

ABSTRACT

Cataract is an eye disease that is the number one cause of blindness. Cataracts occur when there is a buildup of protein that makes the lens of the eye cloudy. According to a report from the world health organization, it is estimated that the number of blind people in the world will exceed 40 million people in 2025. Therefore, cataract management must be taken seriously by conducting regular check-ups with an ophthalmologist.

However, visiting the hospital regularly is not efficient for the community, especially people who are busy on working and far away from the countryside. This is what motivated the author to design a cataract detection website, namely the Find Cataract System (FCS) Website that can perform early diagnosis by issuing statements for normal eyes, mature cataracts, and immature cataracts. Users will fill in personal data on the website created, the authors use the Advanced Encryption Standard (AES) 256-bit algorithm and the Rivest Code 4 (RC4) algorithm so that the security of user data is maintained.

From testing the two algorithms, it was found that AES-256 has an average Avalanche Effect value between 45% - 60% while RC4 has an Avalanche Effect average value above 70%, while for the encryption duration AES-256 has an average time of 90.3 s while RC4 of 18 s. Based on the Quality of Service test results from sending FCS website data to the API Server (Heroku) the average throughput value is 747.22 Kbps, packet loss is 0.12% and delay is 24.1 s.

Keywords: Cataract, Web Application, Advanced Encryption Standard (AES), Rivest Code 4 (RC4).