

CSIT 321 – Final Year Project

Deep Learning based COVID-19 X-ray Image Classification

Group - FYP-23-S3-07

User Manual

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1. Introduction

1.1 Purpose

The purpose of the user manual documentation for this website is to serve as a comprehensive guide for healthcare professionals, specifically doctors, and patients who will be interacting with the platform. It aims to provide clear and detailed instructions on how to effectively use the website's features and functionalities.

For doctors, the user manual will offer step-by-step guidance on the process of uploading X-ray images for diagnosis, interpreting the generated reports, and utilizing the platform to facilitate accurate COVID-19 diagnoses. It will also cover any additional tools or features available to them for a seamless experience.

For patients, the user manual will explain how to access and view the reports generated by the doctor. It will provide clear instructions on navigating the platform to ensure a user-friendly experience while maintaining privacy and security measures.

Overall, the user manual documentation will empower both doctors and patients to make optimal use of the website, ultimately contributing to the project's goal of enhancing healthcare outcomes in the face of the COVID-19 pandemic.

1.2 Target Audience

The project is tailored for healthcare professionals, specifically doctors, who will upload X-ray images for diagnosis using the model. Patients will have access only to view the reports generated by the doctor. Medical related personnel such as healthcare professionals will benefit from the model more from the accuracy and the speed of detection, enabling them to make well-informed decisions and improve patient care.

