Reverse Proxy – Team Unproxy

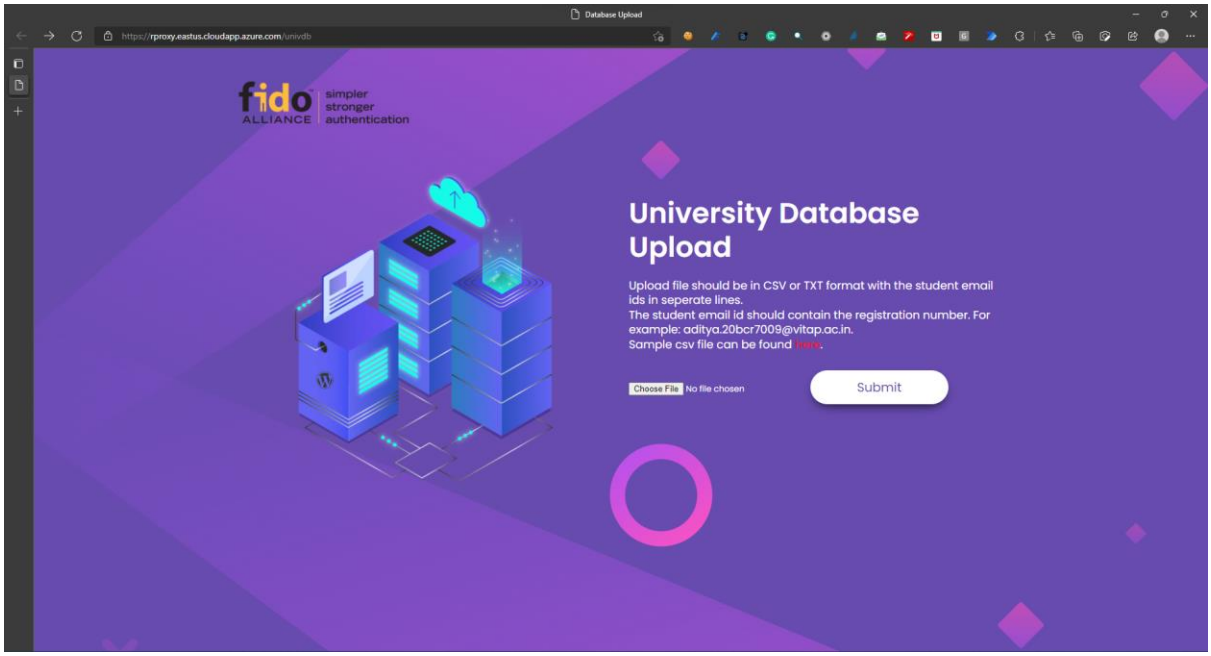
Running instructions.

This project is an attendance portal, that simplifies student attendance process and prevents malpractices like Proxy attendances.

Here, it is assumed that the academic email addresses of the students are in the format

<name>.<registration_number>@<university_domain>, For example aditya.20bcr7009@vitap.ac.in. Similarly, for testing purposes, the users can create email addresses in the same format like <name>.<unique_number>@outlook.com. For the rest of the document, the unique number is referred to as Registration numbers of the student. The university should upload the list of students in a csv file to the portal. A sample csv file in the format can be found here: https://adityamitra5102.github.io/Reverse_Proxy/studentlist.csv.

The university should upload their list of students in the Reverse Proxy portal. The link to upload the csv file is https://adityamitra5102.github.io/Reverse_Proxy/univ.

