Exp No.4

Rishab Mandal

Batch: C23

Code:

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="C23\nRishab Mandal\nRoll no: 2103110"
    android:textSize="20sp"
    android:textColor="@android:color/black"
    android:layout_centerHorizontal="true"
    android:layout_margin="50dp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Name:"/>

    <EditText
        android:id="@+id/editTextName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter your name"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Email:"/>

    <EditText
        android:id="@+id/editTextEmail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:inputType="textEmailAddress"
        android:hint="Enter your email"/>

    <RadioGroup
        android:id="@+id/radioGroupGender"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <RadioButton
            android:id="@+id/radioButtonMale"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Male"/>

        <RadioButton
            android:id="@+id/radioButtonFemale"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Female"/>

    </RadioGroup>

    <CheckBox
        android:id="@+id/checkBoxAgree"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="I agree to the terms and conditions"/>

    <Button
        android:id="@+id/buttonSubmit"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Submit"/>

    <!-- Add TextViews to display received data -->
    <TextView
        android:id="@+id/textViewReceivedName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Received Name:"
        android:layout_marginTop="60dp"
        android:textStyle="bold" />

    <TextView
        android:id="@+id/textViewReceivedEmail"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Received Email:"
        android:textStyle="bold" />

</LinearLayout>
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <!-- Add the INTERNET permission -->
    <uses-permission android:name="android.permission.INTERNET" />

    <application
        android:usesCleartextTraffic="true"
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.FormApplication"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER"
/>
            </intent-filter>
        </activity>
    </application>

</manifest>
```

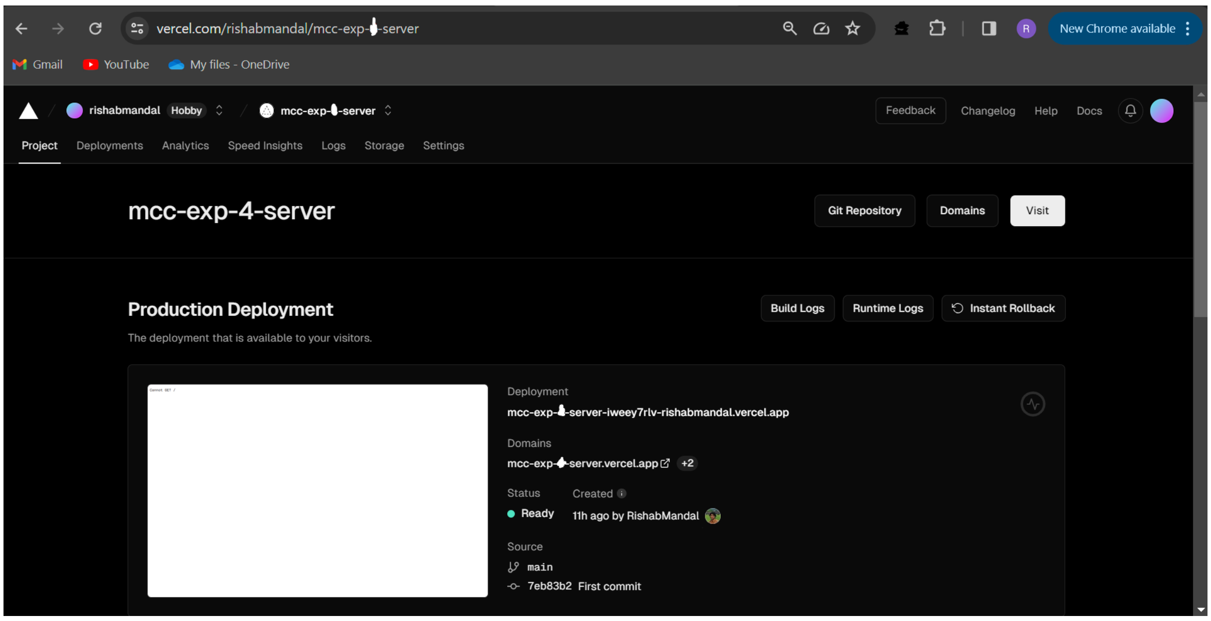
MainActivity.java

```
package com.example.formapplication;