2. Overall Description

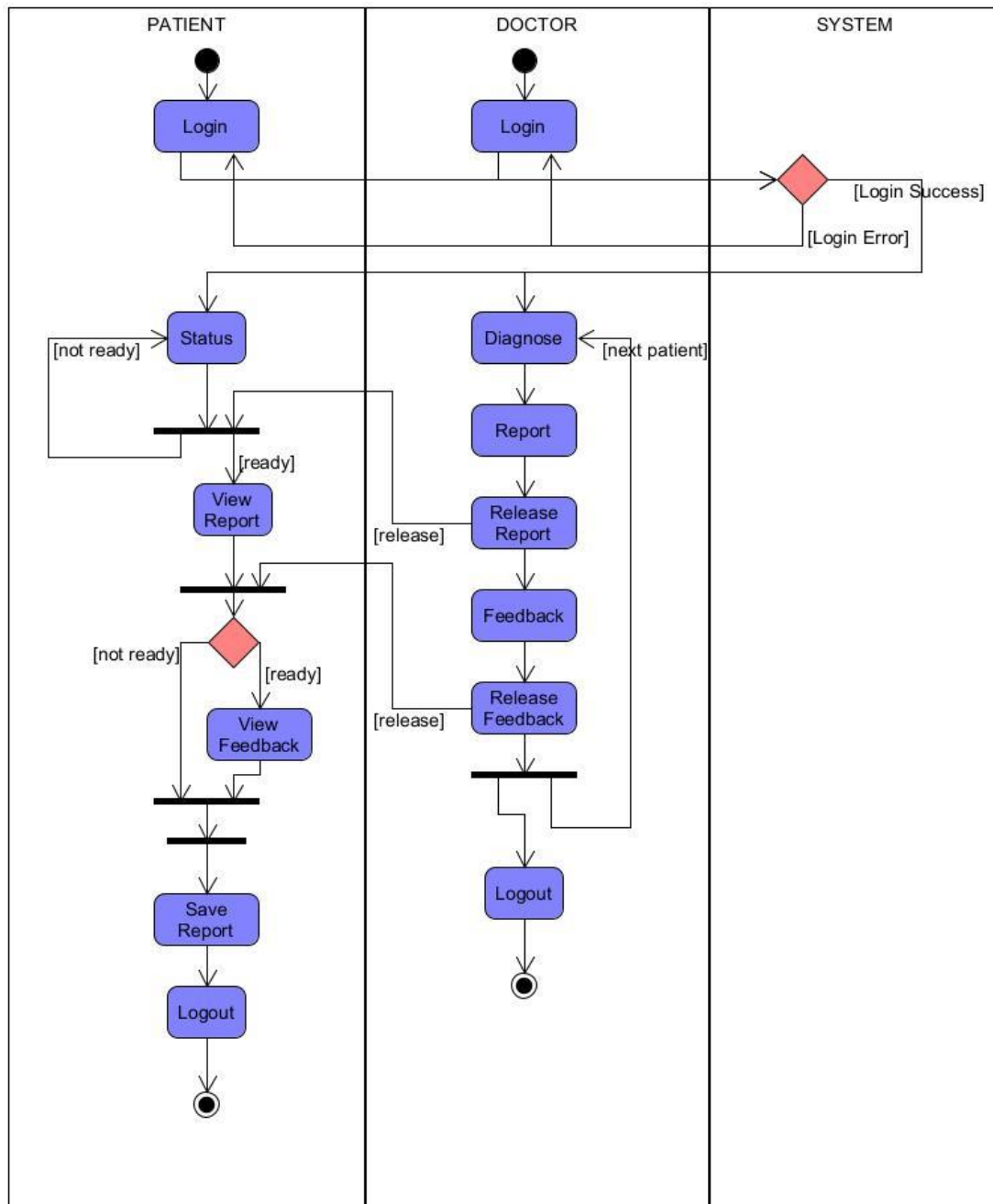
2.1 Use Cases Description

User	Function	Description
All users	Login	Users with correct login information can login and use the system.
	Logout	Users can logout of the system with a click.
	Create account	Users with not account and wish to use the system can create one, by providing some simple personal details.
Doctor	X-ray Image Upload	COVID-19 diagnosis. The uploaded images will be processed by the back-end model, to generate a analysis report .
	Report Generation	The generated report will indicate the outcome of the analysis, providing information for efficient communication with the patient.
	View Results	Doctor accesses results, which are generated based on the analysis of X-ray . The results will aid in making an accurate diagnosis for the patient.
	Write Comments	Doctors are able to write comments or feedback on the report, improving the patient's understanding of the diagnosis.
	Release Report	Doctor can releases the report to the patient. The patient will be able to access the report and comments on their condition.
Patient	Access Reports	Patient can check the status of their COVID-19

		diagnosis. The status shows whether the report is still under analysis or completed.
	View Report	The report contains the results of the analysis of the X-ray, informing the patient if the result is negative or positive
	Read Doctor's Comments	Patients can read the comments provided by the doctor. The comments may contain more insights on the diagnosis, helping the patient comprehend their medical condition more thoroughly.
	Save	Patient can save the report for further analysis and evaluation in the future.

2.2 Website Activity Diagram

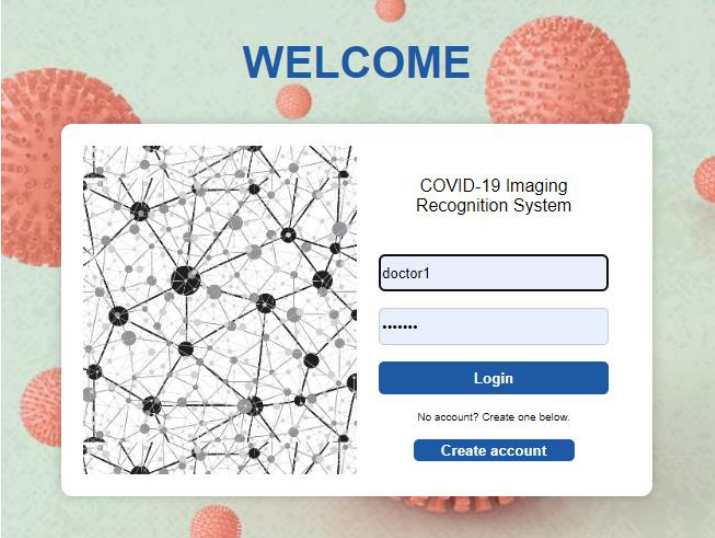
Website structure for users doctor and patient.

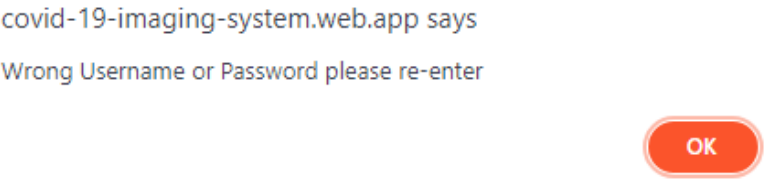
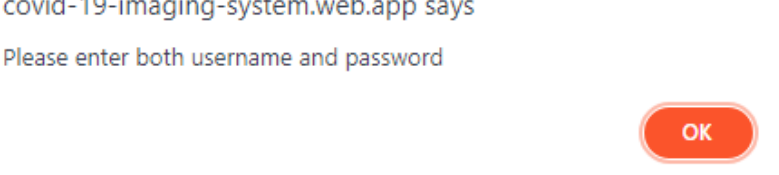


3. Website Product

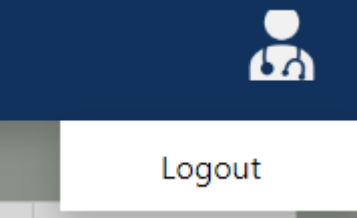
3.1 Account Features

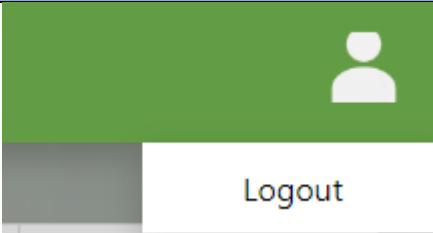
3.1.1 Login

Instructions	Screenshot
Fill in correct particulars and you will be brought to the corresponding main page.	

