HEALTHCARE PLATFORM : HEALTHY BUFFS

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Title of the Project: HealthyBuffs

Project Summary: HealthyBuffs is a healthcare management platform exclusively for students, faculties and other members of CU Boulder where people can locate doctors, pharmacists, pathologists, consultants and book appointments. This platform can also be used for looking up medicines availability in pharmacies. The portal also manages medical records/history of each patient so that it is easier for doctors to make their diagnosis and pharmacists can suggest medicines to patients.

Actors: Patients, Doctors, Pharmacists, Pathologies, Insurance Companies, Admin

PROJECT REQUIREMENTS

Business Requirements				
ID	**Requirements**	**Topic Area**	**Actor**	**Priority**
BR001	Patients' login should be using CU IdentityKey	Authentication	Patients	High
BR002	All doctors, pharmacists and pathologists should have names and address	Authentication	Doctors, Pharmacists, Pathologists	High
BR003	A patient can make/edit only a single appointment to a particular doctor until that appointment time is passed	Scheduling	Patient	Medium
BR004	The appointment duration can be 30 minutes	Scheduling	Patient, Doctor	Medium
BR005	Only Admin can sign up doctors/ pharmacists/pathologists after verification	User Account	Admin	High
BR006	A user can only view his/her medical history	Documentation	Patients	High
BR007	Insurance company can view only **their** patients' history	Authentication	Insurance Company	High
BR008	Pharmacies and Pathologies can view patients' history only when a doctor/ customer allows	Authentication	Pharmacies, Pathologies	High

User Requirements				
ID	**Requirements**	**Topic Area**	**Actor**	**Priority**
UR001	Patients can search pharmacists and pathologists based on name or location	Lookup	Patient	High
UR002	Patient can search doctors based on specialisation and name or location	Lookup	Patient	High

User Requirements				
UR003	Patients can search for medicines availability in pharmacies based on pharmacies' names, distance	Lookup	Patient	Medium
UR004	Patient can view available time slots to make appointments for a particular doctor	Scheduling	Patient	Medium
UR005	A patient can make an appointment to a doctor in the available time slot	Scheduling	Patient	Medium
UR006	Patient can view his/her past and future appointments	Documentation	Patient	Medium
UR007	Patient can view medical history	Documentation	Patient	High
UR008	Patient can view lab reports directly in the platform	Documentation	Patient	Medium
UR009	Patient can send a small enquiry to a doctor as a chat or a drop message	Enquiry	Patient, Doctor	Low
UR010	Doctors can register with their specialization, qualification, experience and location	User Account	Doctors	High
UR011	Doctors can view appointments for the day/week/month	Scheduling	Doctors	High
UR012	Doctors can cancel appointments made by patients	Scheduling	Doctors	Medium
UR013	Doctors can update patients' medical records	Documentation	Doctors	High
UR014	Doctors can view medicines availability in a pharmacy nearby before prescribing to patients	Lookup	Doctors	Low
UR015	Doctors can reply to patients' query received on the platform	Enquiry	Doctors	Low
UR016	Pharmacies can update their medicines availability	Documentation	Pharmacies	Low
UR017	Pharmacies can lookup patients' medical history and previous medicine purchases before giving them medicines	Lookup	Pharmacies	Medium
UR018	Pharmacies can update patients' medicine purchases	Documentation	Pharmacies	Medium
UR019	Pathologies can view patients' medical history	Lookup	Pathologies	Medium
UR020	Pathologies can upload patients' tests results	Documentation	Pathologies	Medium

User Requirements				
UR021	Admin should first verify doctors, pharmacies and pathologies before signing them up in the system	User Account	Admin	High
UR022	Admin can delete doctors, patients, pharmacies or pathologies	User Account	Admin	High
UR023	Admin can view all the registered users to have a collective view	User Account	Admin	High
UR024	Insurance companies can view patients' medical history	Lookup	Insurance Company	Low

