

Instruction Manual

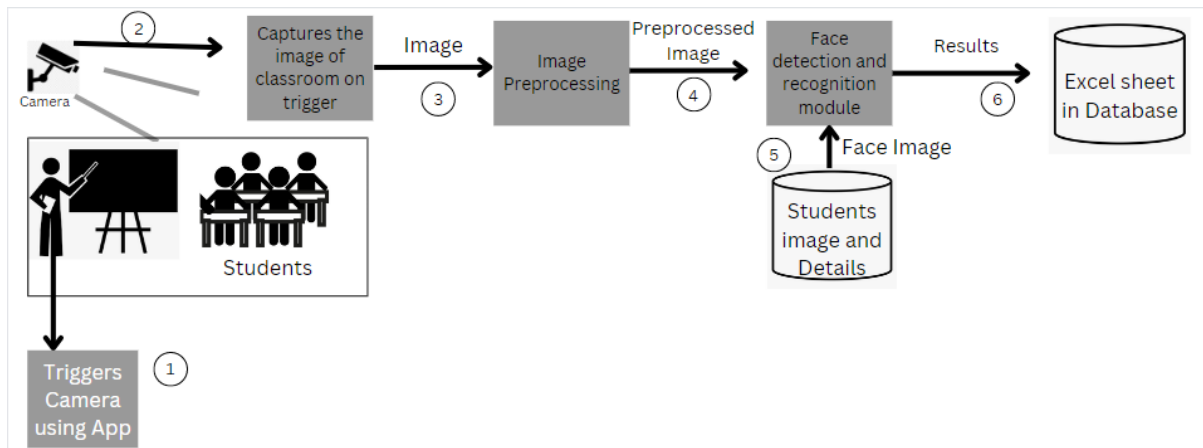
for

Facial Recognition for Student Attendance

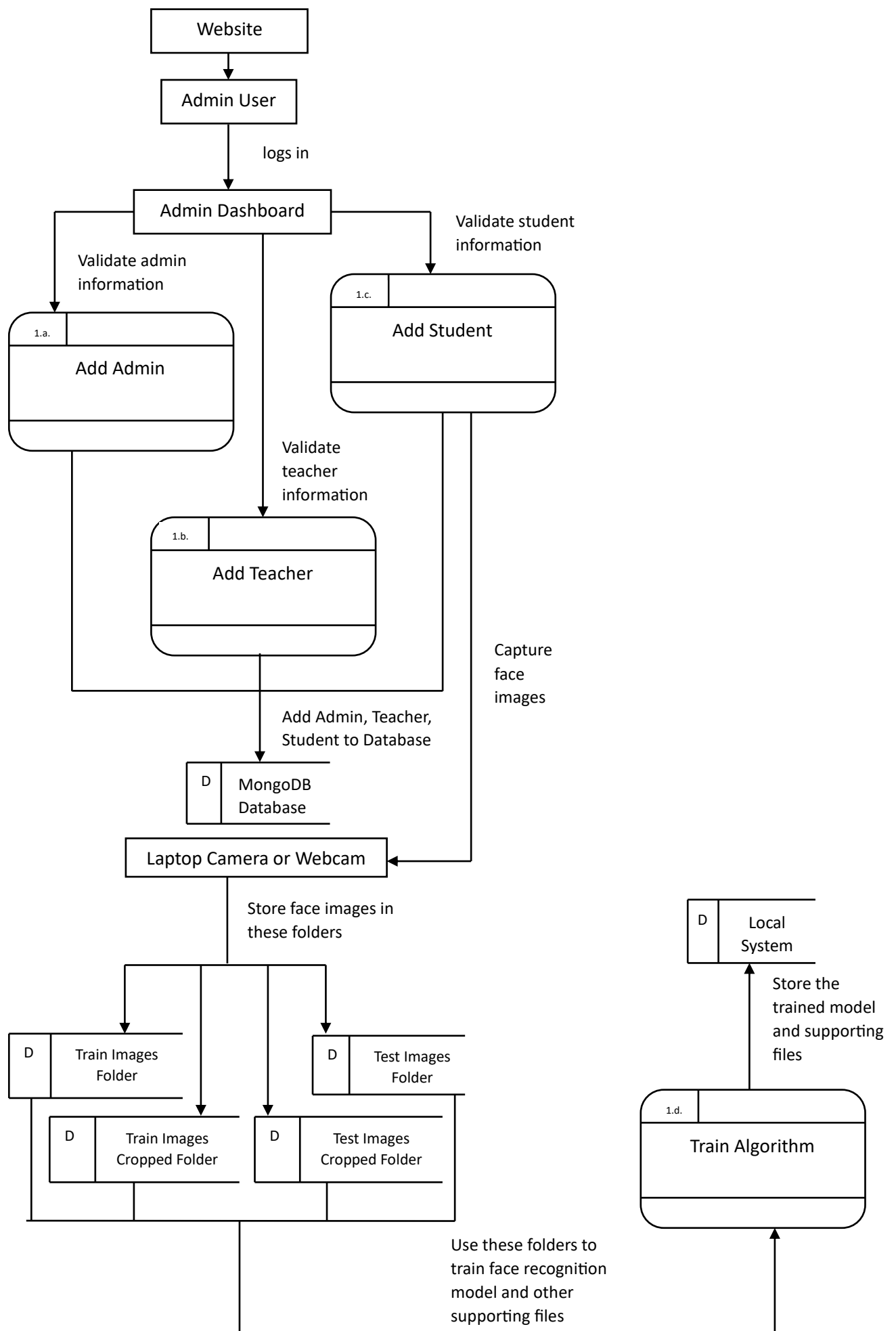
Our Team (BE COMP 2022-23)

