Semester IV
Software Engineering Project

Sayan Ghosh 20CS1A3141
Sreenidhi P 20CS1K3176

Topic: Medicine Database and Automated Prescription Printing

Introduction

Synopsis:

In this modern day and age the only thing done in the primitive way is writing prescriptions by practitioners. Most of the time the prescription will be written by them using pen and paper in a hurry, resulting in oftentimes the writing being illegible. The doctors are unable to access their patient's previous records too for future consultations. These nuances cause the patient or the pharmacist to misinterpret the prescription or the doctor to misdiagnose the patient. The prescriptions, by virtue of being a physical entity, are vulnerable to the forces of nature. The prescription may be damaged, lost, or in any other way be rendered useless. The practitioner is also required to remember the correct name and dosage of all the medicines without any spelling errors, with the overwhelming amount of medicines present in the modern world, this becomes increasingly impossible. Mundane and automatable tasks like writing prescriptions, remembering all the medicine's names and dosages should thus be delegated to software counterparts. This helps the practitioner to easily look up the medicines and procedures and prescribe the same. The patients too can easily re-issue prescriptions and keep a soft-copy backup with them. Thus the digitization and automation of prescription processing is the only logical way forward. MD.APP solves that requirement by computerizing the prescription composing and printing procedure, aided by a gigantic database of all the medicines and medical procedures present. The software backs up the prescription and patient details as well, so the data is never lost. The prescribing doctor can thus, in future, search and access their past prescriptions. This also helps the clinic management to monitor all the doctor's prescriptions. Records are immutable and cannot be changed once prescribed.

Problem Definition:

The software enables efficient cataloguing of prescriptions by a doctor by providing them a platform to choose from all the medicines, their doses, write personal advice, etc. The personalized prescription can then be printed and given to the patient. The patient details are also recorded in the prescription and stored for easy future access and monitoring.

Module Description:

1. **Authentication Module –** The doctor needs to login to access his patient records, or can use the application in guest mode, where past records won't be visible.

2. **Prescription Editor –** Edit all the fields of the prescription, e.g. patient details, medicines prescribed, dosage, miscellaneous details, doctor's advice, etc.

3. **Medicine and Procedure Search –** Search from a wide database of medicines and medical procedures to be advised/prescribed to the patient.

4. **Printing Module –** Print the finished prescription through a connected printer, or save it as a Portable Document Format (pdf) file.

5. **Patient History –** Show previous prescriptions to patients, search through name, age, etc.

System Study

Existing system:

In the existing system the doctors write the prescription manually. This may be hard to understand for the patients and also the doctor needs to remember the medicine's name and the dosages for each patient when prescribed. Any misinterpretation by the patient or pharmacy may lead to catastrophic effects on the patient's health. Some solutions exist but are highly specific and thus are restricted to their particular organizations and are not widespread outside the organization or the general norm.

Problems in existing system:

1. Hard to understand the manually written prescription.
2. The patients may unknowingly get some other dosage of the medicine due to misreading.
3. Doctors may face difficulty in remembering the names of the medicine and the dosage.
4. Manually written prescriptions may be lost but it can be saved in the software.
5. Preexisting specialised solutions are not applicable to the majority of people and thus cannot be used.

Proposed system:

The proposed solution digitizes the prescription composing and printing process, making it resilient to misinterpretation and physical damage. The prescription backup along with the patient details ensures the doctor can look up the previous medical history of their patients when required without any guesswork required. The software is generic and customisable enough so that any practitioner can use it without having to re-write the software for their organization.

Advantages over preexisting system:

1. Doctors can easily enter the details of the patient and the medicine prescribed to them by accessing the database in the software.
2. This prescription can be saved in the software and It is easy to access the details when required.
3. Reduces paperwork and saves time.
4. All the details are secure as there is a login module.
5. The software is usable by any doctor / organization.