Assignment 6 - flutter IOT internship

Team Members: -

TL: Mahmoud Essam Fathy: 20221460231
Ziad Ashraf Hafez Gaber: 20221374025
Ziad Ashraf Ibrahim Taher: 20221369225

- This Arduino code demonstrates the integration of an ESP32-based device with Firebase Realtime Database. The code establishes a Wi-Fi connection, retrieves user input from a keypad, and performs different actions based on the input. It reads data from an IR sensor, maps the values, and updates the database with the sensor readings and corresponding timestamps. Additionally, the code allows for appending data to the database and deleting specific nodes. The program also includes features such as servo motor control and an LCD display for visual feedback. Overall, this code showcases the implementation of IoT functionalities using Arduino and Firebase.
- The provided code consists of three functions: CurrentMode(), AppendMode(), and DeleteNode(). These functions demonstrate the integration of an Arduino device with Firebase Realtime Database and showcase various functionalities.
- In CurrentMode(), the code retrieves the current time from the database and reads data from an IR sensor. It then maps the sensor readings to a 0-180 range and updates the database with the raw and mapped values, along with the timestamp. Additionally, it displays the mapped IR value on an LCD screen and controls a servo motor based on the sensor readings.
- The AppendMode() function reads data from an IR sensor, maps it, and creates a Firebase JSON object containing the raw and mapped values, as well as the timestamp. This JSON data is appended to the database under a specific node named with the current timestamp.
- The DeleteNode() function allows for the deletion of a specific database node based on the current timestamp.

It supposed that we worked with append mode perfectly!, but we faced problems sadly
1- Current mode supposed to edit in last timestamp in firebase also delete node work
2- Append perfect and send nodes with timestamp of appending, but we couldn't handle the continues of time

Solution was with "Query Fillter Proccess"

Mahmoud Essam, Ziad Ashraf, Ziad Ashraf
Supervised by: Eng. Muhammed Hatem

Flutter App

The program has 5 screen, Login – Register – Home screen – Control – Read

-Login : Has email and password auth system connected with firebase

-Register : if you don't have account so you need to perform new one

-Home screen : will have 2 button navigate for screens

-Control : will send reads to firebase and then control door

-Read : to retrieve these reads from firebase and plot it

The programme has been tested in Servo control and assigned in video
Everything is uploaded in folder

Mahmoud Essam, Ziad Ashraf, Ziad Ashraf
Supervised by: Eng. Muhammed Hatem