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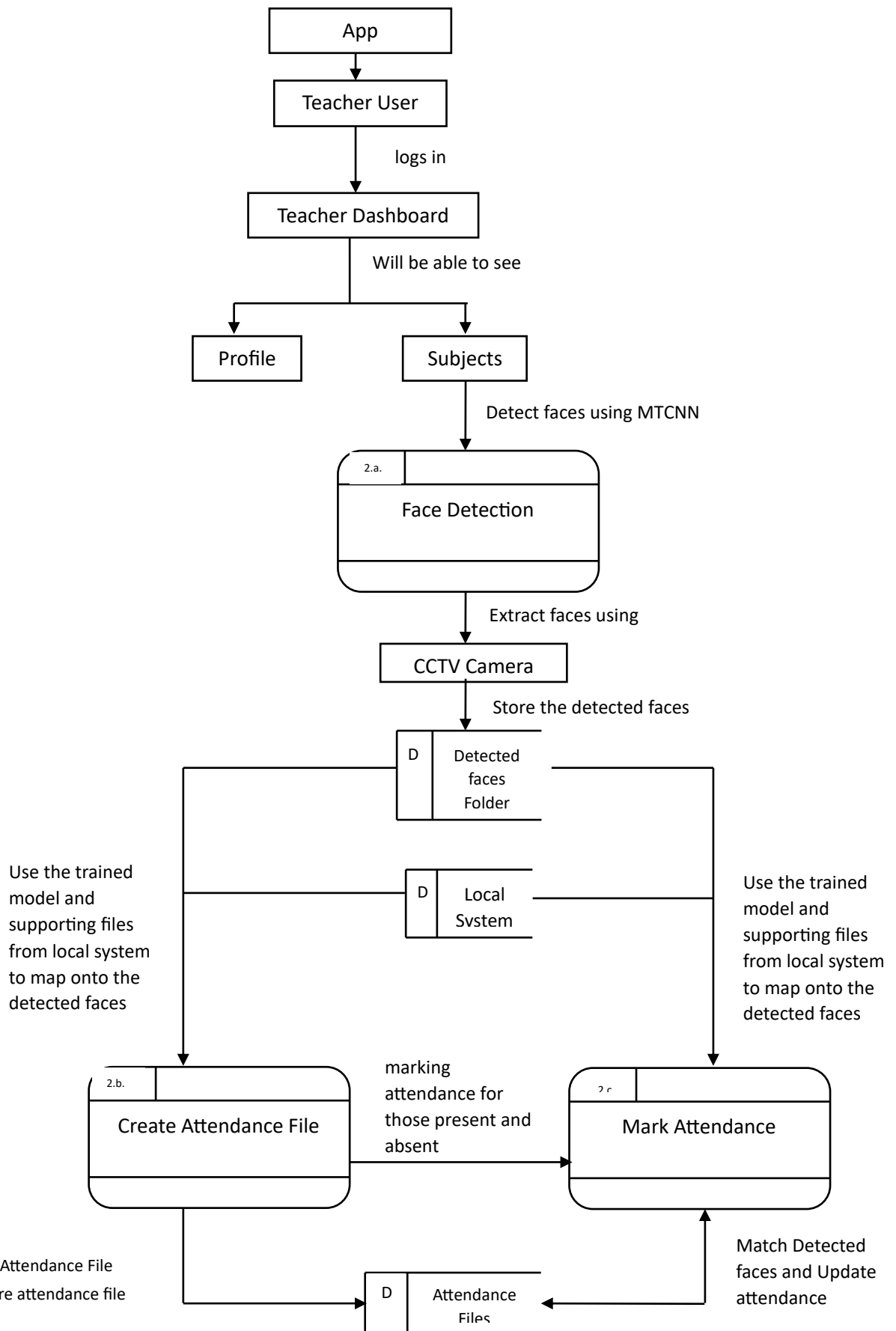
System Architecture:



DFD for Admin



DFD for Teacher



Before Deployment:

Make sure to do the installations as given below: -

Connection of CCTV camera to an app: -

The CCTV camera comes with an app in which it will start working for real-time video processing. This step is necessary to get the RTSP link from the ONVIF device manager which is to be used in the code app_project.py

The app is called “iCSee”. You can download the app with this link:

https://play.google.com/store/apps/details?id=com.xm.csee&hl=en_IN&gl=US

Once downloaded, follow these steps.

Step 1: Use the power adapter to connect the camera power interface and the power socket.

Note: If you need local storage, please install the memory card firstly, then power on the device (the memory card does not support hot swapping, please plug and unplug the memory card when the device is powered off).