import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;
import android.os.AsyncTask;

import org.json.JSONArray;
import org.json.JSONObject;
import java.io.OutputStream;
import java.net.HttpURLConnection;
import java.net.URL;
import java.io.*;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText editTextName, editTextEmail;
    private RadioGroup radioGroupGender;
    private CheckBox checkBoxAgree;
    private Button buttonSubmit;
    private TextView textViewReceivedName, textViewReceivedEmail;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // Initialize views
        editTextName = findViewById(R.id.editTextName);
        editTextEmail = findViewById(R.id.editTextEmail);
        radioGroupGender = findViewById(R.id.radioGroupGender);
        checkBoxAgree = findViewById(R.id.checkBoxAgree);
        buttonSubmit = findViewById(R.id.buttonSubmit);

        // Initialize TextViews
        textViewReceivedName = findViewById(R.id.textViewReceivedName);
        textViewReceivedEmail = findViewById(R.id.textViewReceivedEmail);

        // Set click listener for the submit button
        buttonSubmit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                // Get user input
                String name = editTextName.getText().toString().trim();
                String email = editTextEmail.getText().toString().trim();
                int genderId = radioGroupGender.getCheckedRadioButtonId();
                boolean agreeToTerms = checkBoxAgree.isChecked();

                // Validate input
                if (name.isEmpty() || email.isEmpty() || genderId == -1 ||
!agreeToTerms) {
                    Toast.makeText(MainActivity.this, "Please fill in all
fields and agree to terms", Toast.LENGTH_SHORT).show();
                } else {
                    // Display a toast with the form data
                    String gender = (genderId == R.id.radioButtonMale) ?
"Male" : "Female";
                    String message = "Name: " + name + "\nEmail: " + email
+ "\nGender: " + gender + "\nAgree to terms: " + agreeToTerms+"\nForm
Submitted Successfully!";
                    Toast.makeText(MainActivity.this, message,
Toast.LENGTH_LONG).show();

                    // Create a JSON object with the form data
                    JSONObject postData = new JSONObject();
                    try {
                        postData.put("name", name);
                        postData.put("email", email);
                        postData.put("genderId", genderId);
                        postData.put("agreeToTerms", agreeToTerms);
                    } catch (Exception e) {
                        e.printStackTrace();
                    }

                    // Send the form data to the backend service
                    new SendFormDataTask().execute(postData);
                    getDataFromBackend();
                }
            }
        });
    }

    private class SendFormDataTask extends AsyncTask<JSONObject, Void,
Void> {
        @Override
        protected Void doInBackground(JSONObject... jsonObjects) {
            try {
                // Define the URL of your backend service
                URL url = new URL("https://mcc-exp-4-
server.vercel.app/saveFormData");

                // Open connection
                HttpURLConnection conn = (HttpURLConnection)
url.openConnection();
                conn.setRequestMethod("POST");
                conn.setRequestProperty("Content-Type",
"application/json");
                conn.setRequestProperty("Accept", "application/json");
                conn.setDoOutput(true);

                // Write JSON data to the output stream
                OutputStream os = conn.getOutputStream();
                os.write(jsonObjects[0].toString().getBytes());
                os.flush();
                os.close();

                // Get response code (optional)
                int responseCode = conn.getResponseCode();
                if (responseCode == HttpURLConnection.HTTP_OK) {
                    // Request was successful, you may handle the response
if needed
                    // For example, reading response body
                    BufferedReader in = new BufferedReader(new
InputStreamReader(conn.getInputStream()));
                    StringBuilder response = new StringBuilder();
                    String line;
                    while ((line = in.readLine()) != null) {
                        response.append(line);
                    }
                    in.close();
                    Log.d("Response", response.toString());
                } else {
                    // Request failed, read error response
                    BufferedReader in = new BufferedReader(new
InputStreamReader(conn.getErrorStream()));
                    StringBuilder errorMessage = new StringBuilder();
                    String line;
                    while ((line = in.readLine()) != null) {
                        errorMessage.append(line);
                    }
                    in.close();
                    Log.d("Response error: ",
String.valueOf(responseCode));
                    Log.d("Error saving form data: " ,
errorMessage.toString());
                }