Functional Requirements				
ID	Requirements	Topic Area	Actor	Priority
FR001	System should not allow users to enter the system without proper authentication.	Authentication	Patients	High
FR002	System should alert the pharmacist when the medicine stock gets over	Authentication	Doctors, Pharmacists, Pathologists	High
FR003	A patient cannot be allowed to book an appointment slot of a doctor which is already booked by another patient	Scheduling	Patient	Medium
FR004	System should stop taking appointments from any patients if the doctor has exceeded appointment hours for the day or takes a day off	Scheduling	Patient, Doctor	Medium
FR005	System should notify patients whenever a doctor cancels an appointment due to a personal reason	User Account	Admin	High
FR006	System should notify patients when their medical history is updated	Documentation	Patients	High

Non Functional Requirements				
ID	Requirements	Topic Area	Actor	Priority
NFR01	Medical records must be secured and access control must be maintained	Security	System	High
NFR02	Patient medical history must be available to doctors, pharmacists, pathologies etc. without observable latency (<10 ms)	Authentication	Doctors, Pharmacists, Pathologists	High
NFR03	User account information and password must be stored in a secure manner	Security	System	High

Non Functional Requirements				
NFR04	Patients must be able to schedule an appointment using a calendar at the first page on the dashboard	Usability	Patients	Medium
NFR05	Any data from the database must be returned correctly or not at all. Incorrect data should not be returned at any cost	Reliability	Doctors, Pharmacists, Pathologists, Patients, Admin	High

Data Storage

We will be using MySQL Database Management System to store and retrieve Patients', Doctors', Pharmacists', Pathologies etc. details.

UI Mockup

Orthopaedic

Search Name ▼

Dr. Andrew Jackson
Orthopaedic
1689 Colorado Avenue, 289, Boulder, CO
2018 | Book

Dr. Jon Snow
Orthopaedic
3210 Winterland Street, 235, Boulder, CO
2018 | Book

Dr. Andrew Jackson
1689 Colorado Avenue, 289, Boulder, CO

Today, 22 Feb
2018

Morning	No slots available			
Afternoon	No slots available			
Evening	8 slots available			
	18:00	18:15	18:30	18:45
	19:00	19:15	19:30	19:45
Night	4 slots available			
	20:00	20:15	20:30.	20:45

Patient Name: Payoj Jain
Contact: +1 320-298-5274

Confirm

Online Consultation

Patient Details

Gender: **Age:**

Problem Type (eg Skin, Hair, Mental Health) ▼

Title:

Description: Less than 1000 characters

Your Email:

Ask a Doctor

Medical Record

Name:

Gender: **Age:**

Date: mm/dd/yyyy   **Record ID:**

Doctor:

Prescription and Comments: Less than 1000 characters

Date: mm/dd/yyyy   **Record ID:**

Doctor:

Prescription and Comments: Less than 1000 characters

Use Case Diagram

HEALTHCARE PLATFORM
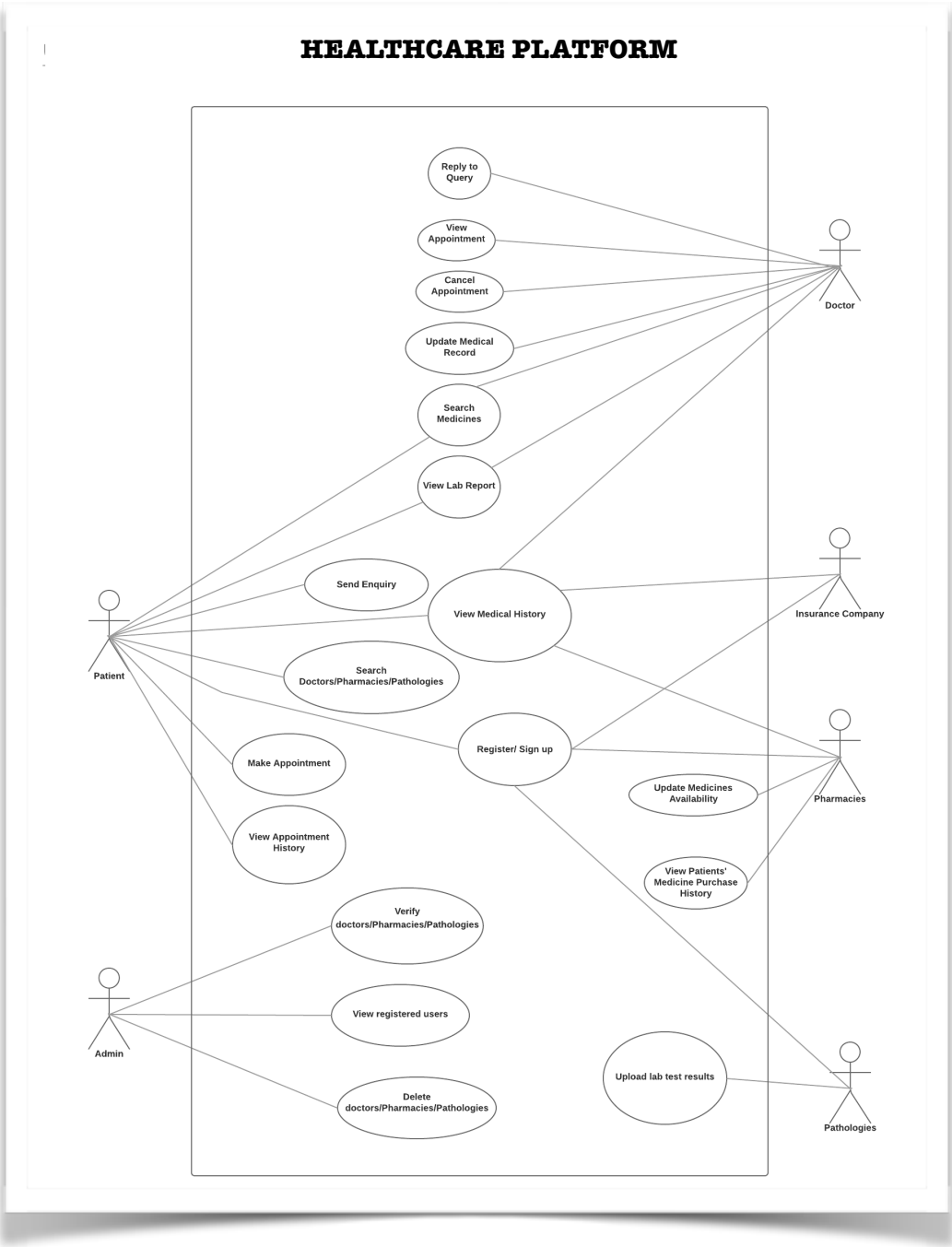
Sub UseCase Diagram

BOOKING APPOINTMENT
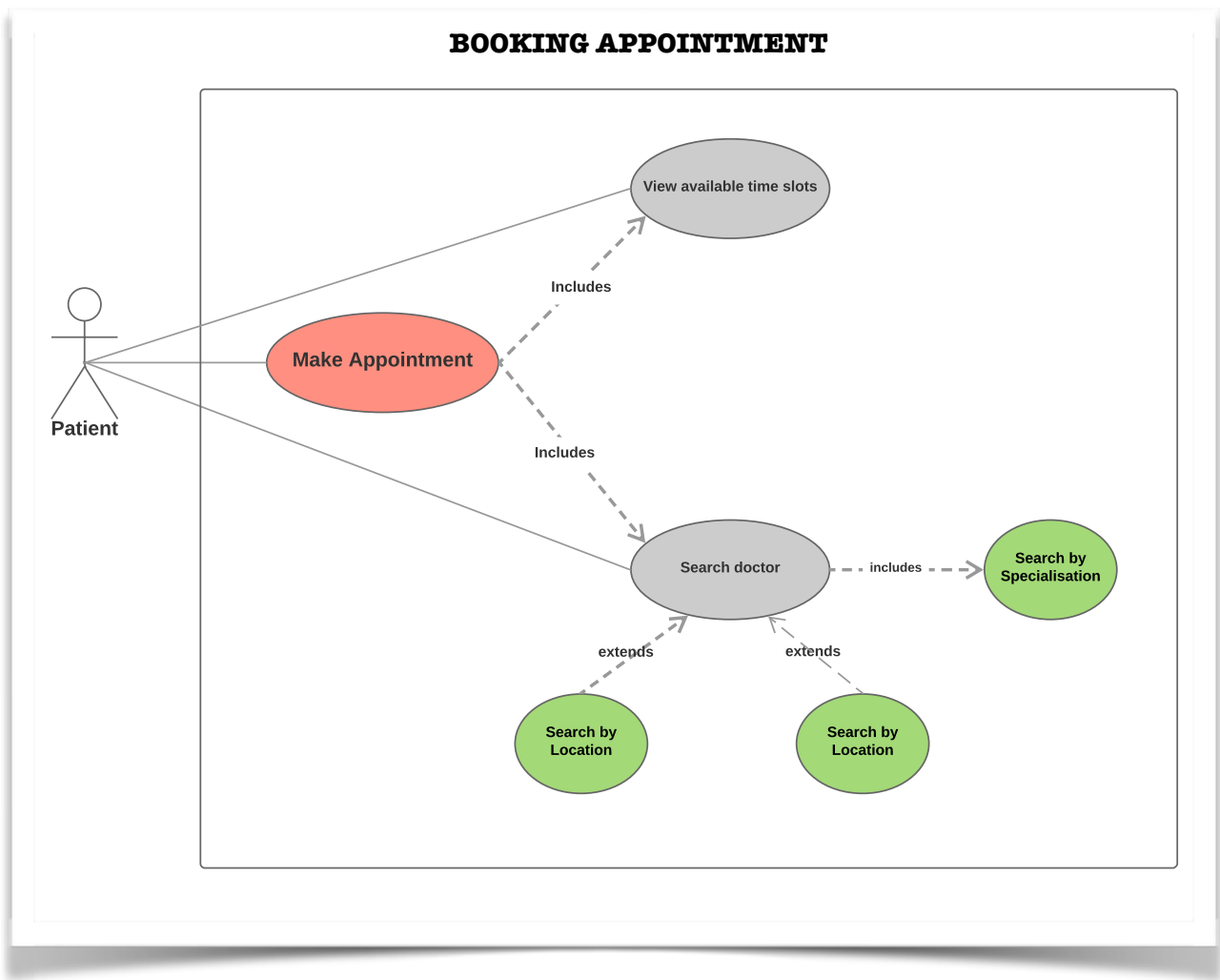
Use Case Documents

Use Case ID	UC001
Use Case Name	Make Appointment
Description	Patient can make an appointment with a doctor

Actors	Patient		
Preconditions	Patient is logged in to the platform		
Postconditions	Patient successfully make an appointment		
Frequency of use	Patient can schedule one appointment for a particular doctor per day		
Flows of Events		**Actor Action**	**System Response**
	1	Patient searches doctors based on specialisation. Patient can also choose location and search by name	List of doctors based on the selected criteria is displayed
	2	Clicks/Taps on any doctors' name from the list	

	3		Displays doctors relevant data like address, specialisation, experience. System also displays "Book Appointment" option
	4	Selects "Book"	Asks for Date of Appointment
	5	Enters Date	Displays available time slots for appointment
	6	Selects an available time slot and clicks "Confirm"	Locks the time slot and updates doctor's and patient's appointment schedule
Variations	5	Error Message: Appointment Date cannot be a past date	
	5	Pop up Message: All the time slots have been booked. Please choose any other date	
Exceptions			
Developer Notes			