Step 2: Open up the app and connect your phone to the Wi-Fi (4G most preferable) to register an account and login

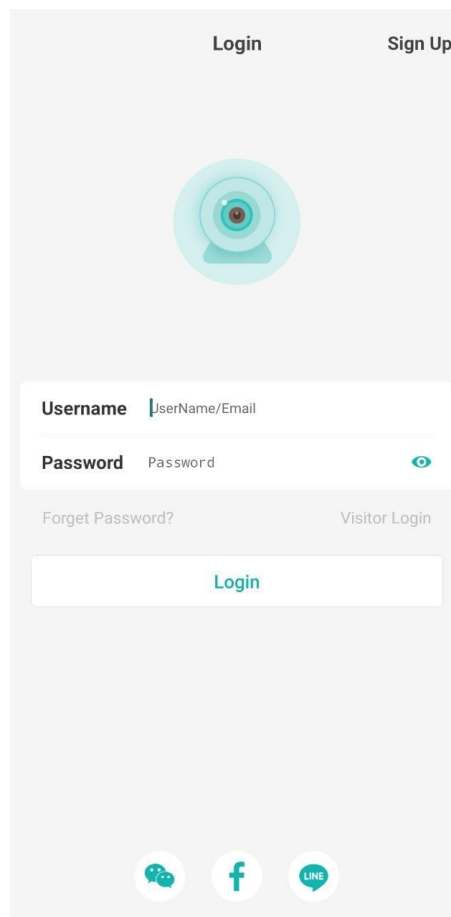


Fig. 1: Step 2 of iCSee app

Step 3: Click the “+” button to add device

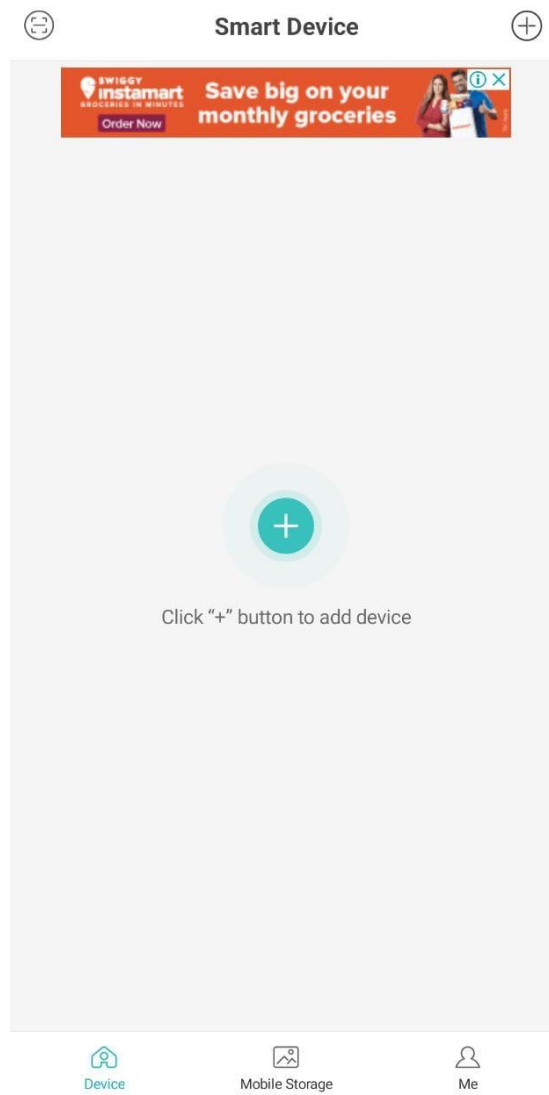


Fig. 2: Step 3 of iCSee app

Step 4: Select “WiFi Camera”

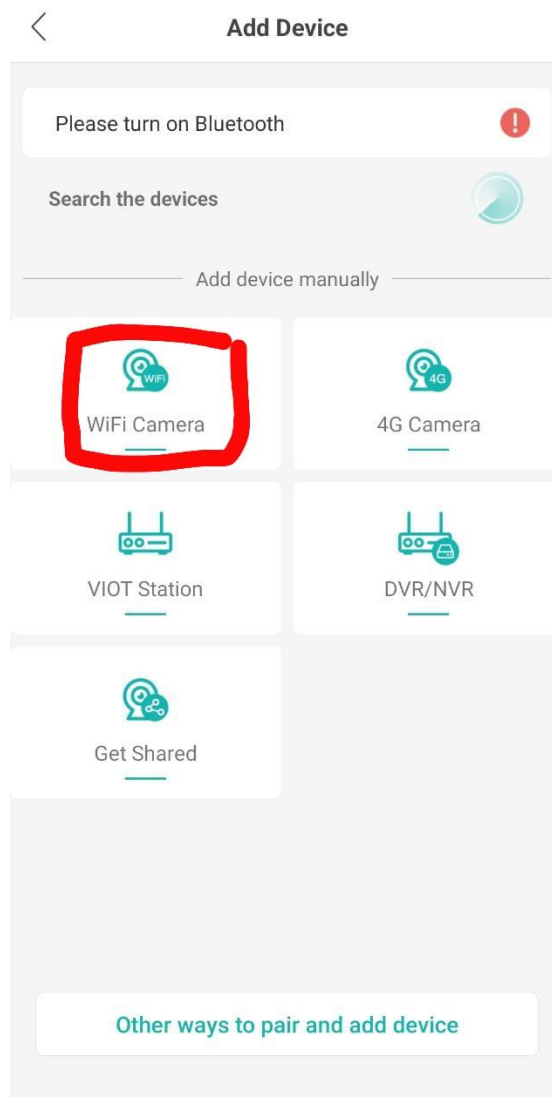


Fig. 3: Step 4 of iCSee app

Step 5: Click “Next” two times.

