

CONCORDIA UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING
SOEN 6471: ADVANCED SOFTWARE ARCHITECTURES: SUMMER 2020
TEAM E

TECHNICAL DEFINITION

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Repository Details <https://github.com/prtknrla/SOEN-6471>

Introduction

In product development and process optimization, a requirement is a singular documented physical or functional need that a particular design, product or process aims to satisfy. A set of requirements is used as inputs into the design stages of product development. Requirements are also an important input into the verification process, since tests should trace back to specific requirements.

Project Description

A General clinic appointment scheduler which provides a platform for user to avail health services such as

- Scheduling appointments with a General medical practitioner
- Consistent Record-keeping of patients health records
- Providing secure, transparent and accessible environment for users to maintain patient's records
- Reduction of the waiting time for the complete scheduling process

User Characteristics

The system will be used by the users. The administrators, doctors, nurses and patients will be the main users. The system is also designed to be user-friendly, so the user can easily learn about the system. It uses a Graphical User Interface (GUI) and is readily accessible through any device having browsing capability.

Nurses Nurses in wards will use the application to check their patient list. Based on that they will assist the doctors in the maintenance of records for patients on the application.

Administrators Every administrator has basic computer training. They are responsible for all of the scheduling and also for updating the day/night employee shifts in the application. They will register the doctors and staff and create profiles on the application.

Doctors Based on the appointment, the doctors will handle the patients. Update, delete or add any record or

ask the assigned staff to do the same.

Patients Users can register themselves as patients and create their profile. They have the option to upload their health related data and delete health related Schedule an appointment for a particular doctor

Listing out the requirements for iCare

Requirement 1:

- **ID** : FR-1
- **VERSION** : 1.0
- **TYPE** : Functional Requirement
- **TEXT** : Security Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : When the patient tries to use the iCare application for the first time, registration is required and based on that, a profile is formed.

Requirement 2:

- **ID** : FR-2
- **VERSION** : 1.0
- **TYPE** : Functional Requirement
- **TEXT** : Utility Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : Patients should be able to schedule appointments and upload or download his records.

Requirement 3:

- **ID** : FR-3
- **VERSION** : 1.0
- **TYPE** : Functional Requirement
- **TEXT** : Operability Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : Admins should be able to create Doctors and staff profiles, modify them and set the schedules for them.

Requirement 4:

- **ID** : NFR-4
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : User Rights Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : Nurse should be able to view all information in the system. Patients information/ records need to be approved by the doctor before being added by Nurses to the patient's profile. Administrators shall be able to view and modify all information in the system like scheduling for all staff, and any modification (insert, delete, update) of any record. Doctors can view any patient record and modify it based on the situation.

Requirement 5:

- **ID** : NFR-5
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : Privacy Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : The patient's data is visible only to the concerned people (Doctor,Nurses, Admin,patient). We have defined 4 views (Patient,Nurse, doctors, Admin), so the patient profile is only visible to people handling the patient's file and people outside the organization won't be able to access patients records.

Requirement 6:

- **ID** : FR-6
- **VERSION** : 1.0
- **TYPE** : Functional Requirement
- **TEXT** : Notifiability Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : Once the user schedules the appointment using application, user must receive an email notification to his registered email address with the appointment details.

Requirement 7:

- **ID** : FR-7
- **VERSION** : 1.0
- **TYPE** : Functional Requirement
- **TEXT** : Notifiability Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : The system should be able to remind the users about their upcoming appointments.

Requirement 8:

- **ID** : NFR-8
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : Accessibility Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : User can access the iCare application from any browser, through any device.

Requirement 9:

- **ID** : NFR-9
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : Security Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : UserID and password are required for any user to access their profile.

Requirement 10:

- **ID** : NFR-10
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : Availability Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : System shall remain available all the time. Only during monthly maintenance, the system would be closed for 2 hours

Requirement 11:

- **ID** : NFR-11
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : Maintainability Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : iCare application will have the capability to back-up data in a server. Errors occurred while application use will be logged for rectification.

Requirement 12:

- **ID** : NFR-12
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : Performance Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : Response time of the system should be within 3 seconds for any query by users. The capacity the system supports is 1000 people at a time.

Requirement 13:

- **ID** : NFR-13
- **VERSION** : 1.0
- **TYPE** : Non-Functional Requirement
- **TEXT** : Usability Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : Learn-ability for all users should be really fast. All major tasks can be easily performed using a single page efficiently.

Requirement 14:

- **ID** : NFR-14
- **VERSION** : 1.0
- **TYPE** : Functional Requirement
- **TEXT** : Data consistency Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : If the user gives the user name and password ,then he must be able to login to the application

Requirement 15:

- **ID** : FR-15
- **VERSION** : 1.0
- **TYPE** : Functional Requirement
- **TEXT** : Operability Requirement
- **DIFFICULTY** : Nominal
- **DESCRIPTION** : User can cancel his appointment up until 24 hours before the scheduled appointment time.

References

- [1] Florian Schneider and Brian Berenbach. A literature survey on international standards for systems requirements engineering. *Procedia Computer Science*, 16:796–805, 2013.
- [2] Debby Selvyanti and Yoanes Bandung. The requirements engineering framework based on iso 29148: 2011 and multi-view modeling framework. In *2017 International Conference on Information Technology Systems and Innovation (ICITSI)*, pages 128–133. IEEE, 2017.