

## ABSTRACT

Chess is a much-loved sport in Indonesia since it is the kind of sport that can sharpen the mind of the players. These players are two-side opponents, namely the white player and the black player. These players move the chess pieces to win according to chess game rules. In addition, there are various chess game types, i.e., classical chess, rapid chess, and blitz chess. The difference among these types is only in terms of game duration. It is worth noting that chess matches in Indonesia are generally held at either regional, national, or international levels.

However, many chess match system is still manually counted. In the 2014 FIDE Chess Rules book (Fédération Internationale des Échecs) or World Chess Federation, it is noted that players must manually write each move step through written notation. Thus, such a requirement might break the concentration of the players, dividing his/her mind between moving chess pieces and taking note of the moving step. Therefore, if an innovation such as the digital Smart Chess Board is available, it would certainly help to digitize the chess match scoring.

This project proposes a design of a Smart Chess Board to assist the players during the match. For instance, players do not need to write notations manually because their every step has been recorded in the database on the webserver and displayed digitally on a screen. The proposed system supports three types of chess games. The performance evaluation of the system shows the speed of data transmission is similar among the three types of chess games, which have a minimum delay of 6 seconds and a maximum delay of 14 seconds. Data transmission measurement to the webserver also recorded a 100% success percentage for both classic chess and fast chess. However, for blitz chess, there was an error, resulting in 0% success, due to the delay time being longer than the movement time of the chess pieces.

**Keywords:** Chess board, hall effect switch, notation