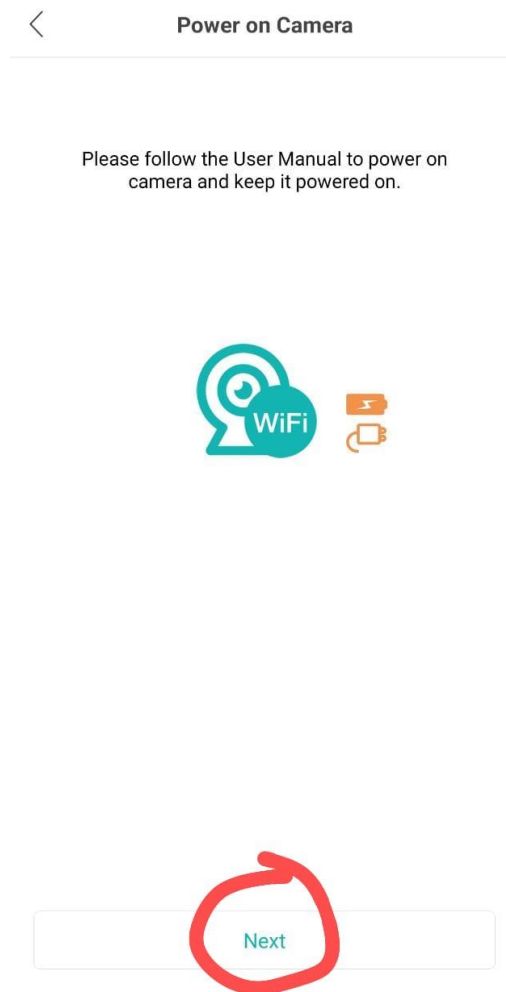
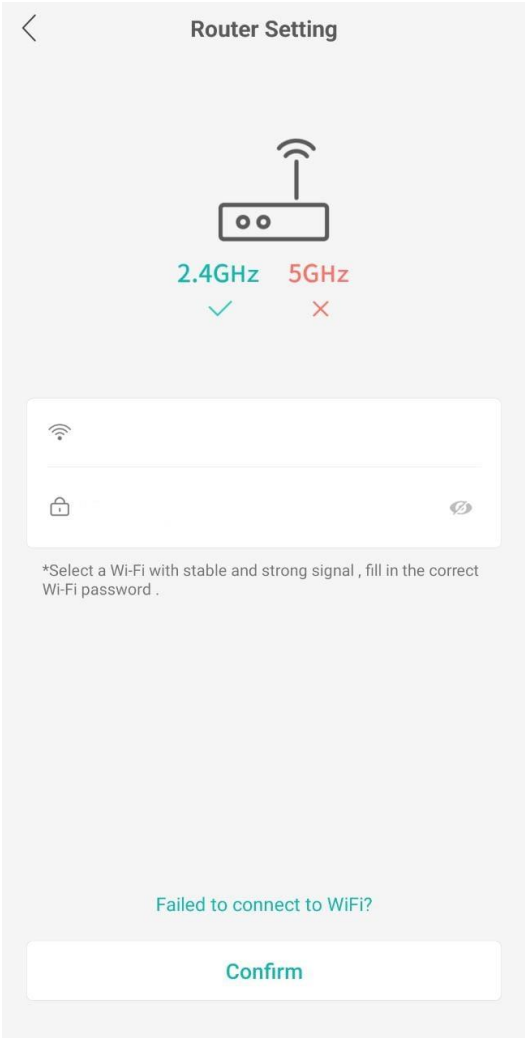


Fig. 4: Step 5 of iCSee app

Step 6: Type in the password of your Wi-Fi. This step will automatically detect your wifi and will display the name. Then click “Confirm”.



The image shows a mobile app interface titled "Router Setting". At the top left is a back arrow. In the center is a router icon with two frequency options below it: "2.4GHz" with a green checkmark and "5GHz" with a red X. Below this is a white input box with a Wi-Fi icon on the left and a lock icon on the right. Under the input box is a note: "*Select a Wi-Fi with stable and strong signal , fill in the correct Wi-Fi password .". At the bottom, there is a link "Failed to connect to WiFi?" and a large "Confirm" button.

Fig. 5: Step 6 of iCSee app

Step 7: Click “Next”

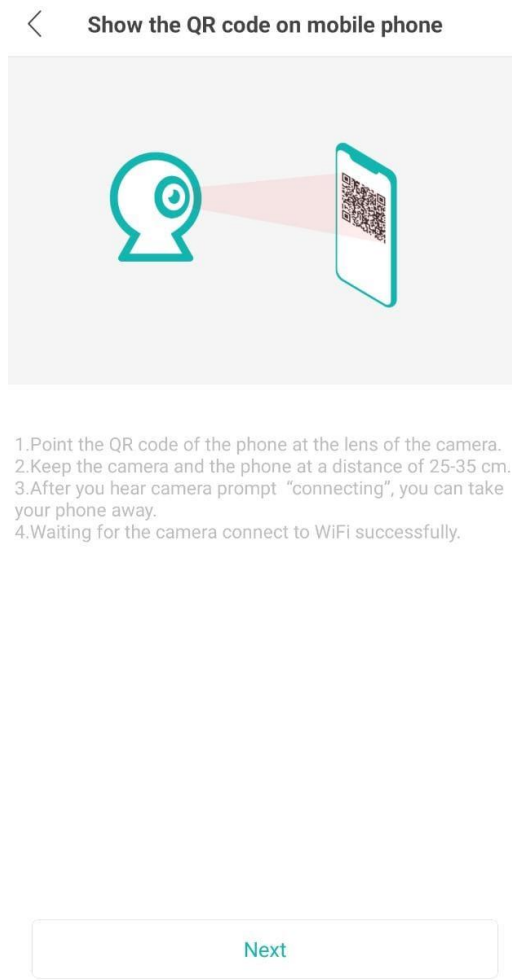


Fig. 6: Step 7 of iCSee app

Step 8: Connect the camera given the QR code. And put it close to the camera about 25-30 cms at the most.



