CSE 522: Course Project
Phase 1

(i) We are about to model a Hospital management system. Our mission is to manage all the tasks required for a patient to meet with a doctor and for the doctor to take the necessary steps to treat the patient.

We can have two kinds of patients in a hospital: In-Patient and Out-Patient. Out-Patient is a patient who visits the hospital to meet a doctor. An In-Patient is a patient who is admitted in the hospital for continuous care from the medical professionals.

An Out-Patient needs to make an appointment with the help of a Receptionist by a phone call or in-person at the reception. The Receptionist will make an appointment for the patient by checking the doctors in the department the patient wants to be checked and by checking the doctor's availability. If the patient is visiting the hospital for the first time, then the receptionist will create a new patient resource to store the patient's basic details. The doctor and the patient will be notified with this appointment timing and appropriate details of each other. During the patient and doctor appointment, the doctor might prescribe medicines for the patient. If the doctor prescribes the medicines, then the nurse will notify the pharmacist to pack the necessary medicine for the patient.

An In-Patient is a patient who came as an Out-Patient but due medical reasons had to be admitted in the hospital so that medical professionals can give extra care and monitor his recovery. He will be assigned to a doctor, who admitted the him. The nurse assigns the patient a particular room in the hospital after the doctor orders to do so. The nurse then notifies the Messenger, a professional who helps in transferring patients or files in between different departments, to shift the patient to the assigned room. Once the patient is transferred to the respective bed, the nurse notifies the dietician to visit the patient and advise him an appropriate diet plan according to his daily meal style which will help in faster recovery. This meal plan is stored as part of the patient's details. The nurse also notifies the Lab Technician, if ordered by doctor, to come and take any test samples like blood sample, inner mouth sample, etc for further lab tests. The lab results will be stored in the Patient's details as well. The nurse will notify pharmacist to pack all the medicine required for the Patient and get it delivered by the messenger.

The pharmacist keeps a count of the medicines and medical equipment in the pharmacy and restocks them as required.

Bed Inventory is a resource to keep a count of the number of beds and number of rooms available in the hospital. This resource can also store a map which tells a nurse where to find a particular patient.

A meal manager is a person in the hospital who checks the patients details and gets the right meal for the patient based on the dietician's entries.

(ii)

Actors	Action/Verb
Doctor	Meet out-patients who have taken appointment
	Meet in-patients
	Append details of the patient's diagnosis to the patient's medical history
	Prescribe medicines to the patient if required
Nurse	Notifies messengers to transfer an out-patient to their respective assigned room
	Assign room to an out-patient for admission by checking the bed inventory
	Notifies dietician to assign a meal plan for the In-Patient
	Notifies lab technicians to get take samples for lab tests
	Notifies to send the necessary medicines for the patient through a messenger
Patient	Contacts the receptionist to get an appointment with a doctor
	Meets the doctor and get the necessary prescribed medicine or gets admitted into the hospital for more medical care
Messengers	Get medicines from the pharmicists as ordered by the nurse
	Transfers an out-patient to a ward.
Receptionist	Checks the doctor's availablity and gives an appointment to the patient
	Adds the patient's details if the patient is visiting for the first time
Dietician	Visits an In-Patient and assigns a meal plan to the patient
BedInventory	keeps an account of all the beds available and the patients assigned to each bed
MealsManager	Checks the patient's meal plan and serves the right meal to in the In-Patient
LabTechnicians	Takes the test-sample of an In-Patient
	Tests the sample and adds the results in the Patient's medical history
Pharmacist	Keeps an account of all the available medicines
	Restocks the medicines whenever necessary
	Packs medicines for the patients

(iii) Class Diagram