Name: *Abdul Manan*

PHP Register:

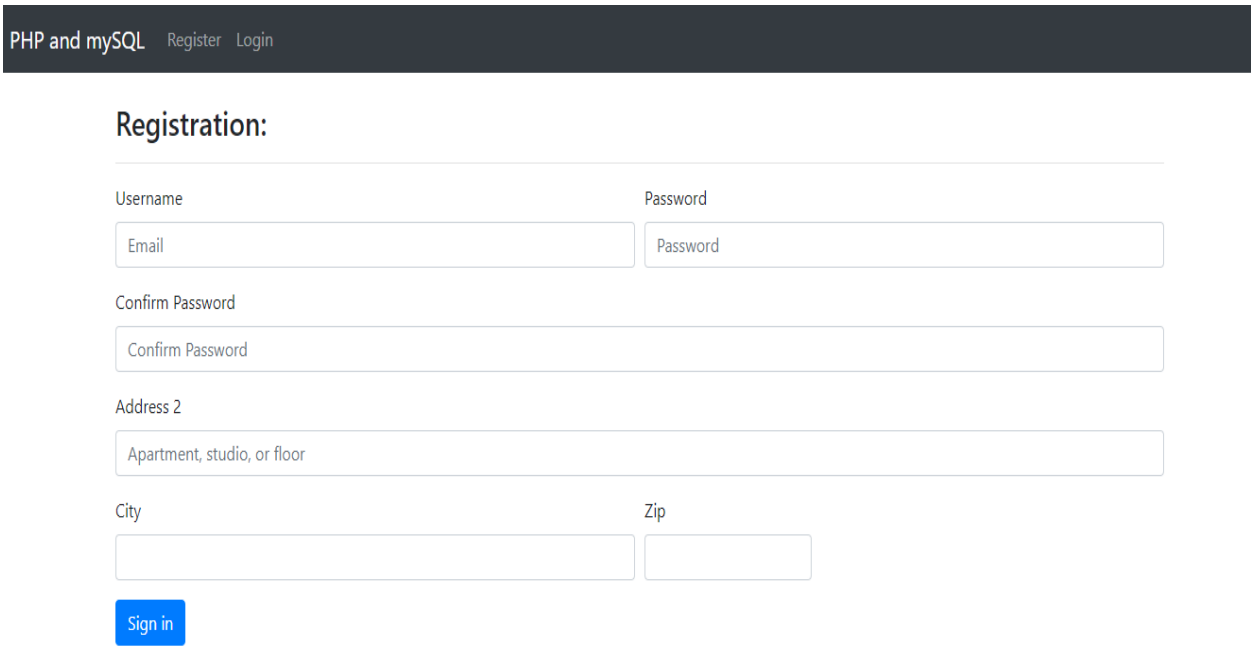

Figure 1 PHP Registration Page

PHP Login:

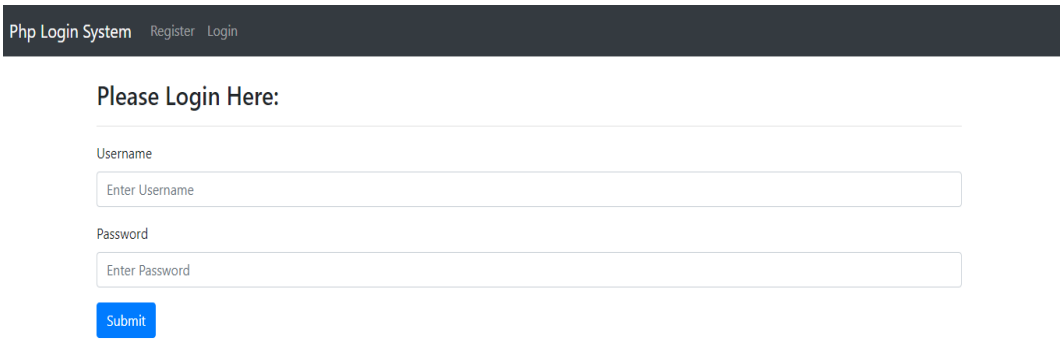

Figure 2 PHP Login Page

MySQL Database:

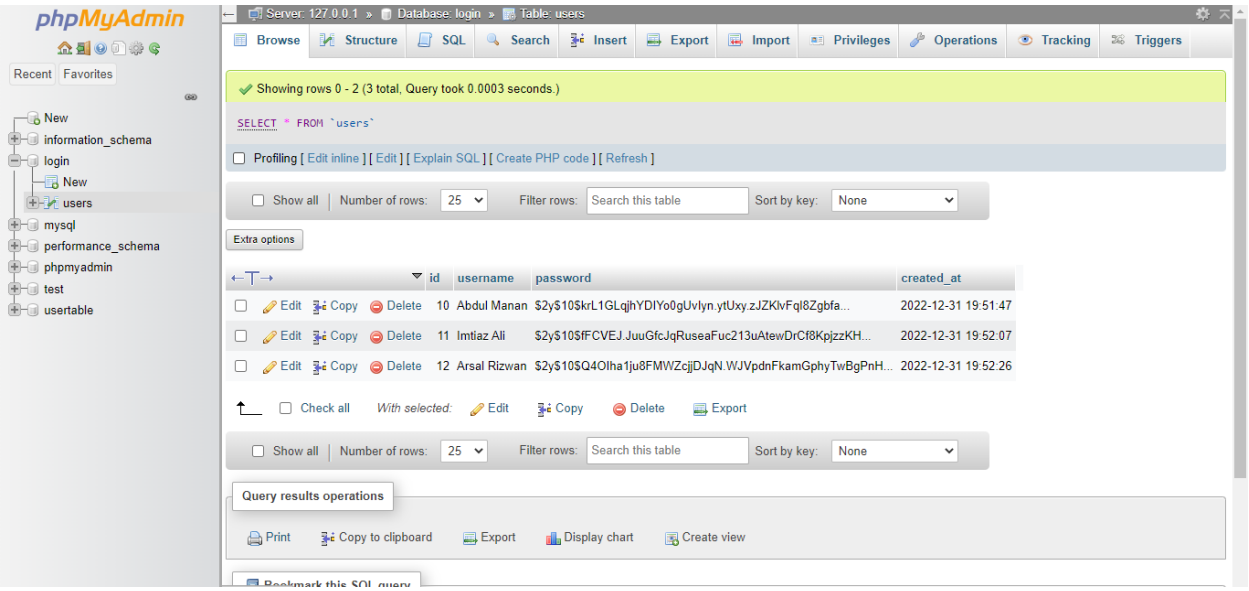

Figure 3 SQL Database

WEBPAGE:

After entering the correct credentials, we can access the webpage. We made a webpage over HTML, CSS, PHP and JavaScript where Professor can enter final result of a student over the website.