                conn.disconnect();
            } catch (Exception e) {
                e.printStackTrace();
            }
            return null;
        }
    }

    private void getDataFromBackend() {
        // Perform GET request to get form data from backend
        new GetFormDataTask().execute();
    }
    private class GetFormDataTask extends AsyncTask<Void, Void, JSONArray>
{
        @Override
        protected JSONArray doInBackground(Void... voids) {
            JSONArray receivedData = null;
            try {
                // Define the URL of your backend service
                URL url = new URL("https://mcc-exp-4-
server.vercel.app/getFormData");

                // Open connection
                HttpURLConnection conn = (HttpURLConnection)
url.openConnection();
                conn.setRequestMethod("GET");

                // Get response code (optional)
                int responseCode = conn.getResponseCode();
                if (responseCode == HttpURLConnection.HTTP_OK) {
                    // Request was successful, read response
                    BufferedReader in = new BufferedReader(new
InputStreamReader(conn.getInputStream()));
                    StringBuilder response = new StringBuilder();
                    String line;
                    while ((line = in.readLine()) != null) {
                        response.append(line);
                    }
                    in.close();
                    receivedData = new JSONArray(response.toString());
                } else {
                    // Request failed
                    Log.d("Response error: ",
String.valueOf(responseCode));
                }

                conn.disconnect();
            } catch (Exception e) {
                e.printStackTrace();
            }
            return receivedData;
        }

        @Override
        protected void onPostExecute(JSONArray receivedData) {
            super.onPostExecute(receivedData);
            // Update UI with received data
            if (receivedData != null) {
                try {
                    // Iterate through the JSONArray and display each
object
                    for (int i = 0; i < receivedData.length(); i++) {
                        JSONObject formData =
receivedData.getJSONObject(i);
                        // Display each form data object as needed
                        String name = formData.getString("name");
                        String email = formData.getString("email");
                        // Handle other fields if needed
                        Log.d("Received Data:", "Name: " + name + ", Email:
" + email);

                        // Update UI accordingly
                        runOnUiThread(new Runnable() {
                            @Override
                            public void run() {
                                // Update UI elements with received data
                                // For example, you can set the received
data to TextViews
                                textViewReceivedName.setText("Name: " +
name);
                                textViewReceivedEmail.setText("Email: " +
email);
                                // You can add more UI elements for other
fields if needed
                            }
                        });
                    }
                } catch (Exception e) {
                    e.printStackTrace();
                }
            }
        }
    }

}
```

Backend server (server.js)

```
const express = require("express");
const bodyParser = require("body-parser");
const mongoose = require("mongoose");

const app = express();
const port = process.env.PORT || 3001; // or any other port you prefer

app.use(bodyParser.json());
app.use(express.json());
app.use(express.urlencoded({ extended: true }));

// Connect to MongoDB using Mongoose
// mongoose.connect('mongodb://localhost:27017/formdata', {

// Define endpoint to save form data
app.post("/saveFormData", async (req, res) => {
  try {
    await mongoose
      .connect(
        "mongodb+srv://***:***@expresstry.wqhmyb0.mongodb.net/formdata",
        {
          useNewUrlParser: true,
          useUnifiedTopology: true,
        }
      )
      .then(() => {
        console.log("Connected to MongoDB successfully");
      })
      .catch((err) => {
        console.error("Error connecting to MongoDB:", err);
      });

    let db = mongoose.connection;

    // Define schema for form data
    const formDataSchema = new mongoose.Schema({
      name: String,
      email: String,
      genderId: Number,
      agreeToTerms: Boolean,
    });

