

Test-case Identifier	Discharge Patient (Integration)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Dismissal (Discharge) of a patient from the CARES system
Feature Pass/Fail Criteria	Patient is successfully discharged from the system, discharge instructions are saved, and discharge confirmation is displayed. Patient can not be searched for anymore unless looking to generate Bill
Means of control	Initiated from the UI through the "Discharge" button following nurse and doctor discharge procedures.
Data	<p>1. Discharge patient who has been admitted and for whom discharge has been initiated by a nurse:</p> <ul style="list-style-type: none"> - Result: Discharge process completes with discharge instructions saved and discharge confirmation displayed. - Expected Result: Discharge process completes with discharge instructions saved and discharge confirmation displayed. <p>2. Attempt to discharge a patient without initiating by a nurse:</p> <ul style="list-style-type: none"> - Result: Discharge process fails to initiate, with a warning displayed. - Expected Result: Warning message stating "Discharge initiation by nurse required" is displayed, preventing premature discharge. <p>(Fix): WarningManger was not invoking a warning message, added invocation.</p>

	<p>3. Search for a discharged patient:</p> <ul style="list-style-type: none">- Result: Discharged patient was displayed- Expected Result: Warning that patient has already been discharged <p>(Fix): Incorrect logic in sharePoint method, allowing for patient to be called when discharged, changed logic to prevent searching for a discharged patient for Nurse and Doctor classes</p>

Test-case Identifier	Discharge Button (Method)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Dismissal (Discharge) of a patient from the CARES system
Feature Pass/Fail Criteria	Patient's internal field variables are updated thru the different stages of discharge through the use of the DischagreButton method that is called when the button is clicked
Means of control	Initiated from the UI through the "Discharge" button following nurse and doctor discharge procedures.
Data	<p>1. Discharge a Patient who has had there discharge started by the nurse</p> <ul style="list-style-type: none"> - Result:Expected Result: Patient Discharge is completed, field data is discharged is set to true, DischargeDate is set to a value 0-5 days in the future. - Expected Result: Patient Discharge is completed, field data is discharged is set to true, DischargeDate is set to a value 0-5 days in the future. <p>2. Discharge a patient who has not had there discharge started by the nurse</p> <ul style="list-style-type: none"> - Result: Doctor has Ui Button visible and was able to discharge the patient without having to wait for the nurse - Expected Result: Doctor users should see the UI button for discharged patients disabled as the nurse has not yet started being discharged, isDischargeStarted, and isDischarged are both false. <p>(Fix): Added a class is instance of check to make sure that if the doctor view is being displayed and the current patient is not had discharge started the discharge button is disabled</p>

Test-case Identifier	Admit Button (Method)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Check-in and admission into the CARES system
Feature Pass/Fail Criteria	If a patient is being checked in, make sure that the patient has been added to the database, if the patient is being admitted make sure his Admitted is set to true. And set current date to AdmittedDate
Means of control	Initiated from the UI through the "Discharge" button following nurse and doctor discharge procedures.
Data	<ol style="list-style-type: none"> Check in a Patient with the all fields field following input restrictions <ul style="list-style-type: none"> - Result:- Expected Result: isAdmmited field variable is set to true, and current date is set to AdmittedDate, display message of patient being admitted. - Expected Result: Patient is admitted into the database system, Check in a Patient with the some fields field incorrectly, not following input restrictions <ul style="list-style-type: none"> - Result: Warning is displayed to user and patient is not added to the database system - Expected Result: Warning is displayed to user and patient is not added to the database system Admit Patient who has been checked-in <ul style="list-style-type: none"> - Result: isAdmmited field variable is set to true, and current date is set to AdmittedDate, displaying the message of the patient being admitted. - Expected Result: isAdmmited field variable is set to true, and current date is set to AdmittedDate, display message of patient being admitted.

Test-case Identifier	To Bill (Method)
Test Location	src/main/java/hospital/ui/users/patients/Bill.java
Feature to be tested	Generation of bill for a patient in the CARES system
Feature Pass/Fail Criteria	If a patient is searched in the billing view, the patient's bill with pe displayed correctly is formatted to clearly show the patient they are being charged for.
Means of control	Initiated from the UI through the search button in the billing interface
Data	<ol style="list-style-type: none"> Search a patient that does not exists <ul style="list-style-type: none"> - Result: Patient is not found, no bill is displayed and warning is shown to the user - Expected Result: Patient is not found, no bill is displayed and warning is shown to the user Search a patient who has not yet been discharged <ul style="list-style-type: none"> - Result: Bill is displayed for patients with current available information minus time admitted. - Expected Result: Bill is displayed for patients with current available information minus time admitted. Search a patient who has been discharged <ul style="list-style-type: none"> - Result: Warning appears saying patient has already been discharged, not bill is generated - Expected Result: Bill is formatted for patients with current all information providing the UI with the final complete bill. <p>(Fix) - Logic was incorrect, the logic to block a discharged patient from being searched in the other views of the application were blocking the patient to be searched and sibling in the billing section.</p>