Fig. 7: Step 8 of iCSee app

Step 9: After it has said, “Connected to router successfully”, the following page appears. Now, enter the password for the camera.

Set Password

Set Password

09ee5edfb5af355c

Set a Password(Password must be 8-64 characters which is combined with letters and numbers)

.....

Password strength: strong

Confirm Password(Password must be 8-64 characters which is combined with letters and numbers)


.....

*If you failed to set the password , you can long-press the reset button on the camera and do the previous setps again to set the camera to WiFi .

Confirm


Fig. 8: Step 9 of iCSee app

Step 10: Name your camera

 Set a Camera Name

Name your device

Living Room	Bedroom	Guest Room
Study	Doorway	Corridor
Garage	Balcony	

4th Yr. project

Save

Fig. 9: Step 10 of iCSee app

Step 11: Click “Next”.

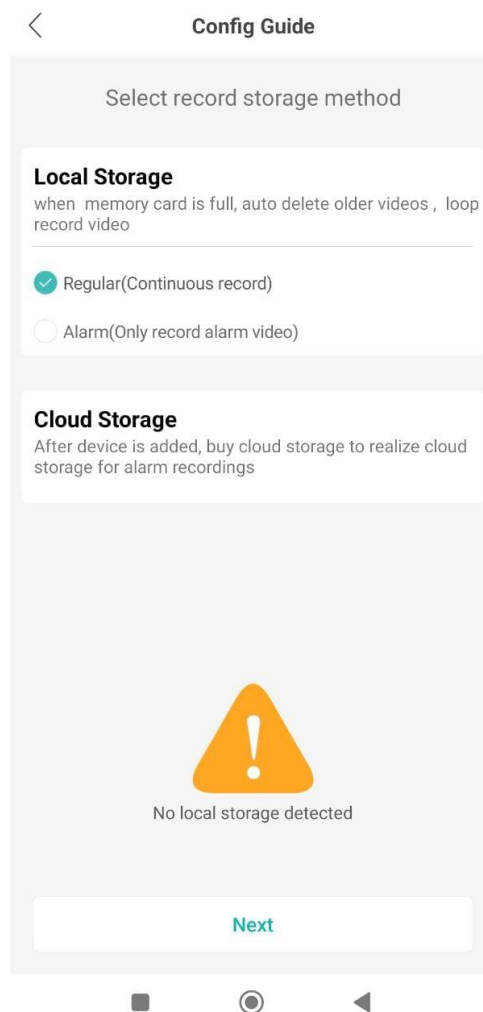


Fig. 10: Step 11 of iCSee app

Step 12: Your camera is now ready. Click the play button to see the features and play around with it.

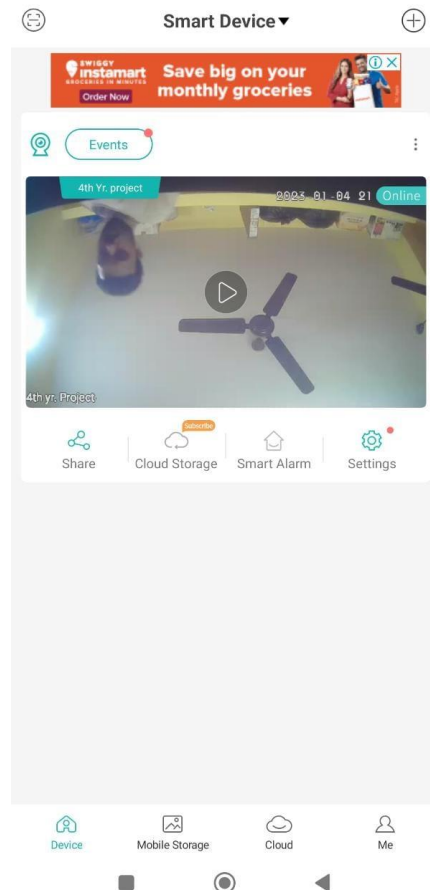


Fig. 11: Step 12 of iCSee app

ONVIF Device Manager: -

The RTSP link can be obtained utilizing ONVIF Device Manager software.

The following outlines the process for downloading the ONVIF Device Manager software:

Link to download: <https://onvif-device-manager.software.informer.com/download/>

After installation, follow these steps to get the RTSP link.

Step 1: Open up the app.

Step 2: Click the “Live Video” with the red arrow button. And then you will get a real-time video with an RTSP link below that (given in red box).

