XamineRIS Testing Document

System Admin

Admin Test Cases:

For the system administrator to function effectively they need to:

View all users of the system

Add new users into the system

Remove existing users from the system

Modify Existing users information

To test these cases we will be extensively adding , viewing, modifying and removing users using the Admin portal to ensure that everything works as expected and address any identified issues occurring in the system.

Admin Test results:

After Extensive testing, the admin portal of the XaminRIS system works as expected. The system administrators can effectively view existing users, add new users to the system, update existing users, and remove existing users from the system entirely. Though some early and later tests revealed some glaring issues they have been resolved.

Admin Test Defects and Solutions:

Viewing Existing users - Initially when existing users are displayed their respective userID numbers are correct but upon refreshing the page the ID’s have increased in size and continue to do so everytime the page is refreshed.

Solution - While initially we planned to give each user of the system a unique UserID number in the final product we kept users separate by their unique Username so alleviating this issue in the current user panel was resolved by sorting by usernames rather than user ID numbers.

Updating User Information - regardless of the category of user (receptionist, referring Dr, etc.) updating user information will change their job class to the referring doctor user type.

Solution - Issue was resolved by changing how the radio buttons used for selection of user type were read by the system.

Adding a new user - Initial tests reveal that the creation of a new user always creates a referring doctor instead of the appropriate selection.

Solution - Fixing the formatting of the radio button if-else if clause was able to alleviate the selection issues.

Adding a new user - Initial tests reveal that creating a new user inserts the email as the user password and the password as the users emailed

Solution - Switching the order of the parameters being passed to SQL database corrects this issue.

Adding a new user - Extensive testing reveals that new users created by an admin cannot login due to a mismatch on passwords, despite the entered password matching the password stored in the database.

Solution - Modifying the addPassword() method inside the User class to accept the user password as a String and an integer value for the length of the string to modify the Char[] used to hold passwords without “extra” space behind the password.

Referring Physician

Referring Physician Test Cases:

To test the Referring Physician portal we first need to identify what the Referring Physician needs to be able to do in order to function:

Search for, and select from existing Patients

Create new Patients

Search for and view Existing or outstanding orders issued by that physician.

Create a new imaging order

View the results of completed orders

To test these cases, we need to start with the “front half” of test cases. We tested these “first half cases” by extensively creating new patients and imaging orders, searching for outstanding orders and existing patients. To test the “back half” functions we tested whether or not they had access to the orders they issued that had been fulfilled.

Referring Physician Test Results:

After some minor issues the Referring Physician portal now completely functions as it is expected to. The Referring Physician can effectively without error, create a new patient, search for an existing Patient, Create a new order, search for orders that have already been created, and get the results from completed orders that the physician ordered.

Referring Physician Defects and Solutions:

Creating a New Order - The new order functionality is providing a null pointer error

Solution - the doctors analysis text field was not accurately being passed to the method.

Receptionist

Receptionist Test Cases:

To properly test the Receptionist portal we need to identity what the receptionist should be able to do, the functionality should include :

Accessing all unscheduled orders

Viewing all unscheduled orders

Adding an appointment time and date to an unscheduled appointment

Viewing all appointments that are scheduled for the current day and their order status

Checking in a patient once they arrive

To test the Receptionist we will be inserting new orders into the XamineRIS database that both are scheduled for differing dates, the current date, and unscheduled. Additionally, we will be testing whether or not the Receptionist is able to give an appointment time to all unscheduled orders, and if the receptionist is able to check-in patients upon arrival.

Receptionist Test Results:

After extensive testing to iron out some issues (see below) the receptionist portal now operates as expected. The receptionist can accurately view all of today’s orders including checking them in which will pass the patients on to the assigned technician. Additionally, the receptionist has access to all new orders that does not have an appointment scheduled, and can assign an appointment date and time to those orders.

Receptionist Defects and Solutions:

Patient Check-in - Initial testing revealed that receptionist was unable to check-in a patient due to a null pointer error

Solution - by changing the setModality() method to accept the input of a modality object rather than a string the receptionist can now check in a patient with the correctly selected Modality

Appointment Scheduling: Initial testing revealed that receptionist was unable to schedule an order due to a SQL command exception

Solution - creating a proper column for appointment time and the appointment date fixed the issue as formatting the datetime column was providing the error in java.

Today’s Appointments: Today’s appointments was displaying all scheduled orders regardless if they were for the current date or not.

Solution: updating the SQL query to only being in orders that are not null and scheduled for the current date

Radiology Technician

Technician Test Cases:

For the Technician to operate properly it needs to be able to:

Upload new images to the imaging order

Delete images from the imaging order

View the images in the imaging order

Be notified if no images are selected

The technician must be able to execute these functions in order to operate as expected. The users of the technician portal can effectively upload, view and delete images from an order before submitting them to the radiologist.

Technician Test Results:

After extensive testing and tweaking the imageviewer the technician portal is able to submit images to the order and pass those into the database for analysis. Additional tweaks to the image viewer now have the rest of the functions working as expected.

Technician Defects and Solutions:

Order Submission - The order submission button only changes the order status (used to track order progress) locally and not changed in the database.

Solution - The creation of a new method to update the database using a SQL command now properly updates the order status moving it to the Radiologist.

Image viewing - the images uploaded by the technician are too small and do display but a small fraction of the intended image.

Solution - Changing the dimensions of the image view allows the user to see the entire uploaded image.

Image Deletion - Deleting an image from the image viewer removes it from the local ArrayList but not from the database as intended.

Solution - updating our SQL statement resolved the deletion issue

Radiologist

Radiologist Test Cases:

In order for the Radiologist to operate functionally it needs to be able to:

See all the orders that are awaiting analysis

Be able to search for specific orders

View the orders that are ready for analysis

Add analysis to the order

Save but not submit the analysis

Save and Submit the analysis to the Referring Physician

To test these cases we will send varying orders to the radiologist to test whether each of the specified functions are working.

Radiologist Test Results:

After extensive testing of the Radiologist portal we believe that we have addressed all bugs and it should work completely as expected to. The Radiologist portal can successfully without error execute the operations laid out in the test cases.

Radiologist Defects and Solutions:

Saving analysis - When the Radiologist tries to save the analysis it still submits the order so the Radiologist can no longer access it.

Solution - Adding an if - else if clause inside the respective actions listener makes the save function accessible

Viewing Completed Orders - Radiologist unable to view orders which are awaiting analysis

Solution - Tweaking the search query being passed to the database now yields the expected orders to be displayed in the main page.