ABSTRACT

The increasing of cost life has encourage many crime that happen. Nowadays, stealing an important document and stuff is usual thing. We need some inovations to make a better security system. My final project "PROTOTYPE DESIGN OF ROOM SECURITY SYSTEM USING MONITORED AND ENCRYPTED RFID BASED ON ARDUINO" is maked to give a solution for that problem.

This final project use Radio frequency Identification (RFID) technology with using unique ID in every tag ID. RFID module that used is ID-12 Inovations with passive tag ID. Moreover, to increase level of security, the system will equipped with encryption algorithm AES-128 bit. We will use database system to monitoring all access that happen in system.

When tag ID card detected by reader RFID, then the will going into encryption process to keep the ID secret. After that, system will doing checking process, if incoming ID match with ID in database. If ID is known by database system then indicator led will give signal. Otherwise, if tag ID didnt match, then system will give a warning notification "ID user Unidentified". All access that happen will stored in database system, so we can looking back access that happen and the time.

When experiment process, we use 4 tag ID with different unique ID. three of them has registered in database system and the other is unregistered. Based on experiment, for delay process that reader can handled is more than 1 second. Reader ID can make a good detection for delay time more than 1 second with accuracy 100%. moreover, implementation encryption algorithm make increase level of security for incoming tag ID. Work range for RFID reader to read the tag card properly is up to 4,7 cm. We can make a conclusion that encryption algorithm AES-128 bit is useful to keep a tag ID secret and increasing level of security system.

Keywords : RFID, Tag ID, AES-128 bit, Database, Arduino