



# Doctor-Patient Remote Consultation System with Secure Medical Image

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## ABSTRACT

The name of this project is Doctor-Patient Remote Consultation System with Secure Medical Image. The main purpose of this system is to design a consultation system for doctors and patients which consist of real time video call and encrypted medical files functions. This system allows doctor to conduct medical consultation without having face-to-face session. This is because during the pandemic of Covid-19, face-to-face consultation might increase the risk of spreading and infecting of Covid-19 to the community. By implementing this project, it would help the community to get better treatment for minor diseases during the pandemic without having to scare for the spread of Covid-19. Also, people who live in rural area or having difficulties to get medical aids would also benefit for this system. For long term treatment, the medical images such as medical report, X-ray images, MRI images, Echocardiogram and etc. would be sent to each other which needed to be encrypted, so that the privacy information of the patient would not be disclosed. This system used simple UI to make it more user-friendly and more professional. Thus, it looks less complex and easy to use.

## PROBLEM STATEMENT

- Privacy of multimedia data is not concerned.
- Difficulty of people to receive face-to-face medical consultation during pandemic of Covid-19.
- Difficulty of doctor to perform their task on time.

## OBJECTIVES

- To design a consultation system for doctors and patients which consist of real time video call and encrypted medical files functions.
- To develop the proposed system embedded with the DNA sequence operation encryption.
- To evaluate existing image encryption algorithms with comparing between the effects of the researched algorithms.

## METHODOLOGY

The methodology used in this project is Waterfall Model as shown in Figure 1.

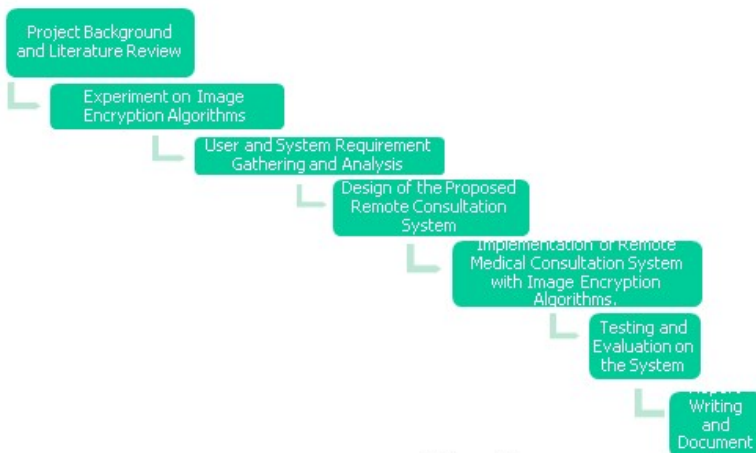


Figure 1: Waterfall Model

## CONCLUSION

- The proposed web application has achieved the objectives stated.
- Limitation:
  - i. Appointment module is under-developing due to the application of embedded research element is too time consuming.
- Future Work:
  - i. Complete appointment module
  - ii. Able to pass receiver email to image sender module.

## IMPLEMENTATION

The web application is implemented with the following modules:

- Login and Register
  - i. The doctor and patient must register and login to the system to access the functions.
  - ii. Uses email address as login account.
- Private Chat
  - i. Allows users to send text message to each other.
- Video Call
  - i. To perform video chat function for remote consultation session.
- Embedded Research (image encryption)
  - i. To encrypt and decrypt image before the users send to each other.
- Search
  - i. Used to search for doctor/patient.
- Image sender
  - i. Used to send image to each other via email.



Figure 2a: Login



Figure 2b: Register



Figure 2c: Chat



Figure 2d: Video Chat

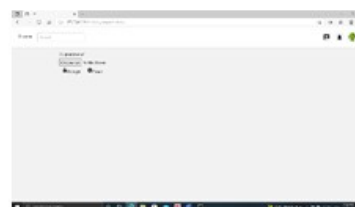


Figure 2e: Embedded Research



Figure 2f: Search