

ABSTRACT

DESIGN OF AN ESP32-BASED E-VOTING DEVICE (CASE STUDY: KPU BANYUMAS)

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Elections are a means of exercising popular sovereignty based on direct, general, free, secret, honest and fair principles. Elections are a tangible manifestation of procedural democracy carried out by the people as a manifestation of democratic governance life. In running the election, the KPU is trusted by the community to be able to carry out clean elections and be able to accommodate all the people's voting rights. KPU Banyumas is the organizer and administrator of the general election of Banyumas Regency, Central Java. According to Mr. Hanan Wiyoko, S.I.P, M.I.Kom., as the technical division of the Banyumas Regency election, the most pronounced obstacle is during the vote counting process where the administrators have to check whether the ballots are valid or not one by one and various problems related to the use of paper as ballots. This research provides a solution by designing an ESP32-based e-voting tool by applying QR-Code, RFID sensor, and touch sensor as a voting tool. This research aims to change the voting procedure from paper ballots to e-voting to increase the efficiency of time, work, and paper usage and to implement QR-Code, RFID, and touch sensor systems as verification and authentication of voters in the e-voting system to reduce the potential for fraud in the voting process. The results of 10 blackbox tests on the RFID sensor, touch sensor, and ESP32 cam produced no errors. And system performance testing found no errors.

Keywords: *E-Voting, General Election Commission, ESP32, RFID, QR-Code.*