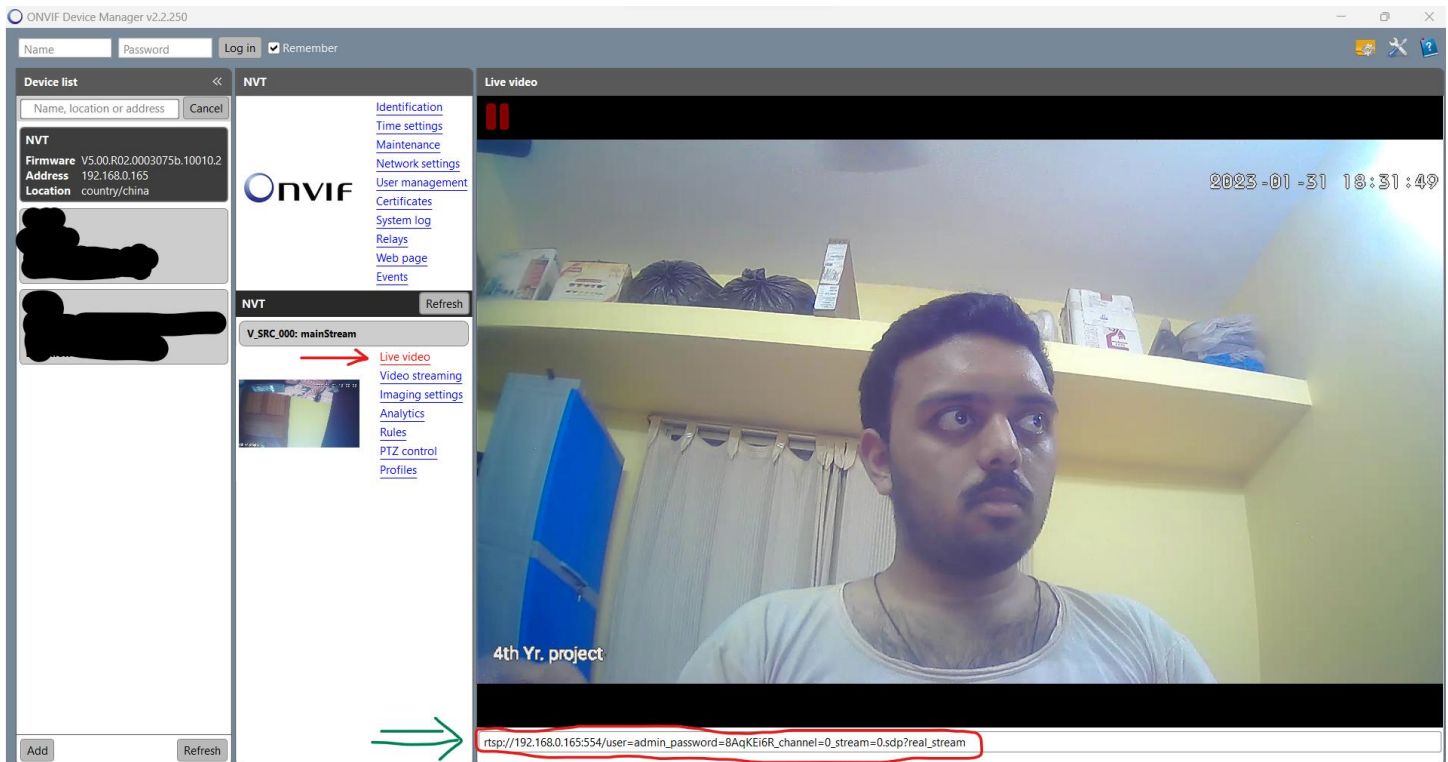


Fig. 12: Step 2 of ONVIF Device Manager

On Local System: -

Name	Date modified	Type	Size
.git	05-Jun-23 11:57 AM	File folder	
App	05-Jun-23 11:57 AM	File folder	
facenetp	05-Jun-23 2:18 PM	File folder	
Website	05-Jun-23 12:01 PM	File folder	

Make a folder say “FYProject” and it should contain these files. You can get these files from the following:

GDrive: https://drive.google.com/drive/folders/1OkYm02d68RWapgYc_1-ZZVok5kDGJ1V2?usp=drive_link

OR

GitHub: Will upload soon

Next, go to cmd (Command Prompt) and change directory using “cd” for those folders (Except .git) and type code . (This opens visual studio code) for each.

Once done, open visual studio code for “facenetp” and type the following:

1) Type in cmd prompt: **python -m venv myenv**

This will create a virtual environment in python.