    // Define model for form data
    const FormData = mongoose.model("FormData", formDataSchema);
    const formData = req.body;
    // Create a new document using the FormData model
    const result = await db.collection("formData").insertOne(formData);
    console.log("Form data saved successfully:", result.insertedId);
    res.send("Form data saved successfully");
  } catch (err) {
    console.error("Error saving form data:", err);
    res.status(500).send("Error saving form data");
  }
});

app.get("/getFormData", async (req, res) => {
  try {
    await mongoose
      .connect(
        "mongodb+srv://Rishab***:***@expresstry.wqhmyb0.mongodb.net/formdata",
        {
          useNewUrlParser: true,
          useUnifiedTopology: true,
        }
      )
      .then(() => {
        console.log("Connected to MongoDB successfully");
      })
      .catch((err) => {
        console.error("Error connecting to MongoDB:", err);
      });

    let db = mongoose.connection;
    const allFormData = await db.collection("formData").find().toArray();
    res.json(allFormData); // Send the data as JSON response
  } catch (err) {
    console.error("Error fetching form data:", err);
    res.status(500).send("Error fetching form data: ", err);
  }
});

app.listen(port, () => {
  console.log(`Server is listening on port ${port}`);
});
```

Server Deployment on Vercel



mcc-exp-4-server

Production Deployment

The deployment that is available to your visitors.

Deployment
mcc-exp-[redacted]-server-iweey7rlv-rishabmandal.vercel.app

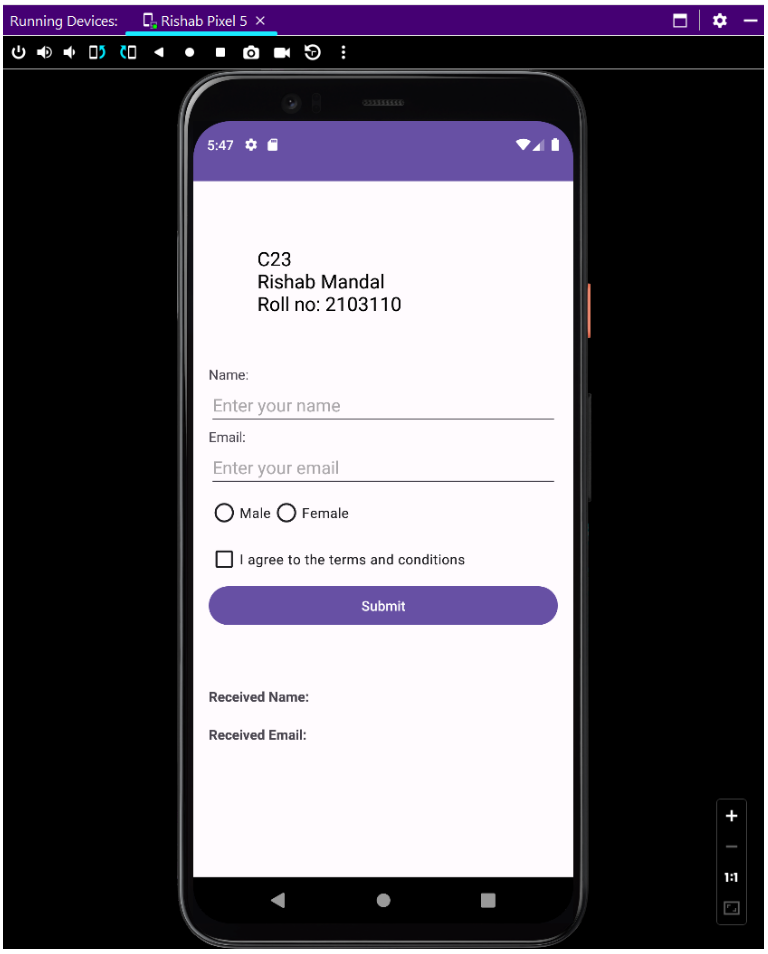
Domains
mcc-exp-[redacted]-server.vercel.app +2

Status: Ready
Created: 11h ago by RishabMandal