Test-case Identifier	Create Patient (Method)
Test Location	src/main/java/hospital/ui/users/staff/EmergencyRoomStaff.java
Feature to be tested	Creation of a patient in the CARES system database
Feature Pass/Fail Criteria	Pass if the patient is created and added to the database if and only if the patient does not already exists within the database
Means of control	Initiated from the UI through the check-in patient button
Data	<ol style="list-style-type: none"> 1. Create a patient that does not already exists in the database <ul style="list-style-type: none"> - Result: Patient is added to the systems database and is able to be searched for. - Expected Result: Patient is added to the systems database and is able to be searched for. 2. Search a patient who already been entered into the database

	<ul style="list-style-type: none"> - Result: Warning is displayed that a patient with the following information already exists and no patient is added to the database. - Expected Result: Warning is displayed that a patient with the following information already exists and no patient is added to the database.
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Test-case Identifier	Search Patient (Integration)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Searching of a patient from the database
Feature Pass/Fail Criteria	Pass: Patient is loaded into UI or Warning is displayed that patient could not be found / search was incorrectly formatted
Means of control	Initiated from the UI search button, after login
Data	<p>1.Search for patient in the system that exists while logged in as nurse or doctor:</p> <ul style="list-style-type: none"> - Result: No patient loaded is loaded into the UI - Expected Result: Patient loaded in the UI with all information displayed <p>(Fix):first name and last name were being switched causing invalid search key, so had to change a line of code in the patient constructor so that when a patient was made the key used to load them in the database was last name, firstname not the other way around;</p> <p>2. Search for a patient in the system that does not exist</p> <ul style="list-style-type: none"> - Result: No patient loaded into UI, Warning displayed (No patient found)

	<ul style="list-style-type: none"> - Expected Result: No patient loaded into UI, Warning displayed (No patient found) -Search for patient in the system (incorrectly format lastname, firstname) <ul style="list-style-type: none"> Result: No patient loaded, Warning (incorrect format) Expected Result: No patient loaded, Warning (incorrect format) 3. Search for patient in the system (incorrectly formatted lastname, firstname) <ul style="list-style-type: none"> - Result: No patient loaded into UI, Warning (incorrect format) - Expected Result: No patient loaded into UI, Warning (incorrect format) 4.Search for patient in the system (incorrectly format dob) <ul style="list-style-type: none"> - Result: No patient loaded into UI, Warning (incorrect format) - Expected Result: No patient loaded into UI, Warning (incorrect format) 5.Search for patient in the system, search for patient empty patient <ul style="list-style-type: none"> - Result: No patient loaded into UI, Warning (incorrect format) - Expected Result: No patient loaded into UI, Warning (incorrect format)
Test-case Identifier	runLab()

Test Location	src/main/java/hospital/ui/labs/LabPanel.java
Feature to be tested	Generates a random lab result for the parameter lab number, assigning it to an array of LabResult objects
Feature Pass/Fail Criteria	<p>Pass: The labResults array is filled with the selected random results</p> <p>Fail: The labResults array is not filled with the selected random results</p>
Means of control	Called by the runLabs() method in MainViewController.java
Data	<p>1. Run 1 lab at a time</p> <p>Expected Result: Each lab selected generated a result and that result was displayed.</p> <p>Actual Result: Every lab generated a result in the lab panel below separately.</p> <p>2. Run multiple labs at a time, different combinations</p> <p>Expected Result: Any combination of multiple labs runs and generates a result.</p> <p>Actual Result: All combinations of labs have generated a result in the lab panel below.</p>

Test-case Identifier	loadValidScripts()
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Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	The method evaluates what diagnosis has been made and then gives permissions to what prescriptions can be allowed, when the patient is loaded into the CARES System.
Feature Pass/Fail Criteria	Pass: The correct prescriptions are displayed Fail: No prescription options are displayed
Means of control	Called by loadPatient() in MainViewController
Data	<ol style="list-style-type: none"> 1. Search for a patient and CARES will load their information to the dashboard <p>Expected Result: The patient's prescriptions are displayed correctly.</p> <p>Actual Result: The patient's prescriptions were successfully displayed on multiple occasions, and with different prescriptions</p>

