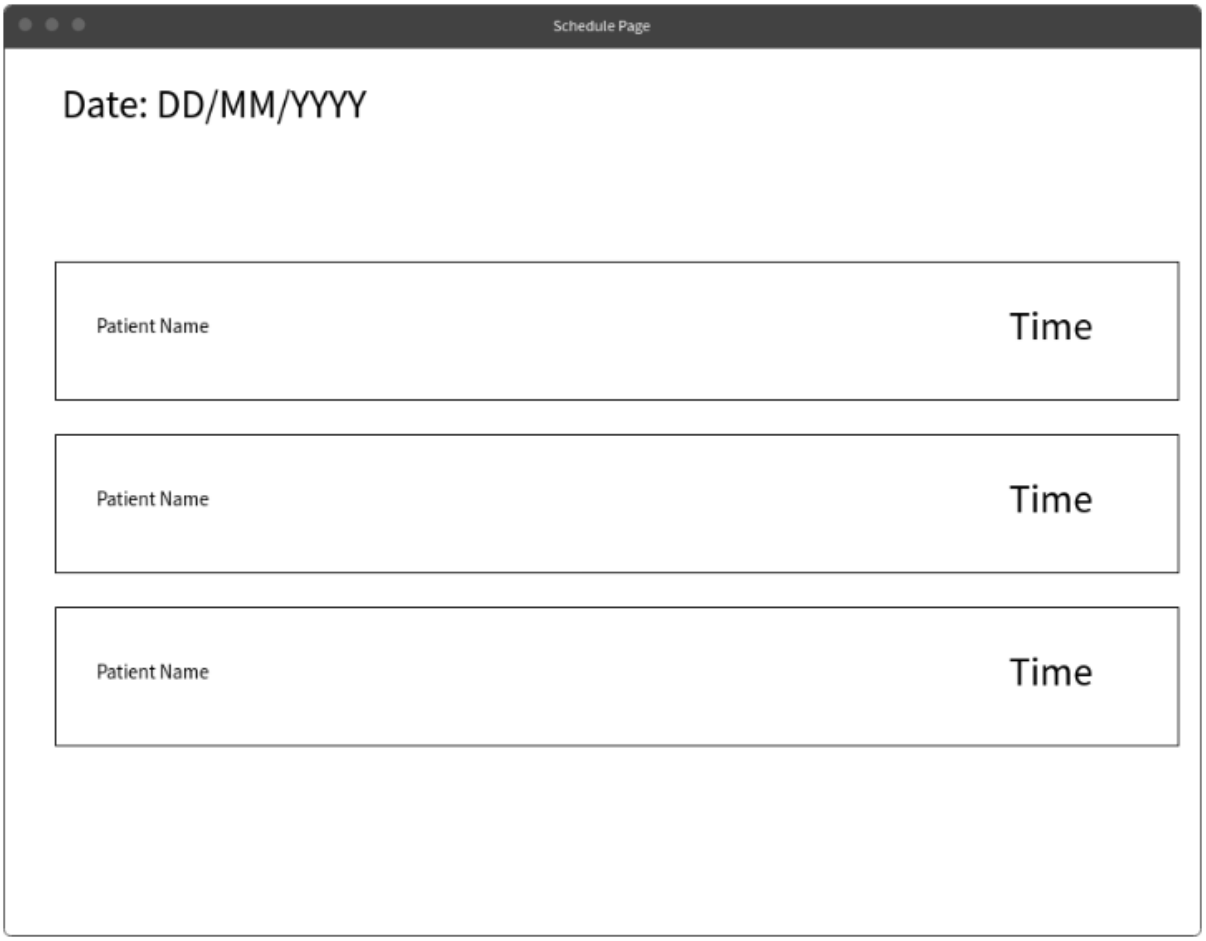
3.2 Login Page



Login page:

SELECT email FROM Persons WHERE email = input_email AND password = input_pasword;

