Automatizarea casei si intreaga idee despre case inteligente devine din ce in ce mai importanta si mai cautata in secolul 21. Obiectul principal al acestui proiect este acela de a dezvolta si a crea un sistem inteligent prin care putem acumula informatii de la diferiti senzori din casa pe telefon si de a controla functionalitati ale casei noastre direct de pe smartphone-ul nostru. Tehnologiile folosite in acest proiect sunt protocolul de comunicatie wireless - Wi-Fi; ESP-NOW care este un protocol de transmisie wireless creat de Espressif intre mai multe placi de dezvoltare ESP32; diferite protocoale de transmisie seriala - uart, i2c, spi; baze de date pentru acumularea datelor si protectia acestora; o parte de front-end in care vom avea interfata utilizatorului. Aplicatia propusa permite controlul facil al utilitatilor din casa: stingerea/aprinderea becurilor, pornirea/oprirea A/C, pornirea/oprirea TV. De asemenea nu se folosesc telecomandele aferente fiecarui device, ci sistemul este capabil sa invete si sa reproduca semnalele IR de la telecomanda fizica, si sa foloseasca in schimb butoane de pe aplicatia web, pe telefon. Toate acestea fiind implementate in reteaua proprie, folosindu-ne de ssid-ul router-ului Wi-Fi si de parola retelei pentru a crea un sistem inteligent, fara fire si retele fizice complexe.

Home automation and the whole idea of ​​smart homes is becoming more and more important and wondered in the 21st century. The main goal of this project is to create and develop a smart system through which we can receive data from different sensors on our phone and control the functionality of our home directly from our smartphone. The technologies used in this project are the wireless communication protocol - Wi-Fi; ESP-NOW which is a wireless transmission protocol created by Espressif between several ESP32 development boards; different serial transmission protocols - uart, i2c, spi; databases for data accumulation and protection; a front-end part where we will have the user interface. The proposed application allows easy control of household utilities: turning on / off light bulbs, turning on / off AC, turning on / off TV. Also, the remote controls for each device are not used because the system is able to learn and reproduce the IR signals from the physical remote control, and to use the buttons on the web application on the phone instead. All this things are implemented in our own network, using the ssid of the Wi-Fi router and the network password to create an intelligent system, without wires and complex physical networks.