Test-case Identifier	updateValidScripts()
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Changes the valid prescriptions to available based on the chosen diagnosis(es)
Feature Pass/Fail Criteria	Pass: When one or more of the diagnoses are chosen, their prescriptions below it are opened up Fail: No prescriptions are highlighted when a diagnosis is checked
Means of control	Called by User Interface in main-view.fxml

Data	<ol style="list-style-type: none"> 1. Given a patient already loaded into the dashboard, click one diagnosis. Expected Result: The three prescriptions below the diagnosis open up for choosing Actual Result: The three prescriptions below are correctly displayed. 2. Given a patient already loaded into the dashboard, click more than one diagnosis, different combinations Expected Result: The dashboard should highlight all prescriptions corresponding to the diagnoses chosen Actual Result: The dashboard correctly displayed the prescription options, even with different combinations of diagnoses
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Test-case Identifier	updateScripts()
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Changes the value of prescriptions in the Patient object when a prescription is selected
Feature Pass/Fail Criteria	The appropriate prescriptions are changed and can be displayed correctly when a
Means of control	Called by User Interface in main-view.fxml
Data	<ol style="list-style-type: none"> 1. Given a patient already loaded into the dashboard, diagnose and prescribe medication accordingly. Logout and then log back in as either a Nurse or a Doctor. Search for the patient.

	<p>Expected Result: The patient's information should be loaded correctly, including the prescriptions you prescribed earlier</p> <p>Actual Result: The prescriptions were correctly displayed, even across Doctor and Nurse users, as how the software would be used in the hospital setting (working towards discharging the patient)</p>
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Test-case Identifier	diagnose() and prescribe() (Integration)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	When a Diagnosis is checked, the corresponding Prescriptions are highlighted and are able to be checked.
Feature Pass/Fail Criteria	<p>Pass: The diagnosis is clicked, then the prescriptions below it are highlighted and are clicked as well</p> <p>Fail: Either the diagnosis checkboxes won't be able to be checked, or the prescriptions checkboxes won't be able to be checked after the diagnosis is checked</p>
Means of control	Called when a user clicks any of the checkboxes under a Diagnosis and their corresponding Prescription box(es)
Data	<ol style="list-style-type: none"> Given a patient loaded into the dashboard, click any one or more of the diagnoses, and then click one of each of their corresponding prescriptions. Then, logout and log back in as either a Nurse or Doctor. <p>Expected Result: The diagnoses and prescriptions are displayed as selected</p> <p>Actual Result: The diagnoses and prescriptions were displayed correctly, after testing multiple combinations</p>

Test-case Identifier	runLabs() (Integration)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Generates a random lab result for the selected Labs on the panel, assigning it to an array of LabResult objects
Feature Pass/Fail Criteria	The user interface responds by displaying a green box saying “Normal” or a red box with “Abnormal” in the Lab Results section.
Means of control	Called when a user clicks the “Run Labs” button
Data	<p>1. Click one lab at a time</p> <p>Expected Result: The corresponding lab result is displayed below in the lab result section</p> <p>Actual Result: On many occasions, the corresponding lab result was correctly displayed on the dashboard</p> <p>2. Click multiple labs at a time, different combinations</p> <p>Expected Result: The corresponding lab results are displayed below in the lab result section</p> <p>Actual Result: On many occasions, the corresponding lab results were correctly displayed on the dashboard</p>

Test-case Identifier	Edit Information (Integration)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Entering information and updating it with correct and incorrect inputs to test for error messages and correct updating of patient information
Feature Pass/Fail Criteria	<p>Pass- If the error messages show up when the information is entered in the wrong format and the Patient Information is updated correctly</p> <p>Fail - If the error messages fail to show up when incorrect information is entered and if the information updated by the Nurse/Doctor does not show up when the patient is searched.</p>
Means of control	The Nurse/Doctor initiates the editing by searching for a specific patient, clicking on the text fields, and filling in the new information for the system to update them.