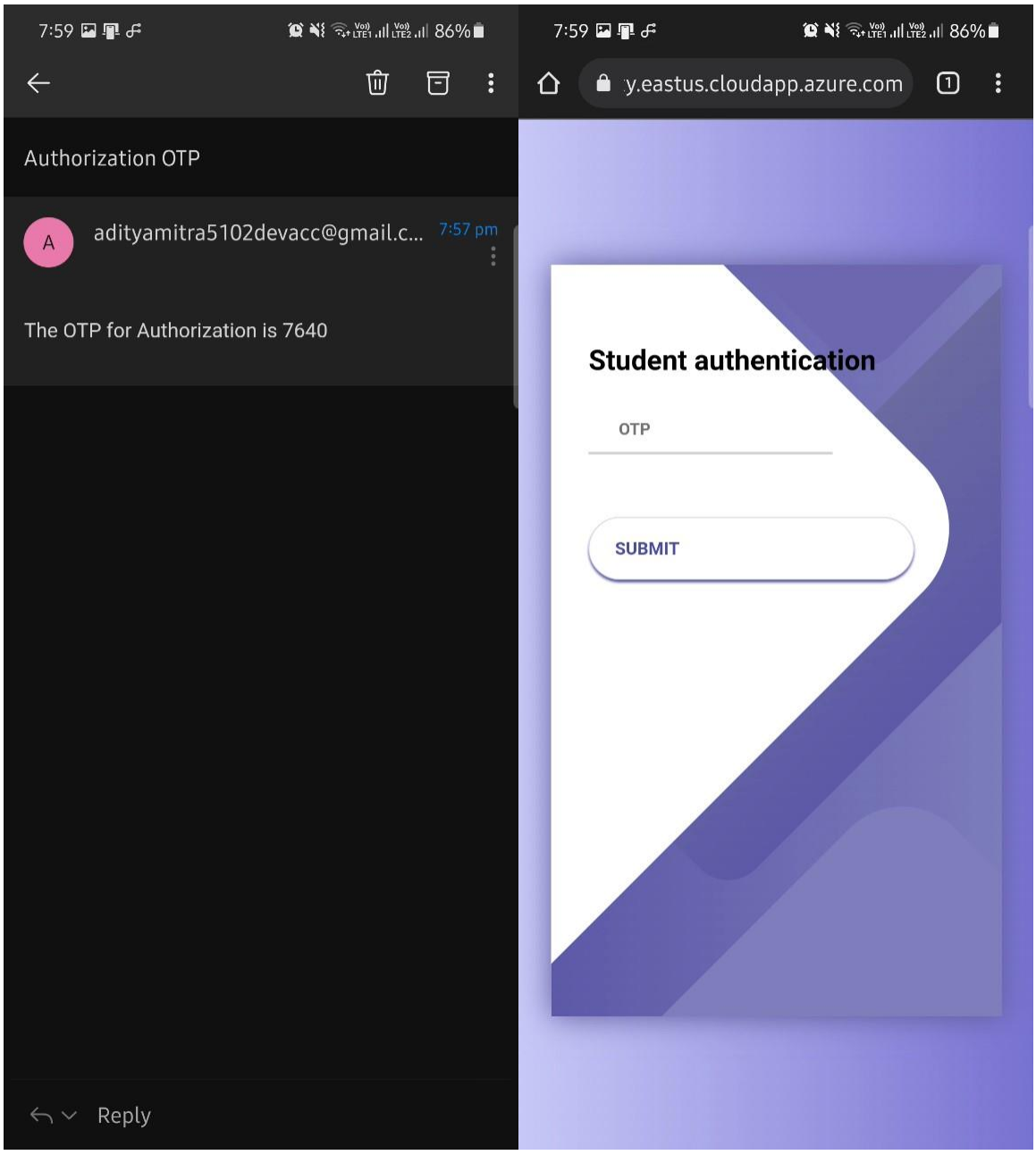


The project, as the description says, uses device attestation with FIDO specifications for verifying each student. Hence, each student should enroll or register their device(s) on the Reverse Proxy portal. The institute can urge them to do the same.