Source
main
7eb83b2 First commit

Output:

Opening and filing the form

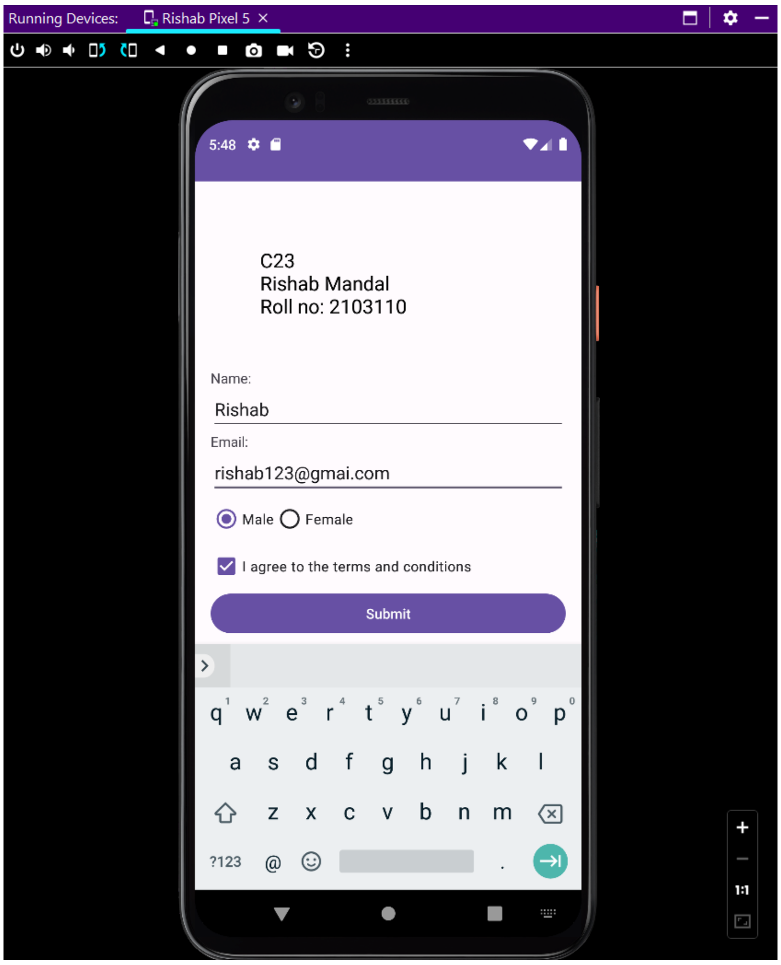


C23
Rishab Mandal
Roll no: 2103110

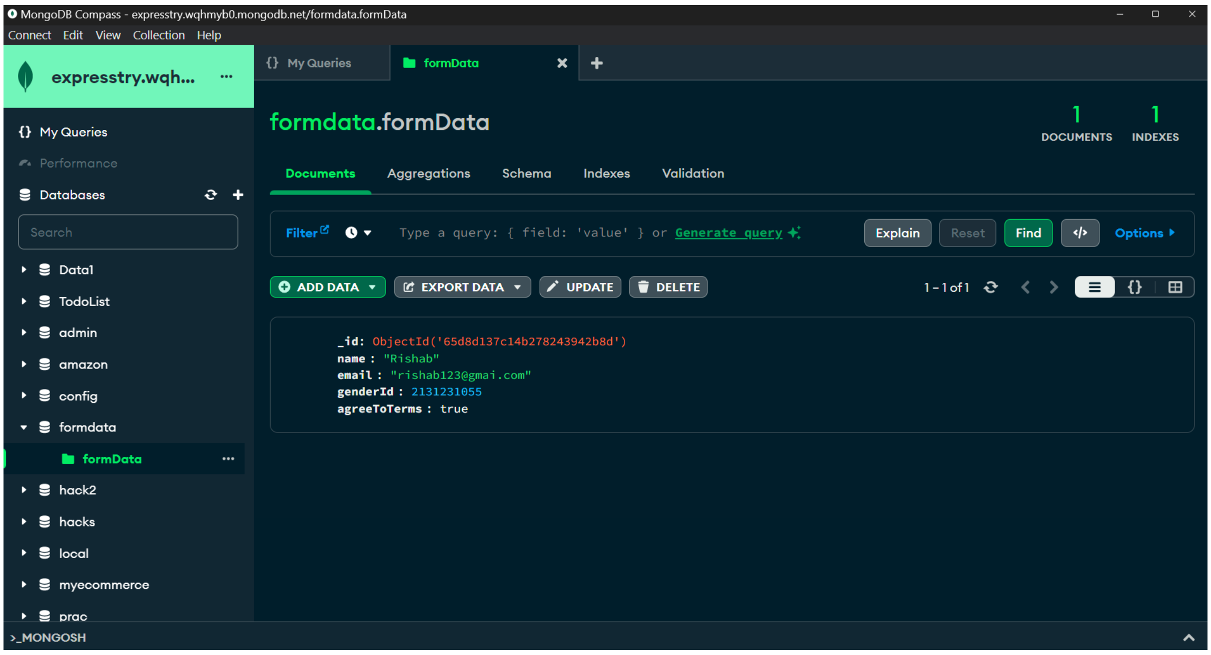
Name:
Enter your name
Email:
Enter your email
Male Female
I agree to the terms and conditions
Submit

Received Name:
Received Email:

Filled form, clicking on submit button

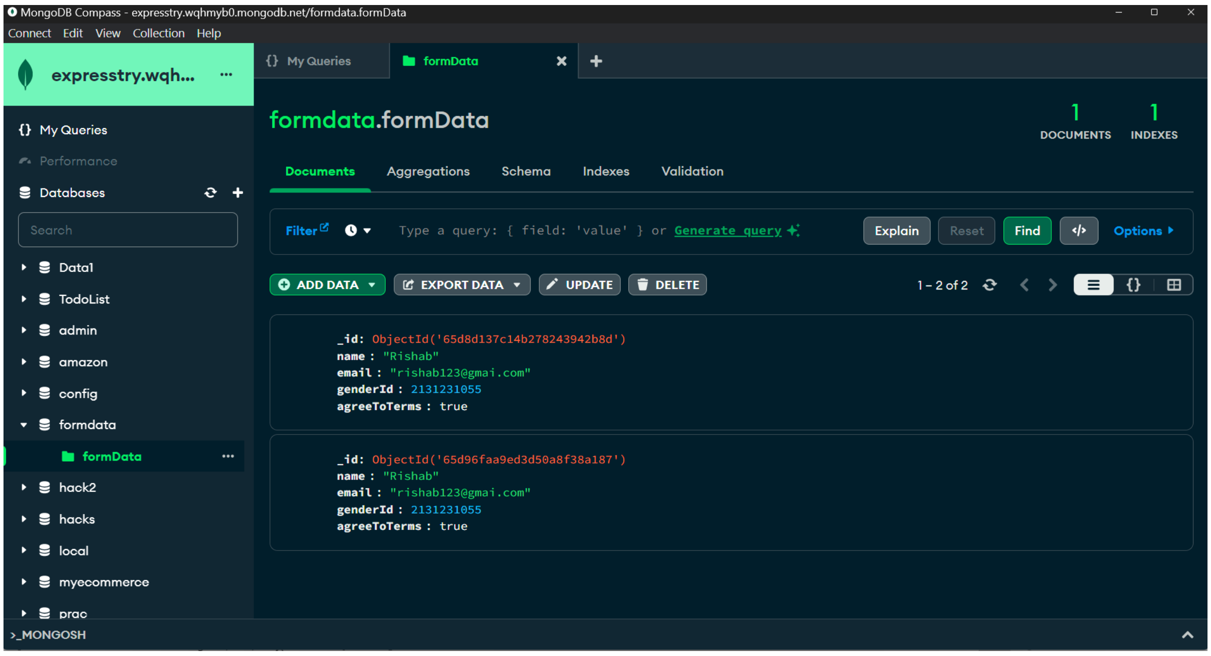


Database: Before submission


MongoDB Compass - expresstry.wqhmyb0.mongodb.net/formdata.formData
Connect Edit View Collection Help
expresstry.wqh...
My Queries
formData
formdata.formData
1 DOCUMENTS
1 INDEXES
Documents Aggregations Schema Indexes Validation
Filter
Type a query: { field: 'value' } or Generate query
Explain Reset Find Options
ADD DATA EXPORT DATA UPDATE DELETE
1 - 1 of 1
My Queries
Performance
Databases
Search