Data

1. Entering Correct Patient Information as Staff

Result - Allow patient check-in

Expected Result - Allow patient check-in

2. Entering Incorrect Patient Information as Staff

Result - Show warning message

Expected Result - Show warning message once

Fix - When logging in and out the controller class was adding itself to the warning manager each time causing multiple warning calls to be displayed per warning

3. Edit Information and enter information in the correct format as Nurse

Result - The system updates the information

Expected Result - The system updates the information

4. Edit Information in incorrect format

Result - Show warning message

Expected Result - Show warning message

When logging in and out the controller class was adding itself to the warning manager each time causing multiple warning calls to be displayed per warning

5. Search Patient as Doctor using the correct patient name and birthday

Result - Updated Patient Information shows up on the screen

Expected Result - Updated Patient Information shows up on screen

	<p>6. Search Patient as Doctor using the incorrect patient name and birthday</p> <p>Result - Shows warning message</p> <p>Expected Result - Shows warning message</p>
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Test-case Identifier	Patient Admission (Integration)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	Patient Status is changed from Not Admitted to Admitted in the Medical Information section
Feature Pass/Fail Criteria	<p>Pass - If the Nurse/Doctor clicks on the “Admit Patient” button and the status of that patient changes from Not Admitted to Admitted in the Medical Information section</p> <p>Fail - If the Nurse/Doctor clicks on the “Admit Patient” button and the status of that patient does not change from Not Admitted to Admitted in the Medical Information section</p>
Means of control	The Nurse/Doctor initiates admission by searching for a patient by entering the patient’s Last Name, First Name, and Birthday in the correct format and then using the Search Patient button to pull up that patient’s information. Then clicks the “Admit Patient” button to admit the patient.
Data	<p>1. Nurse/Doctor Searches patient and clicks on the Admit Patient button.</p> <p>Result - Dialog box shows message “Patient is Admitted” and Admission status changes to “Admitted”</p> <p>Expected Result - Dialog box shows message “Patient is Admitted” and Admission status changes to “Admitted”</p>

	<p>2. Nurse/Doctor Searched already admitted patient and attempts to readmit patient</p> <p>Result - The “Admit Patient” button is inaccessible</p> <p>Expected Result - The “Admit Patient” button is inaccessible</p>
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Test-case Identifier	Load and Save Patient to Database (integration)
Test Location	src/main/java/hospital/ui/database/Database.java
Feature to be tested	Once a patient is checked in by Staff, the system is closed and reopened to check if the patient is stored in the database, by logging back into the system as Nurse/Doctor/Billing to check if the patient can be searched up.
Feature Pass/Fail Criteria	<p>Pass- Once the Staff check in a patient, and the system is closed, the patient is pulled up by the system when searched by Doctor/Nurse/Billing Staff using the correct information in the text fields for Search Patient.</p> <p>Fail - If warning message pops up with the message “Patient Not Found”, even when the information was inputted for the Search Patient in the correct format.</p>
Means of control	Staff logs in and enters the patient’s information and clicks on the “Check-In” button, and then closes the program. The Nurse/Doctor/Billing staff reopens the system, logs in and searches for the patient using the correct information and format.
Data	<p>1. Staff creates a patient profile using patient Check-In, then closes the program and when the Doctor/Nurse reopens it to search up the patient, the patient information shows up on the screen.</p>

	<p>Result - Patient Information shows up on the screen after the program has been closed and reopened.</p> <p>Expected - Patient Information shows up on the screen after the program has been closed and reopened.</p>
Test-case Identifier	Warnings for setters, (Cell Phone, Birthday, Emergency Cell, Height, Weight, BP, Heart Rate, Spo2%, Body temp) (Method)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	When incorrect formats are entered into each of the text fields for Cell Phone, Birthday, Emergency Cell, Height, Weight, BP, Heart Rate, Spo2%, Body temp, a warning message pops up.
Feature Pass/Fail Criteria	<p>Pass- When a warning message shows up after an incorrect format is typed into the text fields for each field.</p> <p>Fail - If the system fails to show a warning message even when the format of the information typed is incorrect.</p>
Means of control	Nurse/Doctor/Staff attempt to input information into the text fields by selecting each text field.
Data	<p>1. Nurse/Doctor/Staff enters incorrect information in the text fields.</p> <p>Result - Warnings pop up for each field when incorrect information is inputted with the correct format shown in the message</p> <p>Expected - Warnings pop up for each field when incorrect information is inputted with the correct format shown in the message</p>