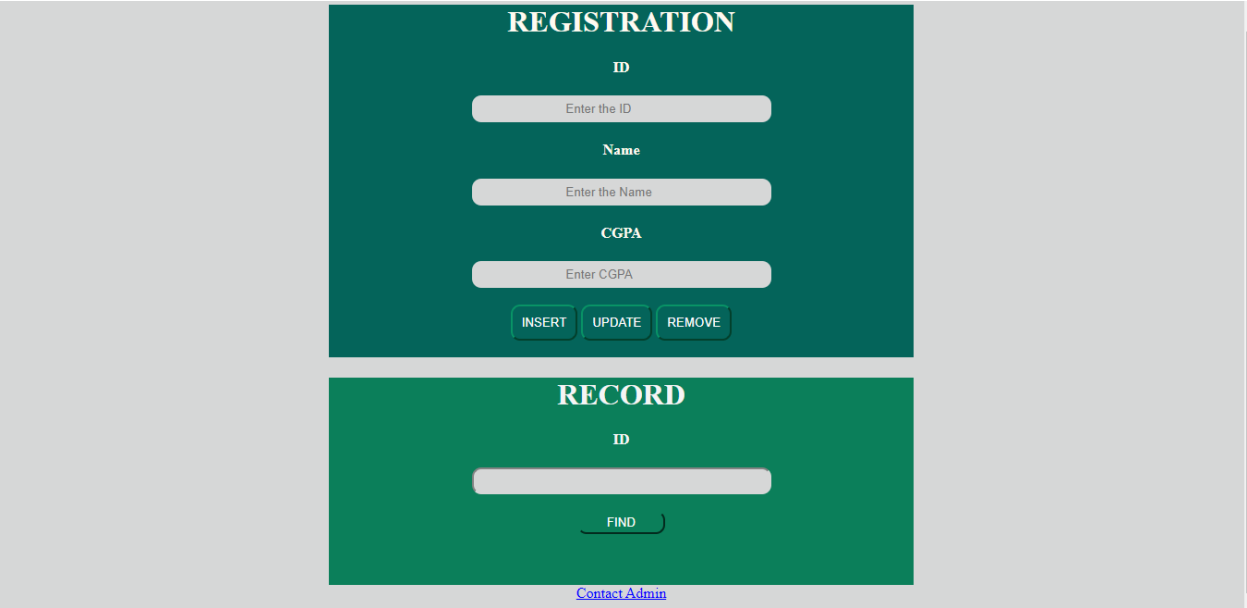

Figure 4 Front End of Website

Figure 5 Entering Data for a Student

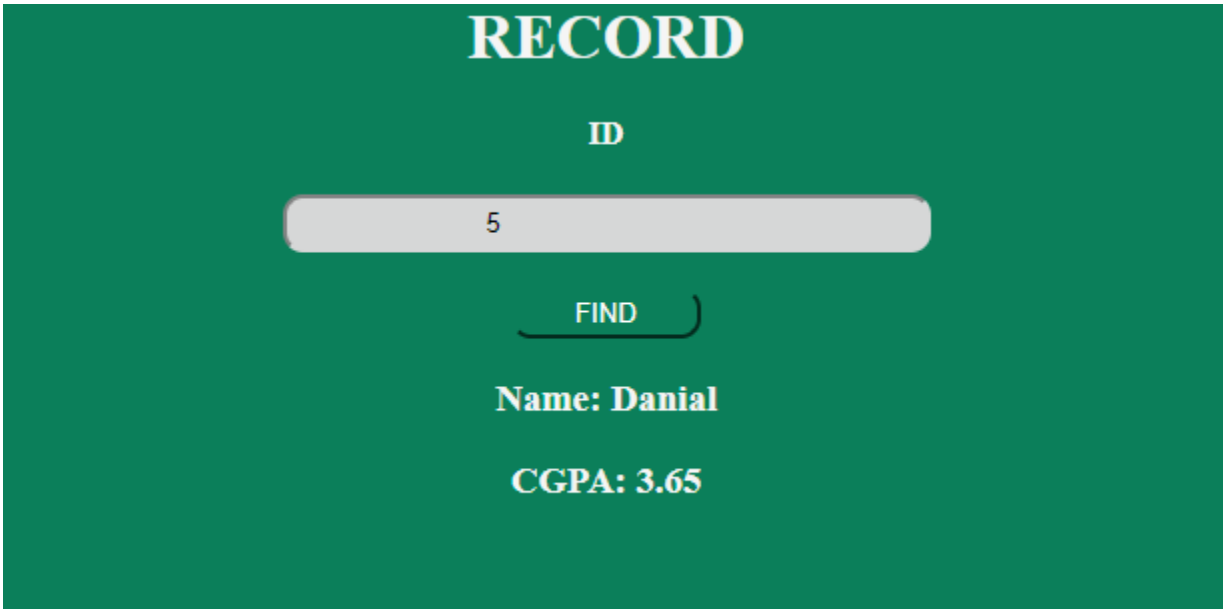

Figure 6 Checking the successful storage of Data

```
<script type="module">


    // Import the functions you need from the SDKs you need
    import { initializeApp } from "https://www.gstatic.com/firebasejs/9.14.0/firebase-app.js";
    // TODO: Add SDKs for Firebase products that you want to use
    // https://firebase.google.com/docs/web/setup#available-libraries

    // Your web app's Firebase configuration
    const firebaseConfig = {
        apiKey: "AIzaSyA0DdnMW_tDgJLd5BZX2dlWDwKqs-BbcY8",
        authDomain: "pro3-1df7b.firebaseapp.com",
        databaseURL: "https://database-3ef1a-default-rtdb.firebaseio.com/",
        projectId: "pro3-1df7b",
        storageBucket: "pro3-1df7b.appspot.com",
        messagingSenderId: "884996298701",
        appId: "1:884996298701:web:0aa6561650bbd3c89dd684"
    };

    // Initialize Firebase
    const app = initializeApp(firebaseConfig);
```

Figure 7 Connecting Firebase APIs

FIREBASE:

