Design and Development of an ESP-32 Based Keyless Door Security System

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ABSTRACT

Today's door locks still use conventional keys, making them less efficient for homes with many doors because there are too many keys to carry, besides that conventional locks are easily opened by thieves. Thus, a more practical and efficient lock is needed, from this problem the author has the idea to produce a safe and practical door safety device. It is an observation process related to the title to be carried out. In this observation process there are several aspects that are considered, such as design models, work systems, designs, tools and materials, failure factors, and success rates. This observation serves to add important information regarding the title to be worked on. The main function of the system is the process of opening and closing door locks following the remote keyless signal captured by the system signal. Based on this function, a design is made to facilitate system design, including placing door handles and locks with servo motor that can lock the door firmly even though it only uses one key point. Based on the test results in table 5.1 where the test is carried out by providing open and closed triggers with different distance levels. With random distances, the logical values that appear vary. The value is declared appropriate if the door is open when the keyless is at a distance of less than 15cm, while the door remains closed if the keyless is at a distance of more than 15cm. From the 15 tests, 12 tests were found to be appropriate and 3 were not appropriate. Thus, the percentage value of system success is 80%. A keyless door lock system can perform functions according to the system design, including being able to lock doors automatically. The results of automated tests that have been carried out and obtained a success rate of the system reaching 80%.

Keywords: *Locking System, Keyless, Processing, Automation*