	<p>Fix - Body Temp (F) and SpO2% showed no warning when letters are inputted but showed a warning only when the number entered is out of range. Warning dialog for BodyTemp shows range 1-150 but takes only 1-100 F. This was also fixed. Fixed by simply changing the range value and allowing for regular expressions to trigger with letter chars</p> <p>2. Nurse/Doctor/Staff enters correct information in the text fields.</p> <p>Result - No warning message shows up</p> <p>Expected Result - No warning message shows up</p>
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Test-case Identifier	Login-all views() (Method)
Test Location	src/main/java/hospital/ui/LoginController.java
Feature to be tested	The correct features are accessible to each user based on the user logged in.
Feature Pass/Fail Criteria	<p>Pass - If all the correct features are accessible to each user depending on their roles.</p> <p>Fail - If certain features are inaccessible to a specific role or if certain features that should not be accessible to a certain role are made accessible to them by the system.</p>
Means of control	The Nurse/Doctor/Billing Staff/Staff log in using their specific credentials.
Data	<p>1. Staff logs in</p> <p>Result - Text boxes for Patient Information show up with the Check-In patient, Search Patient is inaccessible by Staff.</p>

Expected - Text boxes for Patient Information show up with the Check-In patient, Search Patient is inaccessible by Staff.

2. Nurse logs in

Result - Screen gives access to Search Patient, Patient Information text fields, Medical Information text fields, Lab tests to run labs and Lab Results to view the test results, and the Discharge Instructions text field along with the “Start Discharge” button. The screen restricts access to the diagnosis section for Nurse.

Expected Result - Screen gives access to Search Patient, Patient Information text fields, Medical Information text fields, Lab tests to run labs and Lab Results to view the test results, and the Discharge Instructions text field along with the “Start Discharge” button. The screen restricts access to the diagnosis section for Nurse.

3. Doctor logs in

Results - The Doctor gets access to all the features that the Nurse has access to, except “Start Discharge”. Once Nurse initiates discharge using the “Start Discharge” button, Doctor can complete the discharge using the “Discharge button”

Expected Results - The Doctor gets access to all the features that the Nurse has access to, except “Start Discharge”. Once Nurse initiates discharge using the “Start Discharge” button, Doctor can complete the discharge using the “Discharge button”

Test-case Identifier	LoadLabs() (Method)
Test Location	src/main/java/hospital/ui/labs/LabPanel.java
Feature to be tested	The lab results are visible to the Doctor/Nurse after a patient is searched using the correct information.
Feature Pass/Fail Criteria	<p>Pass - if all the results for all the labs run are visible in the Lab Results section to the Doctor/Nurse.</p> <p>Fail - If not all or none of the results are visible to the Doctor/Nurse.</p>
Means of control	Nurse/doctor logs into the system and searches a specific patient to see the labs that were run for them and access the results of those labs from the Lab Results panel.
Data	<p>1. Nurse/Doctor logs in and searches for a patient</p> <p>Result - The Lab Results panel is visible with the results of the labs already run.</p> <p>Expected - The Lab Results panel is visible with the results of the labs already run.</p>

Test-case Identifier	searchPatient()->main view controller (Method)
Test Location	src/main/java/hospital/ui/MainViewController.java
Feature to be tested	When searched using the correct information in the correct format, the information of the specific patient being searched shows up on the screen.
Feature Pass/Fail Criteria	Pass - When the Nurse/Doctor/Billing Staff search for a patient using the correct information in the correct format,

	<p>and the patient information shows up on the screen or in the case of billing staff, a bill is generated for the specific patient.</p> <p>Fail - When the system fails to show all the information or any information of a patient that was checked in and searched for using the correct information in the correct format, and in the case of billing staff, a bill is not generated for the specific patient.</p>
Means of control	<p>Nurse/Doctor/Billing Staff search for patient using the patient's First Name, Last Name, and Birthday (MM/DD/YYYY) using the text fields to enter the information and then clicking the "Search Patient" button.</p>
Data	<ol style="list-style-type: none"> 1. Nurse/Doctor search for patient using the patient's Last Name, First Name, and DOB in the format MM/DD/YYYY. <p>Result - Patient information shows up on screen.</p> <p>Expected Result - Patient information shows up on screen.</p> 2. Nurse/Doctor search for patient using the patient's Last Name, First Name, and DOB in incorrect format, order of names. <p>Results - Warning dialog with "Patient not found" or "Enter a valid search" message pops up.</p> <p>Expected Results - Warning dialog with "Patient not found" or "Enter a valid search" message pops up.</p> 3. Billing Staff searches for a patient using the right format for a checked-in patient. <p>Results - Patient Bill generates if Patient was checked in.</p> <p>Expected Results - Patient Bill generates if Patient was checked in.</p>

	<p>4. Billing Staff searches for a patient that was not checked in by Staff.</p> <p>Result - Warning message that says “Patient not found”</p> <p>Expected Result - Warning message that says “Patient not found”</p> <p>5. Staff attempts to search patient after logging in.</p> <p>Result - Search patient is inaccessible</p> <p>Expected Result - Search patient is inaccessible</p>
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