

Student Project
Hospital Management System

SJSU
Girma Jembere, Arlan Prado, Jade Webb
Team 5

San Jose State University Summer 2020 CS157A

Functional Requirements

Physicians

- Search for, view, enter and edit patients' information
 - The physician will be able to access patient information that is restricted to only the patients they are currently serving. The search can be performed by entering the patient ID in the Search bar on the main menu. The system will display the patient's information for viewing and editing.
 - The physician will have clearance to edit relevant patient information such as diagnosis by selecting the Edit option. This will allow information to be added or updated during the patient's treatment. Permanent information such as name and age cannot be edited.
- View and enter doctor's notes
 - The physician will be able to view, enter, and edit notes for their patients by selecting the Notes option after searching for and selecting a patient.
 - These notes can be general or related to the results of a procedure.
- Prescribe medication
 - The physician will be able to order medication from the pharmacist for their patients by selecting the Order Medication option then typing the name of the medication. This will be done after searching for and selecting a patient.
 - The physician will be able to write a digital prescription by assigning their patients specific medication and dosage. This will be stored under Patient Information and can be accessed by the physician and the patient.
- Recommend patients to specialists/surgeons/other physicians
 - The physician will be able to recommend one of their patients to another doctor by selecting the Referral option after searching for and selecting a patient.
 - Under the Referral option, the physician can search for other doctors by typing in a doctor's name or keywords regarding the desired services in the Search bar
 - The system will display suggested doctors which can be selected.
 - After selecting another doctor, the doctor's name and ID will be added to the patient's information under the section representing the doctors assigned to them. The patient's name and ID will also be added to the doctor's information under the section representing patients they are assigned to.
 - The system will notify the other doctor about the referral by sending a notification to their secretary, who will schedule the appointment and add it to the corresponding doctor and patient schedules.
- View inventory
 - The physician will be able to view current inventory to monitor the status of equipment they may use.
 - The physician can do so by selecting the Inventory option from the main menu.
 - The physician can type keywords or an item ID into the search bar that is displayed in order to locate the desired item.

- The system will display inventory items that match the current search criteria.
- The physician can select the option to Request an Order for more equipment. This request will be sent to the inventory manager for their consideration.
- Access schedule
 - The physician will be able to view their schedule by selecting the Schedule option from the main menu
 - The physician will enter their ID into the Search bar and the system will display their schedule

Nurses

- Search for, view enter, and edit patients' medical data
 - The nurse will be able to access patient information that is restricted to only the patients they are currently serving. The search can be performed by entering the patient ID in the Search bar on the main menu. The system will display the patient's information for viewing and editing.
 - The nurse will have clearance to edit relevant patient information such as temperature, blood pressure, heart rate, and weight by selecting the Edit option. Permanent information such as name and age cannot be edited.
- View and enter nurse's notes
 - The nurse will be able to view, enter, and edit notes for their patients by selecting the Notes option after searching for and selecting a patient.
 - These notes are often general.
- Access schedule
 - The nurse will be able to view their schedule by selecting the Schedule option from the main menu.
 - The nurse will enter their ID into the Search bar and the system will display their schedule.
- View inventory
 - The nurse will be able to view current inventory to monitor the status of equipment they may use.
 - The nurse can do so by selecting the Inventory option from the main menu.
 - The nurse can type keywords or an item ID into the Search bar that is displayed in order to locate the desired item.
 - The system will display inventory items that match the current search criteria.
 - The nurse can select the option to Request an Order for more equipment. This request will be sent to the inventory manager for their consideration.

Specialists

- Search for, view enter, and edit patients' information
 - The specialist will be able to access patient information that is restricted to only the patients they are currently serving. The search can be performed by entering the patient ID in the Search bar on the main menu. The system will display the patient's information for viewing and editing.

- The specialist will have clearance to edit relevant patient information such as diagnosis by selecting the Edit option This will allow information to be added or updated during the patient's treatment. Permanent information such as name and age cannot be edited.
- View and enter doctor's notes
 - The specialist will be able to view, enter, and edit notes for their patients by selecting the Notes option after searching for and selecting a patient.
 - These notes can be general or can include official documentation of the results of a procedure, a test, or laboratory work.
- Prescribe medication
 - The specialist will be able to order medication from the pharmacist for their patients by selecting the Order Medication option then typing the name of the medication. This option will be selected after searching for and selecting a patient.
 - The physician will be able to write a digital prescription by assigning their patients specific medication and dosage. This will be stored under Patient Information and can be accessed by the specialist and the patient.
- Order a procedure
 - The specialist will be able to order a procedure to be performed on their patient.
 - The specialist can select the Schedule Procedure option after searching for and selecting a patient. The specialist then types the name of the procedure they would like to perform.
 - The system will then send a notification to the secretary to schedule the procedure and add it to the corresponding patient and doctor schedules.
- Access schedule
 - The specialist will be able to view their schedule by selecting the Schedule option from the main menu.
 - The specialist will enter their ID into the Search bar and the system will display their schedule.
- View inventory
 - The specialist will be able to view current inventory to monitor the status of equipment they may use.
 - The specialist can do so by selecting the Inventory option from the main menu.
 - The specialist can type keywords or an item ID into the Search bar that is displayed in order to locate the desired item.
 - The system will display inventory items that match the current search criteria.
 - The specialist can select the option to Request an Order for more equipment. This request will be sent to the inventory manager for their consideration.

