5. System Build and Technical Notes

We have chosen our group work as a MERN project. Both Record Management system and student portal are made on MERN Stack. M for Mongo Db which is very popular for NoSQL which stores the records in the format of documents. We use mongoose to interact with Mongo Db. E for Express, known as Node JS framework for backend and acts as middleware. R stands for React JS, popular for JS Frontend library backed by Facebook and N for Node JS, which provide runtime environment in server for JS code. In our project, frontend was from react where we have used react hooks which replaced workloads of writing lifecycle methods with classes. All division are replaced by the components. React routing is also used here for navigation. In backend, NPM allowed us to run our project in our pc. Express made our code simpler by using routes which gave path for communicating with database, controller which handled CRUD, models, helped for creating the schema.

5.1 Technically Difficult Code Section

As this was our first project in the MERN and with the low time frame, we must skip very complex operation from our project. But there is a code in attendance module where we have implemented the importing of the documents from other collections and performing the crud operations in it.

5.1.1 Create Attendance Record

A screenshot of a computer

Description automatically generated with medium confidence

Here, after creating the attendance record the data is send to the server. At server, it checks the data from the following code and if it is fine and perform the above operation. This was very complex for us as it involves finding the documents from the other collection and saving it in own section.

Above it finds the students record which has same course, level, batch, section as data send from the client while creating attendance record. When it gets the data from student collection, it will save the documents to the attendance student collection.

5.1.2 Take attendance

A screenshot of a computer

Description automatically generated with medium confidence

Though it is not hard as previous, but it was something where we were performing operations on the array which was very new for us. Here we get the today’s date and check the date status of the current date. If it had taken attendance earlier, then it will toggle the value otherwise it will push the date and status to the array.