Data1
TodoList
admin
amazon
config
formdata
formData
hack2
hacks
local
myecommerce
prac
>_MONGOSH

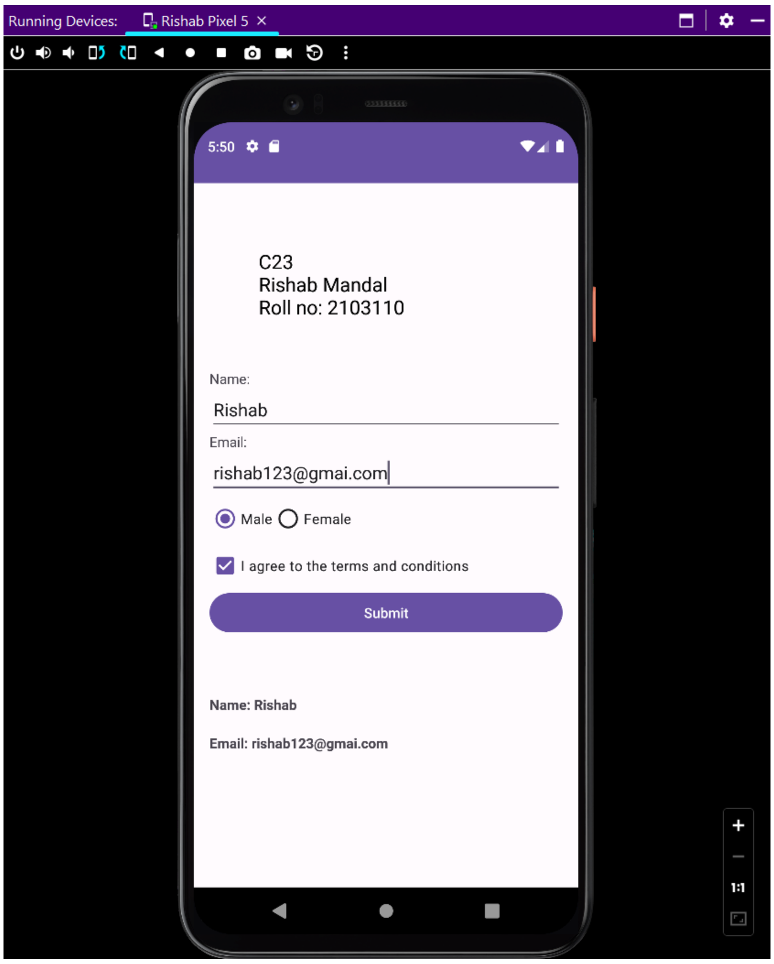
```
_id: ObjectId('65d8d137c14b278243942b8d')
name : "Rishab"
email : "rishab123@gmai.com"
genderId : 2131231055
agreeToTerms : true
```

Database: After Submission of form



```
_id: ObjectId('65d8d137c14b278243942b8d')
name : "Rishab"
email : "rishab123@gmai.com"
genderId : 2131231055
agreeToTerms : true

_id: ObjectId('65d96faa9ed3d50a8f38a187')
name : "Rishab"
email : "rishab123@gmai.com"
genderId : 2131231055
agreeToTerms : true
```

Received Name & Email from backend displayed below the submit button



C23
Rishab Mandal
Roll no: 2103110

Name: Rishab

Email: rishab123@gmai.com

Male [✓] Female

[✓] I agree to the terms and conditions

Submit

Name: Rishab

Email: rishab123@gmai.com