Surgeons

- Search for and view patients' information
 - The specialist will be able to access patient information that is restricted to only the patients they are currently serving. The search can be performed by entering the patient ID in the Search bar on the main menu. The system will display the patient's information for viewing.
- View and enter doctor's notes

- The surgeon will be able to view, enter, and edit notes for their patients by selecting the Notes option after searching for and selecting a patient.
- These notes can be general or related to the results of a procedure or test.
- Access schedule
 - The surgeon will be able to view their schedule by selecting the Schedule option from the main menu.
 - The surgeon will enter their ID into the Search bar and the system will display their schedule.
- View inventory
 - The surgeon will be able to view current inventory to monitor the status of equipment they may use.
 - The surgeon can do so by selecting the Inventory option from the main menu.
 - The surgeon can type keywords or an item ID into the Search bar that is displayed in order to locate the desired item.
 - The system will display inventory items that match the current search criteria.
 - The surgeon can select the option to Request an Order for more equipment. This request will be sent to the inventory manager for their consideration.

Supervisors

- Search for, view, and edit patients' information
 - The supervisor will be able to access limited patient information for all patients. The search can be performed by entering the patient ID in the Search bar on the main menu. The system will display the patient's information including their ID and doctors' notes.
 - The supervisor will be able to edit specific patient information regarding the room and the doctors they are assigned by selecting the Edit option.
- View and order inventory
 - The supervisor will be able to view current inventory.
 - The supervisor can do so by selecting the Inventory option from the main menu.
 - The supervisor can type keywords or an item ID into the Search bar that is displayed in order to locate the desired item.
 - The system will display inventory items that match the current search criteria.
 - The supervisor can then select the Place Order option to view order requests and place an order for new equipment.

Pharmacists

- View medication orders
 - The pharmacist will be able to view current medication orders by selecting the Pharmaceutical Orders option from the main menu.
 - The system will display any current medication orders placed by doctors. The orders will display medication name among other information such as amount and patient ID.
- View medication inventory
 - The pharmacist will be able to view current inventory to monitor the status of medication.
 - The pharmacist can do so by selecting the Inventory option from the main menu.

- The pharmacist can type the medication name or brand into the Search bar that is displayed in order to locate the desired item.
- The system will display inventory items that match the current search criteria.
- The pharmacist can select the option to Request an Order for more medication. This request will be sent to the inventory manager for their consideration.

Receptionists

- Register, search for, and delete patient info
 - The receptionist will be able to enter new patient information. This can be performed by selecting the Registration option on the main menu, then selecting Add New Patient.
 - After doing so, the patient will be automatically assigned an ID and be entered into the patient catalog in the system.
 - The receptionist cannot edit patient info once it is entered. When searching for a patient under the Search menu option, the receptionist can only view the patient's name, ID, and room number.
 - The receptionist will be able to mark patients as inactive once they are discharged. This will prevent the system from displaying the patients as query results.
- Register visitors
 - The receptionist will be able to enter visitor information. This can be performed by selecting the Registration option on the main menu, then selecting Add New Visitor.
 - The visitor information includes the ID of the patient they are visiting. The system attaches the visitor information to the corresponding patient information within the database.

Secretaries

- Search for and view patients' information
 - The secretary will be able to access limited patient information for all patients. The search can be performed by entering the patient ID in the Search bar on the main menu. The system will display the patient's information for viewing.
 - The secretary will have clearance to view relevant patient information such as patient name, ID, room number, schedule, and doctors assigned to.
- View and edit all schedules
 - The secretary will be able to view the schedule of any patient or employee under their jurisdiction by selecting the Schedule option from the main menu.
 - Any notifications about appointments or procedures to schedule will be displayed by the system under the Notifications option.
 - In order to view a schedule, the secretary will be able to enter the patient or employee ID into the Search bar and the system will display their schedule.
 - The secretary will be able to edit any schedule by selecting the Edit option when viewing a schedule. This will allow appointments and procedures to be scheduled and rescheduled.

Food Servers

- Search for and view patients' information

- The food server will be able to access patient information that is restricted to the rooms they are in charge of serving. The search can be performed by entering the room ID in the Search bar on the main menu. The system will display limited patient information such as meal requests, preferences, allergies, aversions, and impairments (e.g. trouble swallowing).

Housekeepers

- Search for and view patients' information
 - The housekeeper will be able to access limited patient information that is restricted to the rooms they are in charge of. The search can be performed by entering the room ID in the Search bar on the main menu. The system will display limited patient information such as diagnosis, contagion risk, and quarantine status. This will allow rooms that are housing COVID-19 patients to be cleaned especially well.
- Access schedule
 - The housekeeper will be able to view their schedule by selecting the Schedule option from the main menu.
 - The housekeeper will enter their ID into the Search bar and the system will display their cleaning schedule. This will ensure that optimal sanitation is maintained by enabling routine cleaning of all areas of the hospital.

Inventory Managers

- View, edit, and order inventory
 - The inventory manager will be able to view current inventory.
 - The inventory manager can do so by selecting the Inventory option from the main menu.
 - The inventory manager can type keywords or an item ID into the Search bar that is displayed in order to locate the desired item.
 - The system will display inventory items that match the current search criteria.
 - The inventory manager can select the Edit option to edit inventory quantities as new shipments arrive.
 - The inventory manager can select the Place Order option to view order requests and place an order for new equipment.

Patients

- Access their own patient information
 - The patient will be able to access their own patient information. This can be performed by entering their own patient ID in the Search bar on the main menu. The system will display their information for viewing. This information includes basic information, prescriptions, doctors' notes, medical history, lab results, and their pending hospital bill.
- Access schedule
 - The patient will be able to view their schedule by selecting the Schedule option from the main menu.
 - The patient will enter their ID into the Search bar and the system will display their schedule.

E/R Diagram