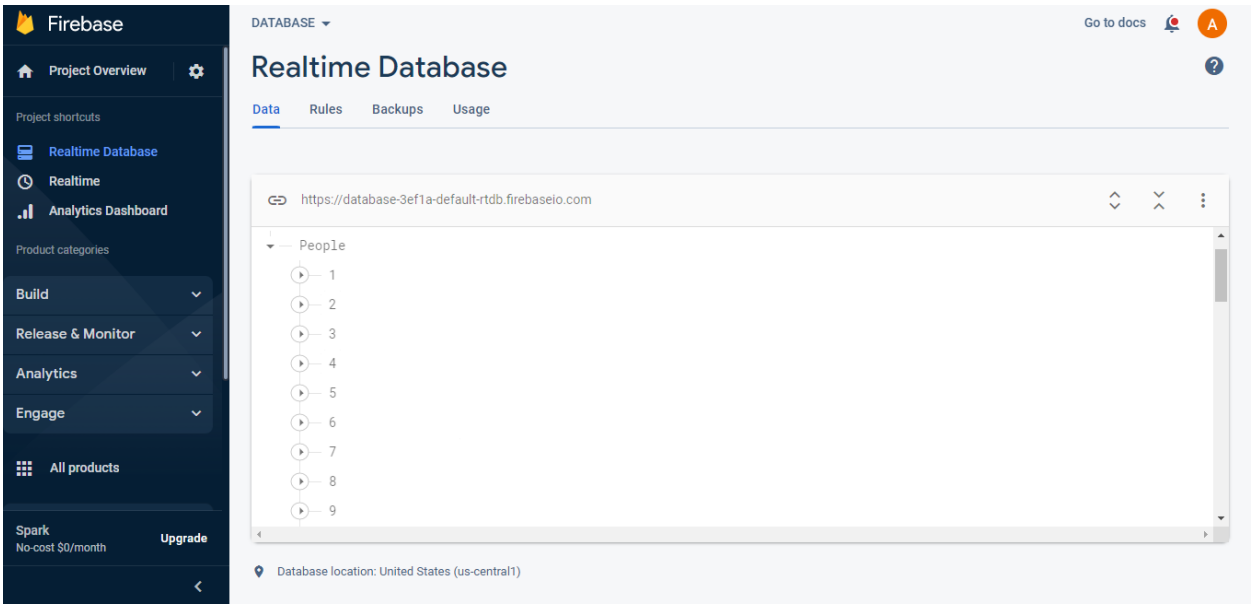

Figure 8 Storing data for long term record on Firebase Realtime Database

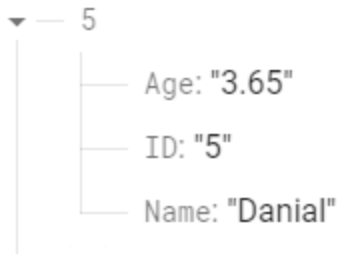

Figure 9 Stored Data of Student

NODE-RED:

It's an IOT Platform to display data in real time. Its back end contain nodes and flows. Data through firebase was sent to two platforms. Firstly, it was sent directly to NODE-RED front End. Secondly, Data was stored in Excel Sheet, and it gets updated in real time.