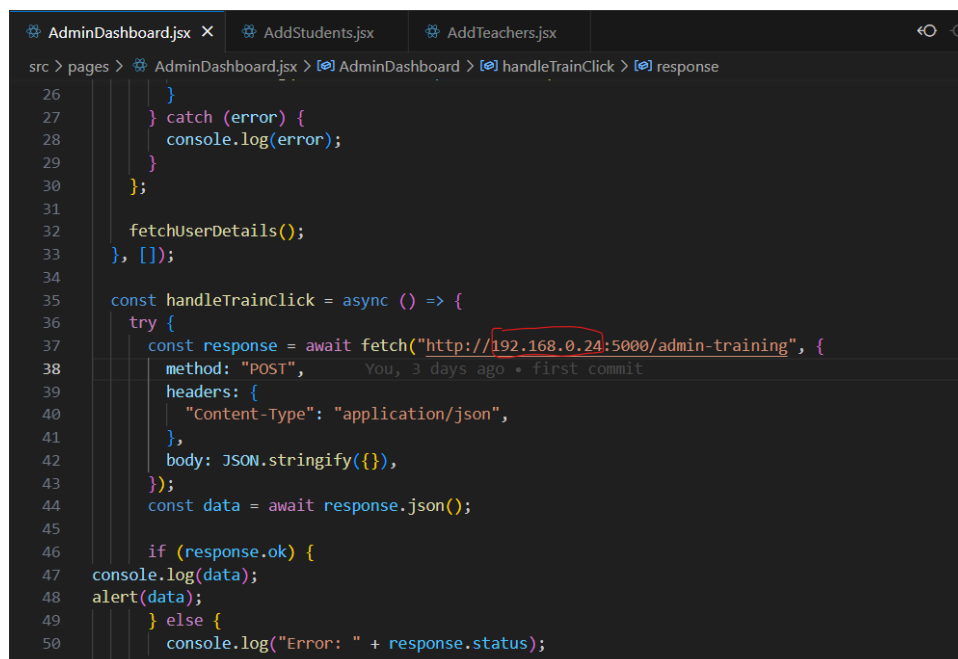
2) Next to activate the script in cmd: **myenv\Scripts\activate**

3) requirements.txt is in this directory. Type this in cmd: **pip install -r requirements.txt**

This will install all the libraries, dependencies, and tools required for this project under this environment.

Once done, then go to visual studio code for “App” and do the following:

- Go inside “studface” folder and run: **npm install**
 - Similarly go inside “backend” folder and run: **npm install**
 - Do the same for “Website”
-
- And in frontend code, change the IP address.
 - You can find it in command prompt by entering command “ipconfig”
 - IPv4 address will be the address.
 - Like for “Website” on those particular components given in pic below:



```
src > pages > AdminDashboard.jsx > AdminDashboard > handleTrainClick > response
26     }
27   } catch (error) {
28     console.log(error);
29   }
30 };
31
32 fetchUserDetails();
33 }, []);
34
35 const handleTrainClick = async () => {
36   try {
37     const response = await fetch("http://192.168.0.24:5000/admin-training", {
38       method: "POST",
39       headers: {
40         "Content-Type": "application/json",
41       },
42       body: JSON.stringify({}),
43     });
44     const data = await response.json();
45
46     if (response.ok) {
47       console.log(data);
48       alert(data);
49     } else {
50       console.log("Error: " + response.status);
51     }
52   }
53 }
```

Fig. 13

- In app, frontend files only you'll need to change the IP address in “screen” folder there are files like Files.js, HomePage.js, LoginScreen.js, Profile.js and SubjectDetails.js. Other than LogoScreen.js file, all other files in “screen” folder, there you will find IP address that you'll need to change accordingly. Like in the pic given below:


```

36 }
37 };
38
39 const createAttendance = async () => {
40   try {
41     const formData = new FormData();
42     formData.append("subject", id);
43
44     const response = await fetch("http://192.168.0.24:5000/creating-attendance-file", {
45       method: "POST",
46       body: formData,
47     });
48
49     if (response.ok) {
50       const data = await response.json();
51       console.log(data.message);
52       setAttendanceResult(data.message);
53     } else {
54       console.log("Error: " + response.status);
55     }
56   } catch (error) {
57     console.log(error);
58   }
59 };
60
61 const markAttendance = async () => {
62   try {
63     const formData = new FormData();
64     formData.append("subject", id);
65
66     const response = await fetch("http://192.168.0.24:5000/marking-attendance", {
67       method: "POST",
68       body: formData,
69     });
70
71     if (response.ok) {
72       const data = await response.json();
73       console.log(data.message);
74       setAttendanceResult(data.message);
75     } else {
76       console.log("Error: " + response.status);
77     }
78   } catch (error) {
79     console.log(error);
80   }
81 };

```

Fig. 14

- And video capture will be 0 in files where camera is needed to access your laptop camera instead of RTSP link which is there in that.
- To test app, download the app “EXPO GO”, on play store you will find it.
- Next, download MongoDB. Link is given here:
<https://www.mongodb.com/try/download/community>

Make sure to download the Version 5 as that is the stable version till now. Package should be .msi

Run the .msi file, go to the MongoDB folder (mostly will be in C drive -> Program Files), enter the bin (binary) folder and copy the path. Add these to “Environment Variables”:

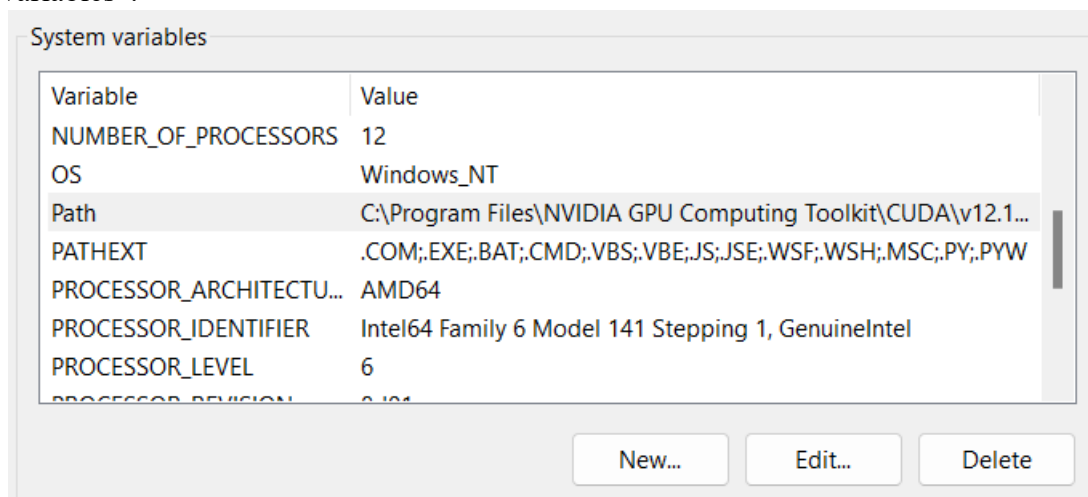


Fig. 15

Go to “Path” and click “Edit”. Then click “New”. Then click “Ok” 3 times till “System Properties”.

