NORTH SOUTH UNIVERSITY

SPRING 2023

DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

Project Report

Course Code: CSE299
Course Title: Junior Design
Section: 12
Project Name:

DIGITAL PRESCRIPTION WITH NFC CARD IDENTIFICATION

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Digital Prescription with NFC Card Identification

Introduction:

The digital prescription system using NFC (Near Field Communication) card identification is an innovation in the healthcare industry that aims to simplify the process of dispensing medications to patients. This system uses a small electronic card containing patient information, including their prescription history and medication details. Patients who visit a doctor, pharmacy, or medical facility can tap their NFC card on a reader to access their medication records and receive the appropriate prescriptions. The technology can have several advantages over traditional paper-based systems, including improved accuracy, efficiency, and patient safety. NFC card identification can also enhance the security and privacy of patient information by allowing only authorized personnel to access prescription records. Thus this method eliminates the need for paper-based prescriptions. In a developing country like Bangladesh, where the health sector is one of the major sectors, this technology can improve healthcare outcomes in Bangladesh by streamlining prescription management and improving patient safety.

Problem Statement:

According to a research article, around 71% of the people in Bangladesh use prescriptions to buy medicines from pharmacies. While consulting a doctor, an individual has to carry previous prescriptions so that the doctor can understand the patient's prior medical history and prescribe according to it. Nowadays, the real problem is that prescriptions are challenging to track, leading to difficulties in monitoring prescription histories and medication use over time.

The problem we strive to solve is the inefficiency and errors associated with traditional paper-based prescription systems in healthcare facilities. These systems continually lead to challenges such as unreadable handwriting, misplaced or lost prescriptions, and difficulty in tracking and managing patient medication history.

Our solution will fix this problem, and the patients will not have to search for prescriptions everywhere. Instead, their prescriptions will be stored in a small NFC card which is so easy to carry and use.

We aim to enhance the prescription workflow, secure patient safety, and encourage healthcare providers to provide better and more precise care by leveraging the blessings of digital technology and NFC card identification.

Flowchart:

The flowchart excluding the hardware part is given below:

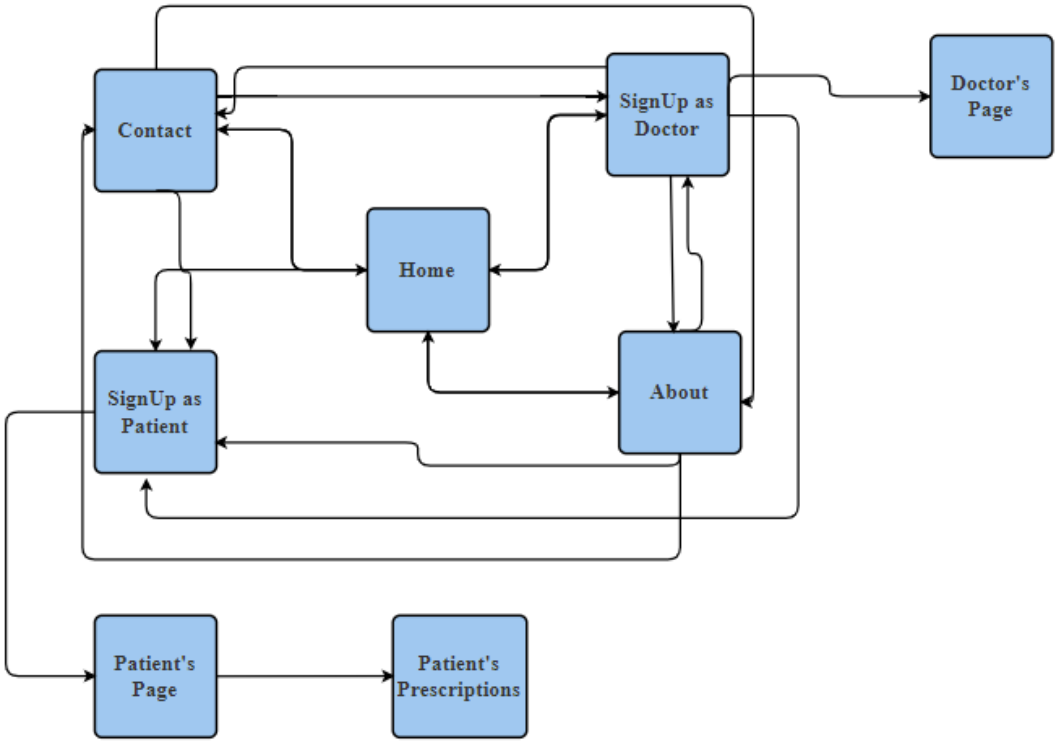

Fig: The flowchart of the project

Project Description:

1. We start everything from the homepage. On the homepage, in the navbar section, there are some options such as Home, About, Contact, SignUp as Doctor, SignUp as Patient, and log in. The homepage section offers options to buy NFC cards along with the reader.

2. In the About section, we will find the description of the NFC card and its benefits.
3. In the Contact section, we will find a contact number and an email to contact with us. Also, there we will find a form where we can leave a message with the name and email.
4. In the SignUp as a Doctor section, we will find a form where we have to type our first name, last name, email, and password. There is also a checkbox where we have to click if we are okay with the terms and conditions.
    (a) After selecting register as a doctor, it will take to the doctor's page. In the doctor's page, a doctor has to enter his full name, Educational Background, Email, Phone Number, Chamber timings, Visiting fees, and appointment details.
    (b) If someone selects register as a patient, it will take him/her to the patient's page. On the patient's page, the patient has to enter the full name, email, phone number, age, weight, height, blood group, medical history, medication details, health condition, and most importantly, has to upload the prescriptions. The patient information will store in Django.

Technologies Used:

Software part:
- HTML
- CSS
- BOOTSTRAP
- PYTHON
- DJANGO

Hardware part:
- NFC Reader and Writer
- NFC Card

Cost Analysis:

NFC card reader: 1210 BDT
NFC card: 33 BDT
Domain and hosting cost: 1800 BDT/Month

So, the cost we will have to bear is the cost of website maintenance and hardware components like NFC card reader and write and the NFC card itself where we will have to store the information.

Conclusion:

The Digital Prescription with NFC card identification project aims to provide a secure and convenient way for doctors to prescribe medication and for patients to receive medication. Here, the technology will ease the hassle of carrying the prescriptions every time patients visit the doctor. Moreover, doctors will get out of the paper-based prescription system. There will be every prior and present history of the patient. Hospitals will track better patient information and doctors' notes in real-time. It is one of the asset-tracking strategies in the healthcare sector and can bring a revolution in the health sector.

GitHub Link:
https://github.com/RafiaTamanna/Digital-Prescription-with-NFC-Card