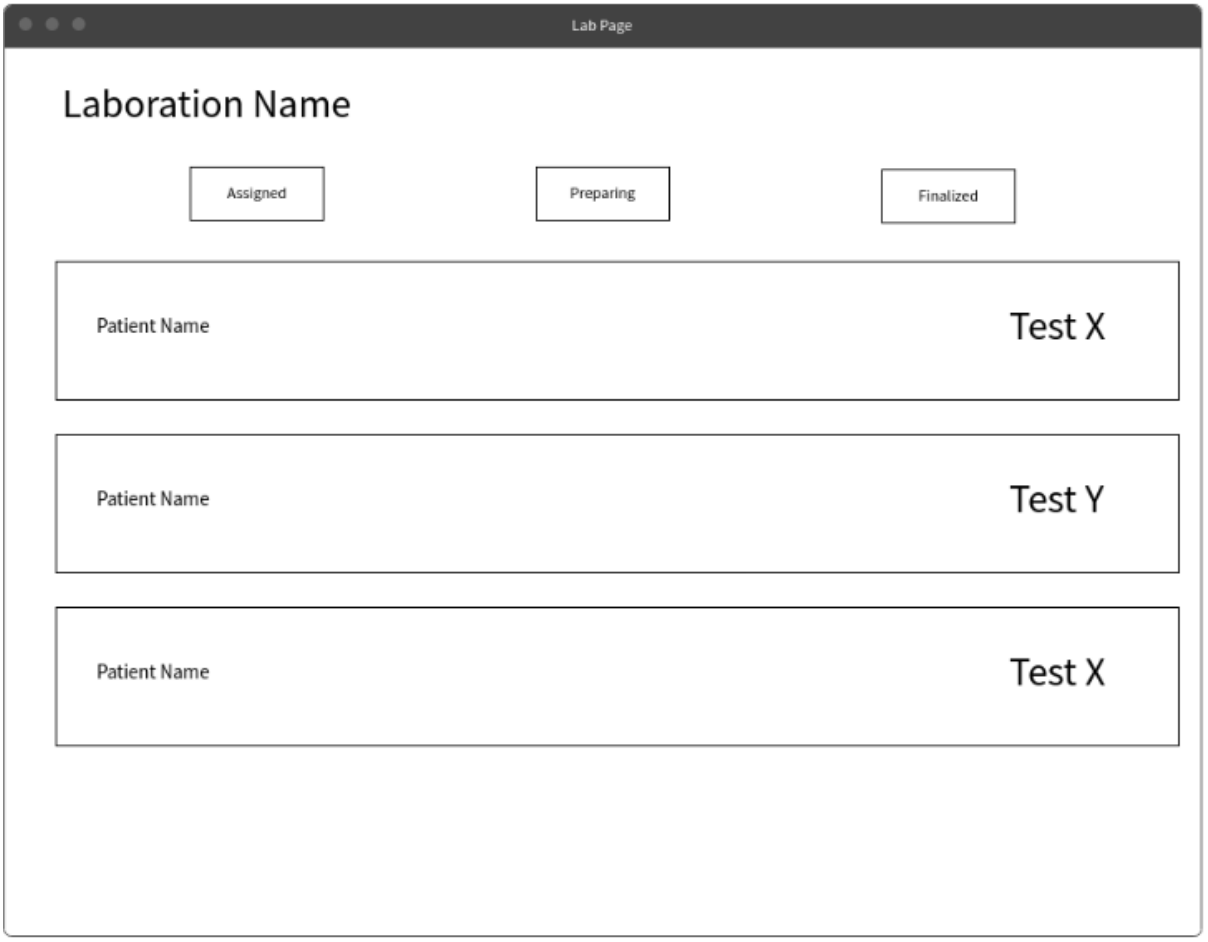
3.3 Doctors' Page



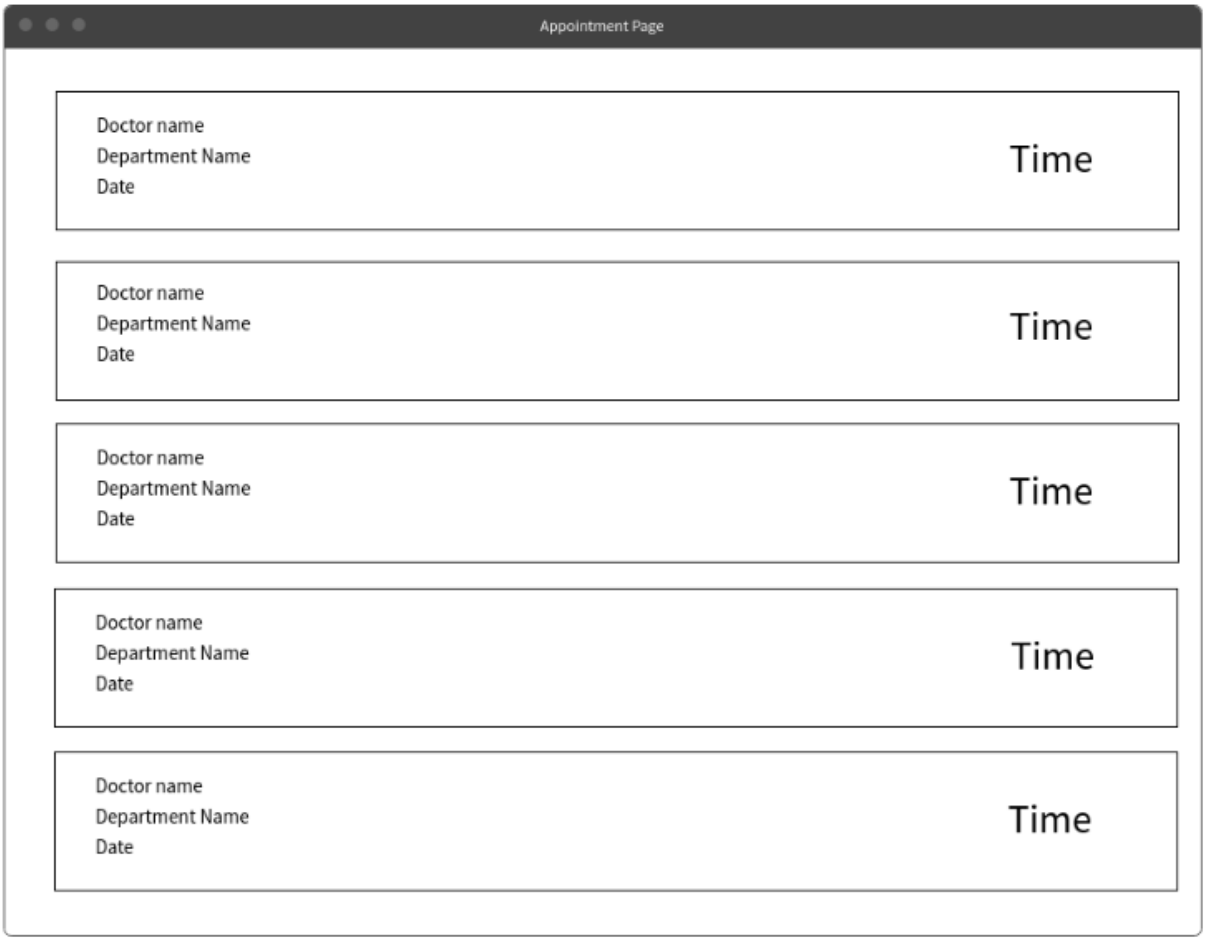
Doctors page:

SELECT DAY(date) FROM Appointment as a WHERE MONTH(date) = selected_month AND selected_department = loggedin_user.department;

3.4 Laboratians' Page



3.5 Appointment Page



Appointment page:

SELECT DAY(date) FROM Appointment as a WHERE MONTH(date) = selected_month AND selected_department in (SELECT department FROM Appointment_of as aof WHERE aof.exam_id = a.exam_id);