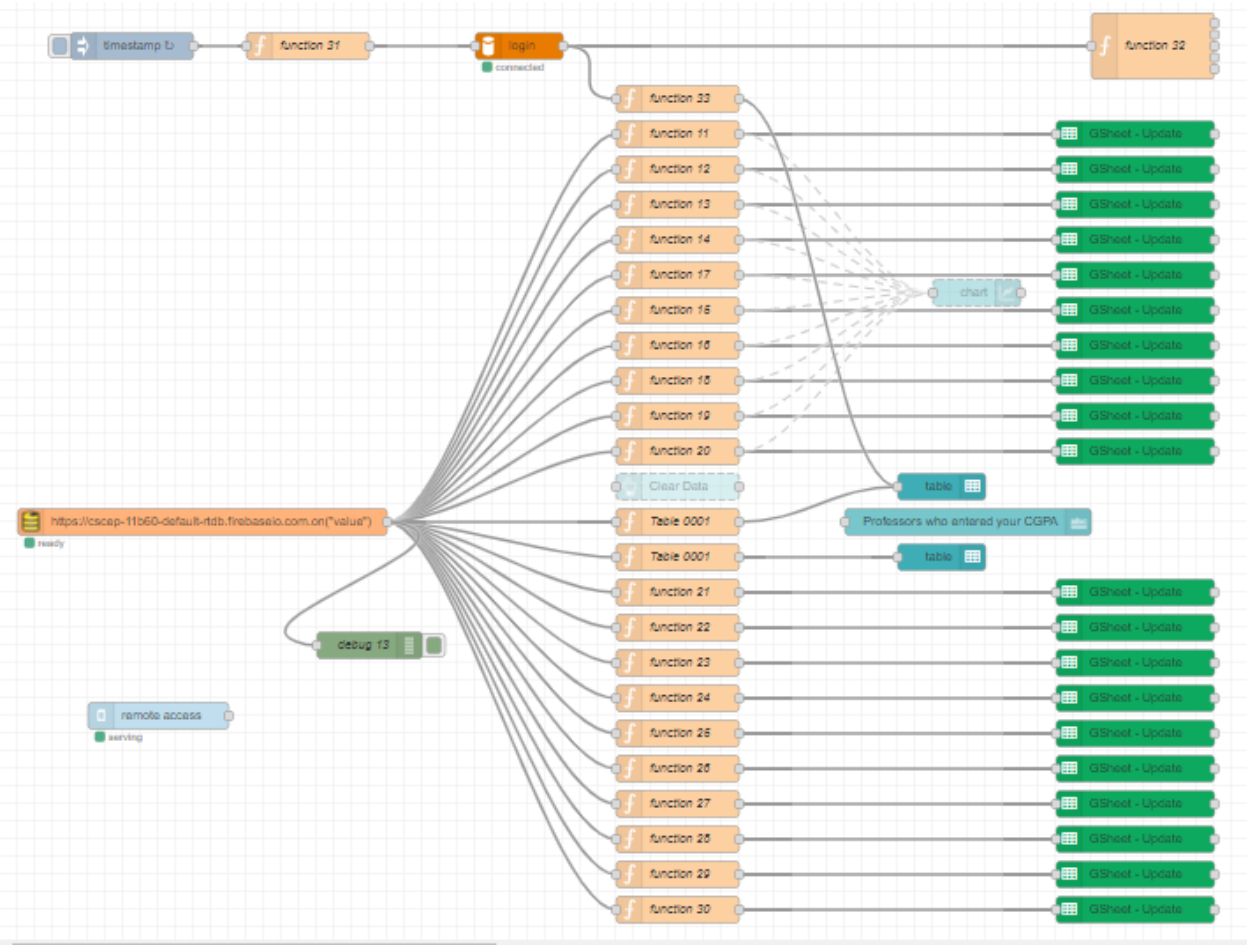

Figure 10 Back End Flows and Nodes of NODE-RED

Grades

ID	Name	CGPA
1	Ali	3.66
2	manan	3.33
3	Talha	3.5
4	Imtiaz	3.5
5	Danial	3.55
6	Haider	3.44
7	Sadiq	3.77
8	Kanwar	3.65
9	Anas	3.9
10	Zain	3.22