Possible errors	Screenshot
If you fill in a wrong username/password	
If one field is empty	

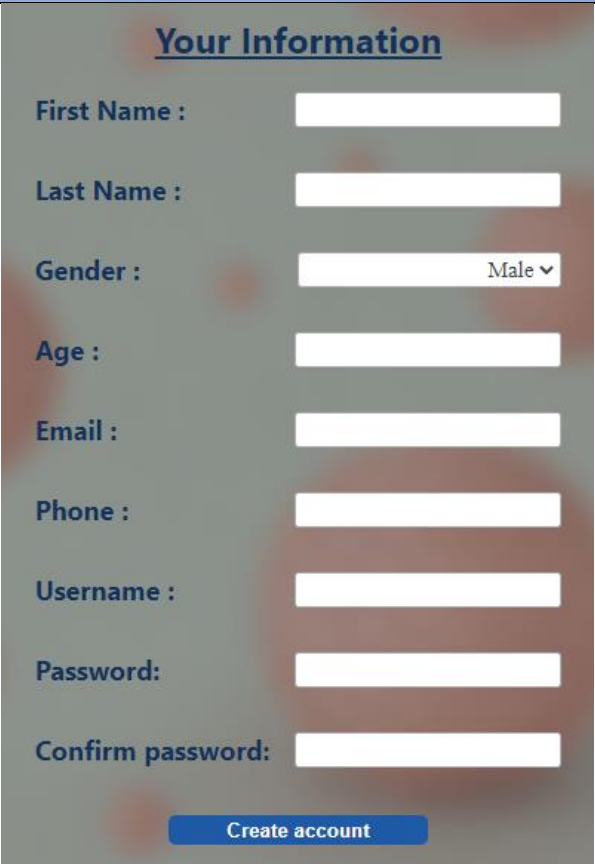
3.1.2 Logout

Doctor	Screenshot
Go to the navigation bar and click the logout button.	

Patient	Screenshot
Go to the navigation bar and click the logout button.	 A screenshot of a user profile menu. It features a green header with a white user icon. Below the header, there is a grey button and a white button labeled 'Logout'.

Error	Screenshot
This function has no possible error	

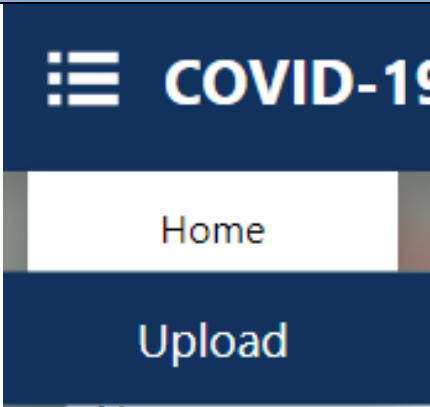
3.1.3 Create Account

User	Screenshot
Fill in all particulars and click "Create account button"	 A screenshot of a form titled 'Your Information' for creating an account. The form includes input fields for First Name, Last Name, Age, Email, Phone, Username, Password, and Confirm password. A dropdown menu for Gender is set to 'Male'. A blue 'Create account' button is at the bottom.

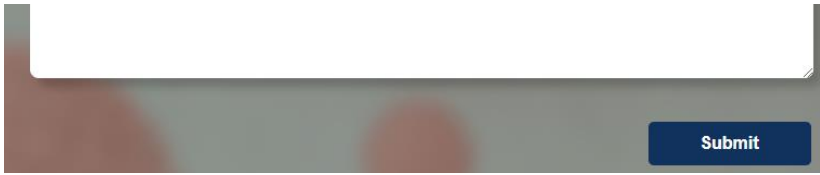
Possible errors	Screenshot
If any field is left empty	<p>covid-19-imaging-system.web.app says</p> <p>Please fill in all fields!</p> <p>OK</p>
If password and confirm password field do not match	<p>covid-19-imaging-system.web.app says</p> <p>Password does not match!</p> <p>OK</p>
Account exists	<p>covid-19-imaging-system.web.app says</p> <p>Account already exist</p> <p>OK</p>




3.2 User: Doctor

3.2.1 Uploading image for analysis



instructions	Screenshot
Go to the menu icon on the left of the navigation and click 'Upload' button.	