Next, open “MongoDBCompass”. Click “New Connection”. And do the following according to the pic given below:

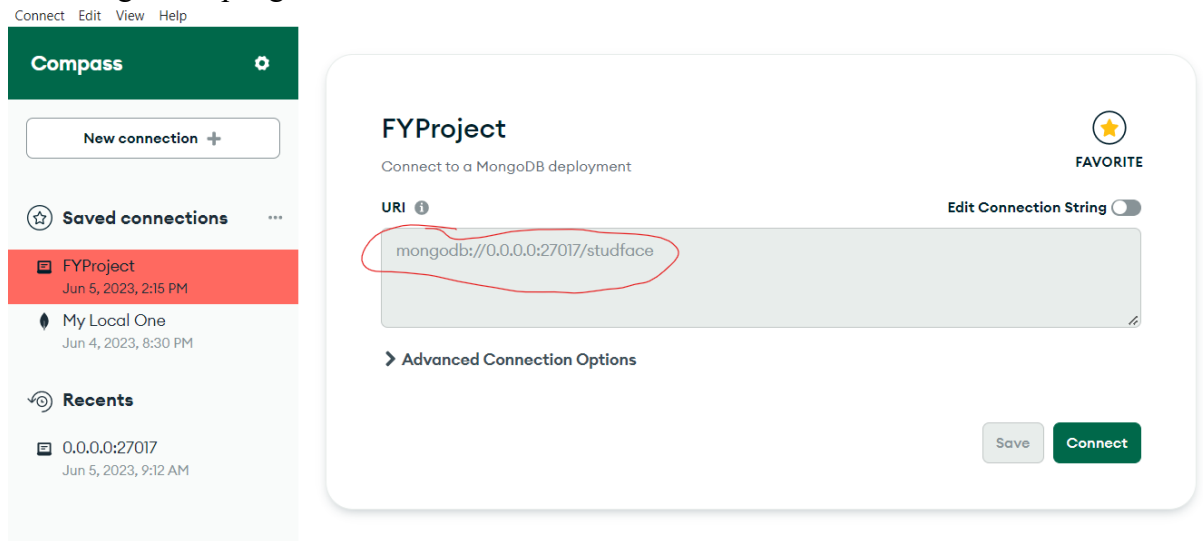


Fig. 16

Type the URI given in red circle and click “Connect”. The URI can also be obtained from the app / website “backend” folders under .env like given below:

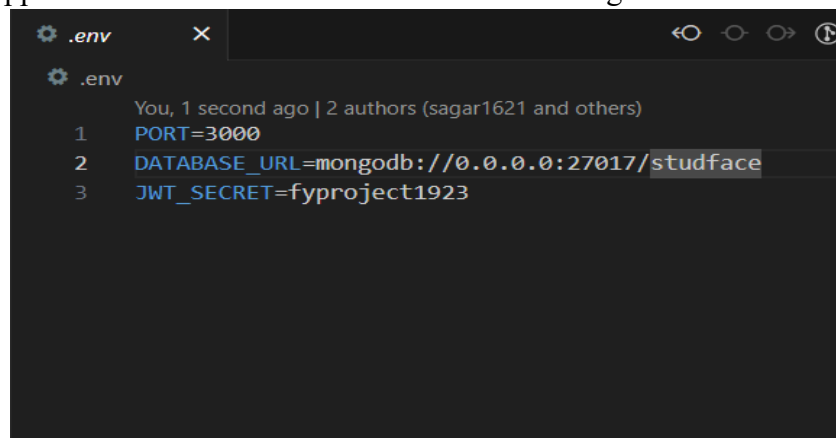


Fig. 17

Once successful connection, this is what will appear:

The screenshot shows the MongoDB Compass interface for a database named 'FYProject'. The left sidebar lists the databases: 'admin', 'config', 'local', and 'studface'. The 'studface' database is selected, showing three collections: 'addstudents', 'addteachers', and 'admins'. The main panel displays the details for these collections.

Collection Name	Storage size	Documents	Avg. document size	Indexes	Total index size
addstudents	20.48 kB	4	212.00 B	3	110.59 kB
addteachers	20.48 kB	3	303.00 B	2	73.73 kB
admins	20.48 kB	1	254.00 B	2	40.96 kB

Fig. 18

Deployment Time:

- To run website, frontend: **npm run dev**
- To run website backend: **npm start**
- To run app, frontend: **npx expo start or expo start**
Then QR code will appear. Scan it using expo go app.
- To run app, backend: **npm start**
- To run API in “facenetp” folder, api_project.py: **python api_project.py**

Keep these running and now you can play around. 😊