Figure 11 Students can see the data through this Front End Visible to them

Professors who entered your CGPA

ID	Professors
1	Admin
2	Waqas Ahmad
3	Arsal Rizwan
4	Imtiaz Ali
5	Abdul Manan

Figure 12 Students can see all the professors who entered their data

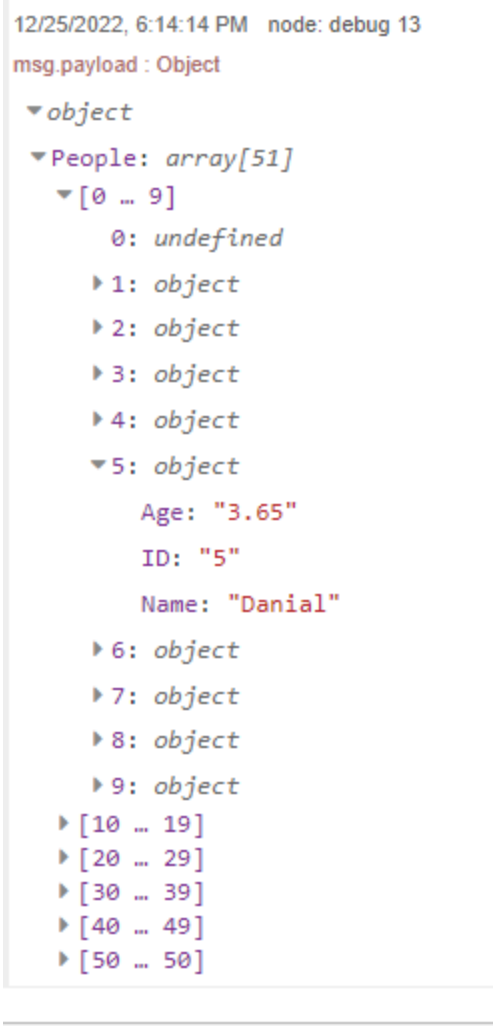

Figure 13 Data is stored in msg payload through this format

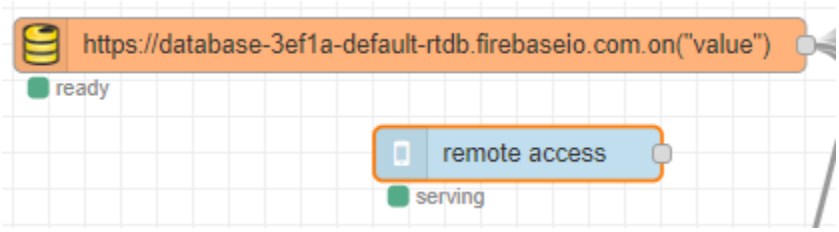

Figure 14 Nodes Used for Firebase and Remote Connection

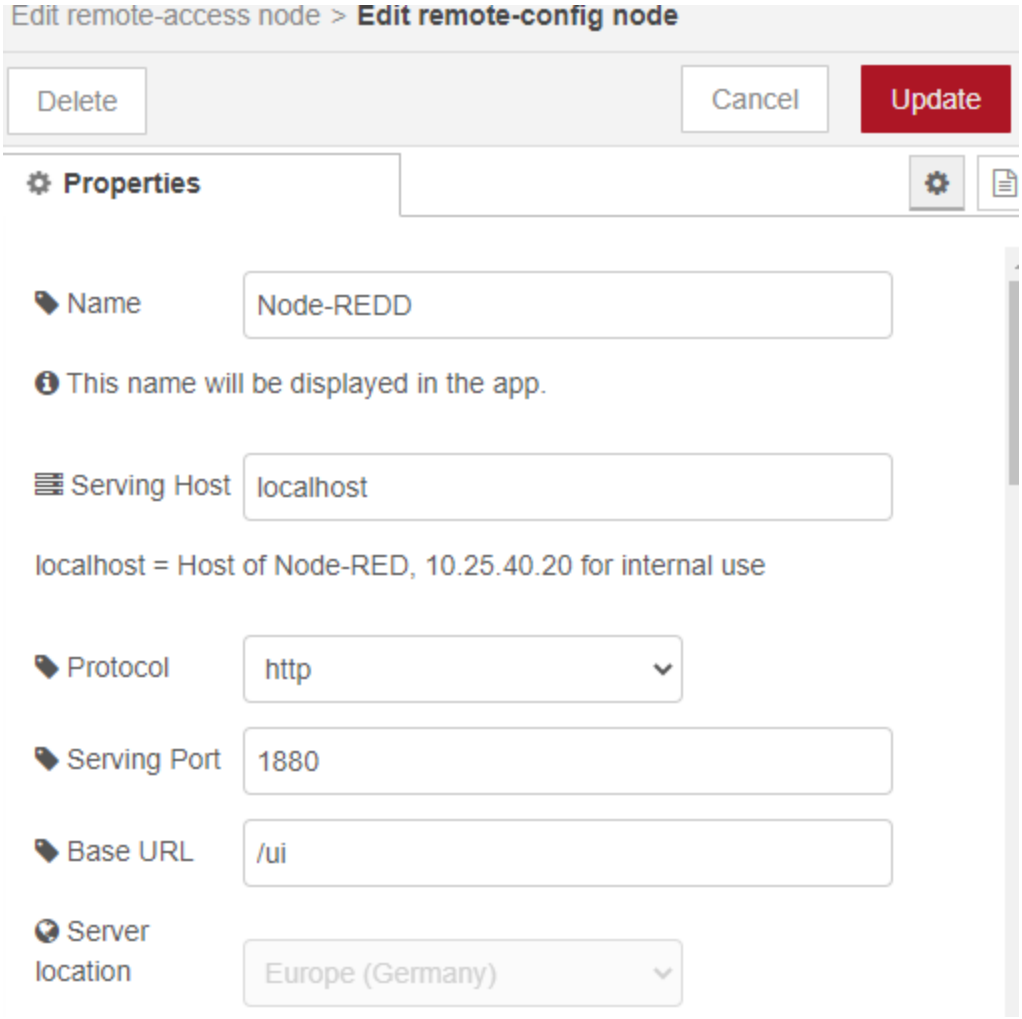

Figure 15 Configuration of Remote Access

Figure 16 Multiple devices could be connected to access data through barcode

Contact Form:

Figure 17 Contact Form by Professors to contact admin that send data to Gmail and Excel

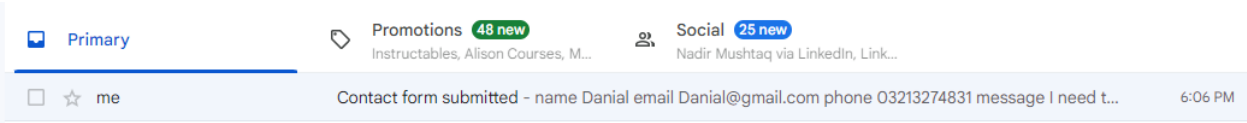

Figure 18 Data in Gmail

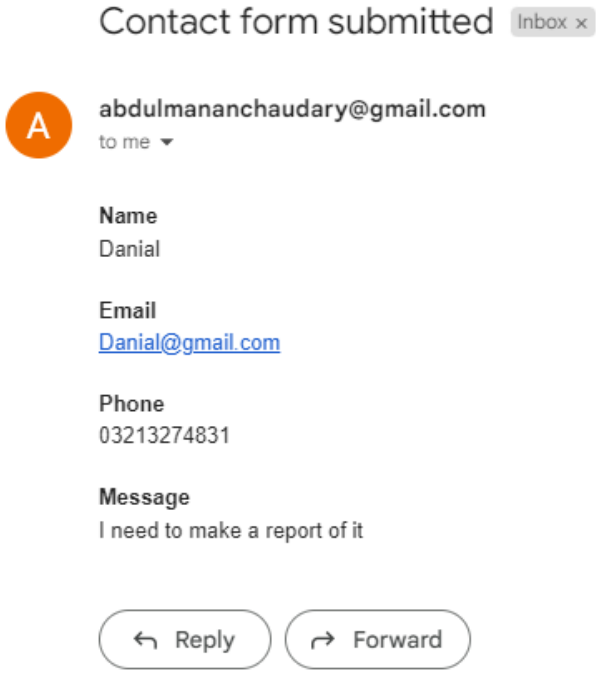

Figure 19 Gmail Data

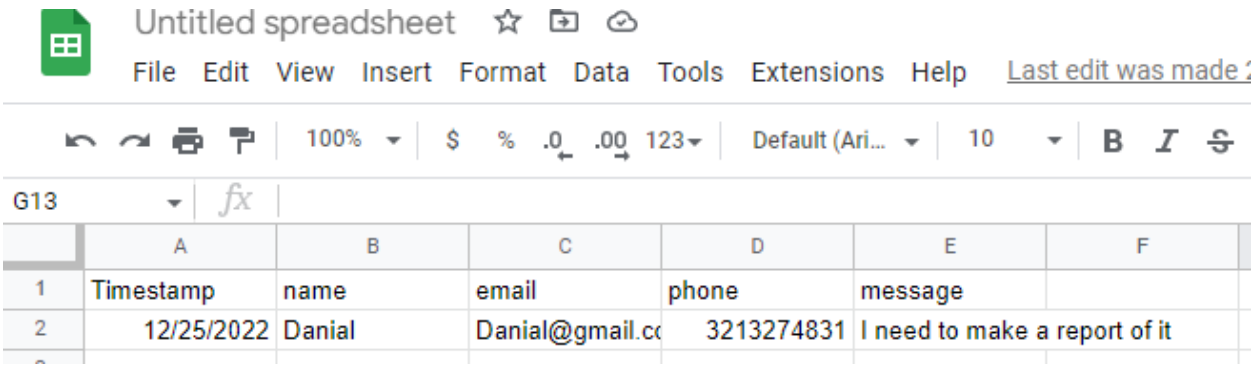

Figure 20 Data on Excel Sheet

Conclusion:

We made SRA result portal for university that manages multiple databases using IOT platform NODE-RED. Main motive is to make ease for people and administration to easily access and manage data thoroughly. We learned about the connection of multiple interfaces through extensions and APIs and their uses. We learned multiple solutions for communication in between devices to manage data thoroughly.