

## ABSTRACT

*The door is the most important part of a building whose security really needs to be considered to prevent the entry of someone who wants to attempt theft. Buildings that have a lot of space must have a door with a strong security system, one of which is a hotel. At this time there are still many hotels that use RFID cards as access to the room door. The use of RFID cards still has many drawbacks, including guests often leaving RFID cards in the room so that guests can no longer enter the room and are required to report to the receptionist in advance, RFID cards are also easy to duplicate by irresponsible people, RFID cards are also easy lost so guests who lose their RFID cards will be fined as a card replacement fee.*

*Therefore, a door security system was created using face recognition with the YOLO algorithm. The YOLO algorithm is used to detect faces for anyone who wants to access the door. The YOLO method has an accuracy rate of 100% with front, right, and left facial angles.*

*The results obtained from this Final Project is a system that can detect faces well with an accuracy rate of 100%. For each data the highest confident score can reach 80% and the lowest is 50%. Predictions that get a confident score  $\geq 50\%$  then the solenoid door lock will open. For precision, the result is 94,4%.*

**Keywords:** *Security system, face recognition, YOLO.*