<p>Choose the image you want to upload from your local storage</p>	<div data-bbox="628 194 1190 667"> <h3>Upload X-ray</h3> <div> <input type="button" value="Choose file"/> No file chosen </div> </div>
<p>Fill in patient information on the right box of the form</p>	<div data-bbox="628 667 1190 1131"> <h3><u>Patient Information</u></h3> <p>ID : <input type="text" value="27"/></p> <div>Analyze Image</div> </div>
<p>Press analyse image. Wait for “Create Report” button will appear, this process might take awhile. Click create report to view the report.</p>	<div data-bbox="628 1131 1190 1585"> <h3><u>Patient Information</u></h3> <p>ID : <input type="text" value="27"/></p> <div>Analyze Image</div> <div>Create Report</div> </div>
<p>If you have any comments for the patient, you can type it in the comment box at the bottom of the report</p>	<div data-bbox="478 1585 1347 1877"> <p>Comments for patient :</p> <div></div> </div>

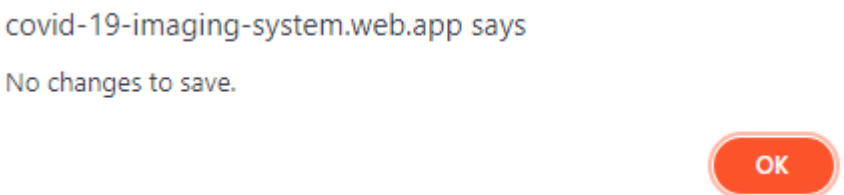
If you are ready to create the report and record it in the database, press the "Submit" button.	
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Possible errors	Screenshot
If patient ID filed is left empty.	covid-19-imaging-system.web.app says Please fill in all fields! 
If no image is uploaded	covid-19-imaging-system.web.app says Please upload an image! 
If image uploaded is not a lung X-ray	covid-19-imaging-system.web.app says Please select a Lung X-ray image. 


3.2.2 Edit comment for previously submitted

Instructions	Screenshot
From the home page, you can see all the submitted report.	
Find the report you wish to edit, and click on the pen icon.	

You are now in the report page, edit/add your comments.	<div>Comments for patient :</div> <div>(your comments)</div>
Press "Submit" button	

Error	Screenshot
No changes were made / Comment field I left empty	

3.2.2 Make report available/unavailable to the patient


instructions	Screenshot
<p>From the home page, you can see the status of the report.</p> <p>Find the report you wish to release, and click on the check box</p>	

Error	Screenshot
This function has no possible error	


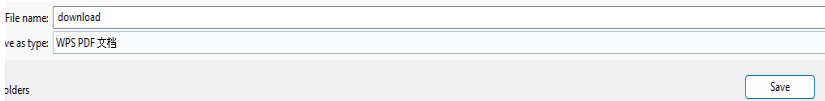
3.3 User: Patient

3.3.1 View analysis report and comment from doctor

Instructions	Screenshot																				
From the home page, you can see the status of your report.	<table><tr><th>Report ID</th><th>Doctor Name</th><th>Email</th><th>Status</th><th>Actions</th></tr><tr><td>41</td><td>John Doe</td><td>JohnDoe@gmail.com</td><td>Normal</td><td></td></tr><tr><td>47</td><td>Justin Lee</td><td>justinLee@gmail.com</td><td>COVID</td><td></td></tr><tr><td>51</td><td>John Doe</td><td>JohnDoe@gmail.com</td><td>Negative</td><td></td></tr></table>	Report ID	Doctor Name	Email	Status	Actions	41	John Doe	JohnDoe@gmail.com	Normal		47	Justin Lee	justinLee@gmail.com	COVID		51	John Doe	JohnDoe@gmail.com	Negative	
Report ID	Doctor Name	Email	Status	Actions																	
41	John Doe	JohnDoe@gmail.com	Normal																		
47	Justin Lee	justinLee@gmail.com	COVID																		
51	John Doe	JohnDoe@gmail.com	Negative																		
Find the report you wish to view, and click the eye icon.																					

Possible error	Screenshot
Report is not available. The eye icon will have a strike across it.	

3.3.2 Save analysis report

instructions		Screenshot
From the view report page, find the "Print and Save" button and click on it		
Click save and choose a destination from your local storage and click save again		

Possible error	Screenshot
This function has no error	