**UNIFIED MEDICAL DATA**

Software Design Description

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# Introduction

## Purpose

This document would enable us to understand all the requirements of the soft wares. It would define both the functional and non-functional requirements of the software.

## Scope

Unified Medical Data

Will:

1. Store the medical data online
2. Allows the concerned doctors to look into the report at the patients will.
3. Let the concerned doctors get their hands on the reports whenever needed irrespective of distance, place or other factors.
4. Will store the prescription as well as the medication online.

Will not:

1. Let the clients interact with the doctor, i.e. consulting
2. Only the details of the patients along with prescription will be stored. For consulting, you still have to go to a doctor physically

This product will let you store your details online. As a result if you want to shift to a new hospital under any circumstances, you don’t have to start all over again. This software will let you transfer easily all your medical information to the new hospital making things easier for the new doctors. It also lets you post about your personal details like allergy to a particular medicine or any other details. The main objective of this software is to make things easier for the doctors as well as the patients. It lets the user upload basic details and can be shared between hospitals and doctors at the patients will. For example if a patient is changed from a hospital to another the details could easily be transferred within, thus making things easier and quicker. Through UMD the privacy of the patient is preserved. The details of the patient will not be transferred or seen by another doctor without the patient’s consent. The sensitive details are preserved.

## Product / System Overview

UMD abbreviated as Unified Medical Data is an online medical data storing system. This stores the data input by the doctors and some basic details entered by the patient himself. This is in no way related with consulting a doctor online. This stores the information as well as lets to transfer it when and where required, but only with the patients consent.

## User Characteristics

Anyone with a basic literature can use this software as it is simple and easy to use. He should have a basic technical knowledge, like say using a computer or mobile phone and browsing the internet. He should be familiar with basic medical details like blood pressure, blood group etc.

## Definitions, Acronyms & Abbreviations

UMD: Unified Medical Data

GDPR: General Data Protection Regulation

## Constraints

* GDPR Policy
* Acceptance by hospitals
* Lack of awareness of patients
* Data security Issues

# Functional Requirements

## Manage User accounts

* Admins will be able to add or remove hospitals
* Hospitals can update a doctor’s details or add a new doctor to their hospital.
* Patients can manage their accounts.

## View User Accounts

* Doctors and patients can view medical records if they have the proper access rights.
* Doctors will be able to update patient’s current health conditions and medical records.

## Manage Permission

* Users will be able to view existing permissions.
* Patients will be able to grant or revoke access to other users.

# Non-Functional Requirements

The software should have high performance and low failure rates. These systems should solely be used for operation of the software, in order to maximize performance and security. All database queries and data receiving/transmitting should be done using higher security transmission.

## Safety Requirements

The information must be displayed visibly and with as much clarity for users and doctors, in order to protect the patient's private and confidential medical information. All offline and online access will be monitored, for transparency purposes, and in order to reduce abuse and unauthorized access of the system and to keep the patients private medical and social security information out of the wrong hands. Before any user can access any account, they shall be required to input an email id or an ID number, and a password. Each password shall be required to be between 8-12 characters in length and shall be required to contain at least one capital letter, one number, and one special character.

## Performance Requirements

It is important that rules and regulations for the completion of medical records are developed and approved by medical staff and adhered to by all. Recommend action when problems arise in relation to medical records and the medical record service. UMD would be used by all collaborating individuals and hospitals effectively. UMD is able to handle multiple concurrent users. This enable the doctors to review health details of an unconscious individual .All database queries and data receiving/transmitting is done using higher security transmission.

## Security Requirements

* Data will be stored in encrypted format using AES256 algorithm. This will ensure that even if the security gets breached the data itself is secure.
* Users will be notified when someone access their data.

## Software System Attributes

* Usability

The patient will have one medical record with all admission fields in the one record. UMD holds the collection of patient identification data and verification of an existing medical record and these data’s can be accessed from person to person.

* Reliability

UMD would be used by all collaborating individuals and hospitals effectively. There is no downtime and allows concurrent users.

* Availability

Data of any particular individual can be accessed by that individual from any country. It can also be accessed by doctors from different hospitals. UMD is readily available for continuing patient care, medico-legal requirements and medical research.

* Maintainability

UMD allow review of medical record by doctors to ensure that they are accurate that medical staff complete all the medical records of patients under their care for each discharged patient within a specified period of time.

# External Interface Requirements

## Hardware Interfaces

* Any device with reliable internet connectivity
* Must support wireless or wired communication

## Software Interfaces

* Android 4.3 or higher

All other android versions below 4.3 are obsolete and are lacking major security patches.

* Windows 7 or higher

Microsoft officially ended support for all windows OS below windows 7

* iOS 10 or higher

95% of all iOS devices are running on iOS 11 or iOS 12

## Communication Interfaces

The devices we use must have access to internet. This is because the data transfer takes place over the internet.

# Acceptance Criteria

Users have control over who can view their data. They will also be able to restrict the access for the personnel they wish. Doctors will be having access to a patents basic medical data and can access further if a patients grants the permission. Doctor can then update the diagnostic report and other details on the patients account. Hospitals would be able to add new doctors or manage existing doctors.