Use Case ID	UC002
Use Case Name	Patient can ask query from Doctors
Description	A patient can consult online from doctors regarding general problem type

Actors	Patient		
Preconditions	Patient is logged in to the platform		
Postconditions	Query Successfully sent to the doctor		
Frequency of use	Patient can ask 4 questions in a day		
Flows of Events		**Actor Action**	**System Response**
	1	Patient selects "Online Consultations"	Displays a form with fields for patient to enter
	2	Patient enters "Problem Type" and types the question he/she is having. Selects "Ask a Doctor"	Sends the query to doctors with specialisation in "Problem type"
Variations			
Exceptions			
Developer Notes			

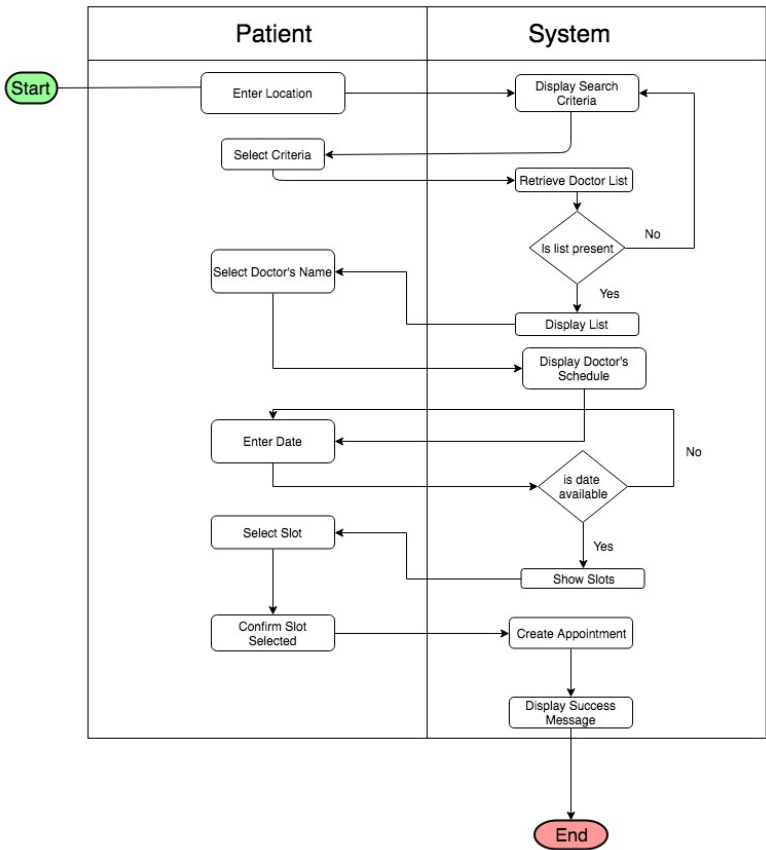| Use Case ID	UC003
Use Case Name	Updating Patient's Medical Record

Description	A doctor can prescribe medicines to patients and add comments by updating medical records of the patients

Actors	Doctor
Preconditions	Doctor is logged in to the platform Patient has an appointment with the doctor
Postconditions	Medical history is updated and patient is notified
Frequency of use	Doctor can update patients' medical records any number of times in a day

Flows of Events		Actor Action	System Response
	1	Doctor selects patient's name from his appointment schedule	Displays patient's medical record
	2	Clicks/Taps on "Edit Record"	
	3	Updates medical record by updating comments or prescribing medicines and Selects "Save"	Updates the medical record and notifies patient about the update
Variations			
Exceptions			
Developer Notes			

Activity Diagram

Make Appointment

Requirement ID: UR005
UseCase ID: UC001
UseCase Name: Make Appointment

Update Patient Medical Record