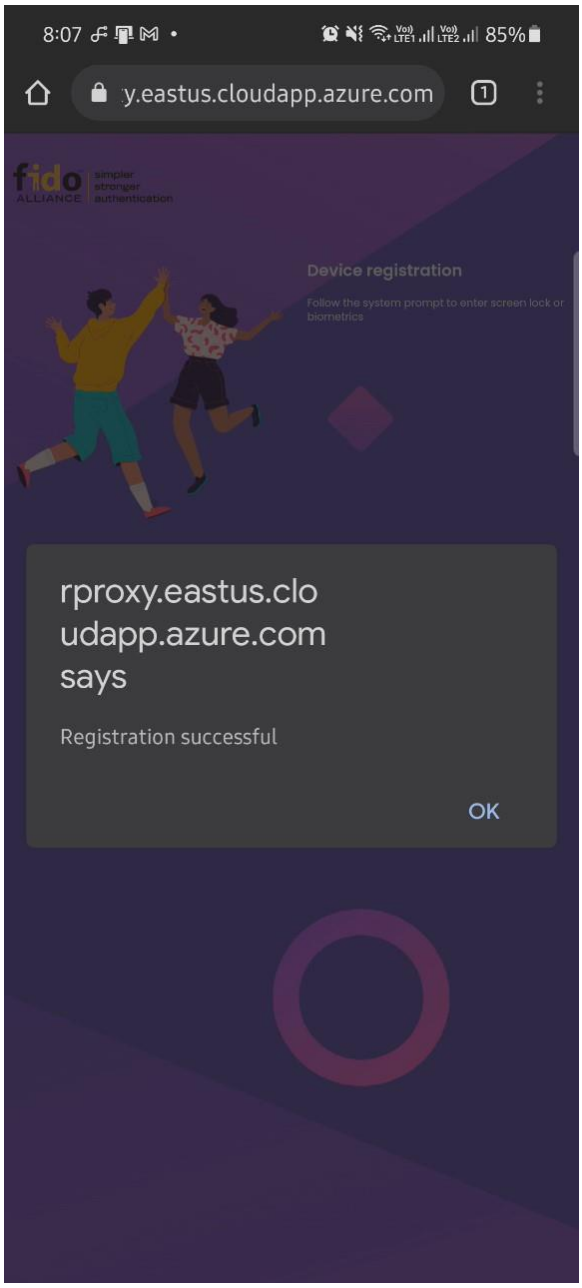
(Using mobile screenshots for the student's device as the student would generally use a smartphone for the process.)

The link to enroll the student devices is https://adityamitra5102.github.io/Reverse_Proxy/reg

As the registration number is submitted, an OTP is sent to the email address of the student, and it is to be used for authentication on the next screen.

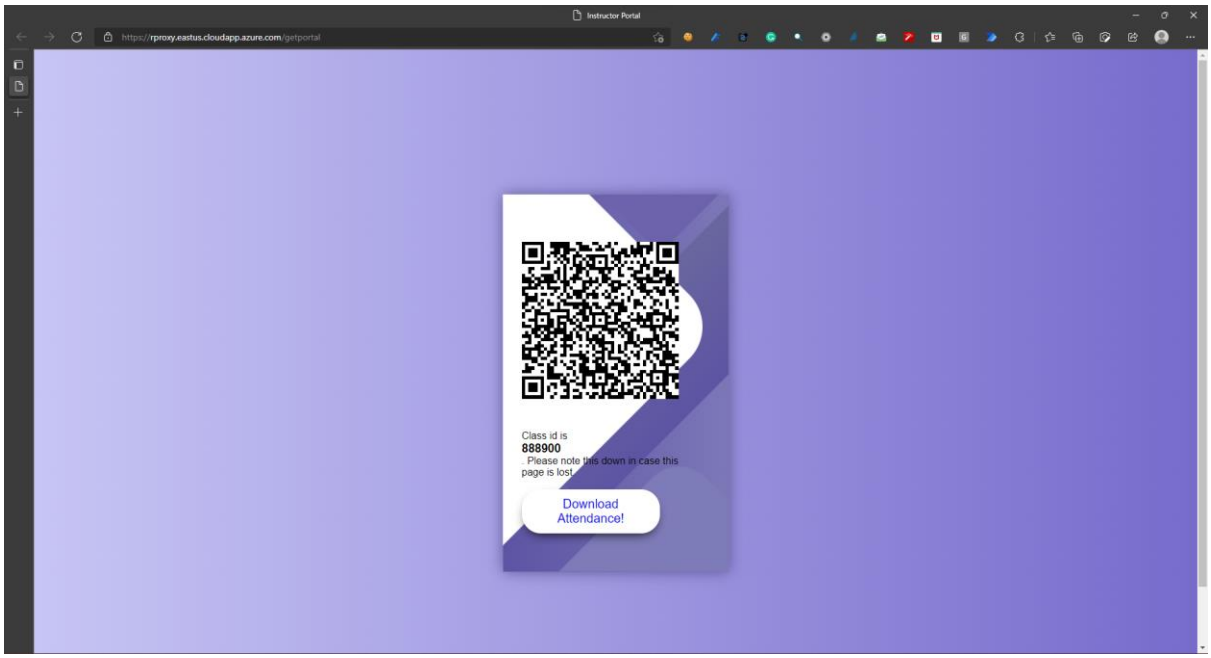


In the following screen, the device prompts to enter the lock screen password or biometrics. This is the FIDO2 authentication screen. On entering the correct credentials or biometrics, the device is registered. (Couldn’t take screenshot of the popup asking for the lock screen password due as android has blocked it due to security policies.)



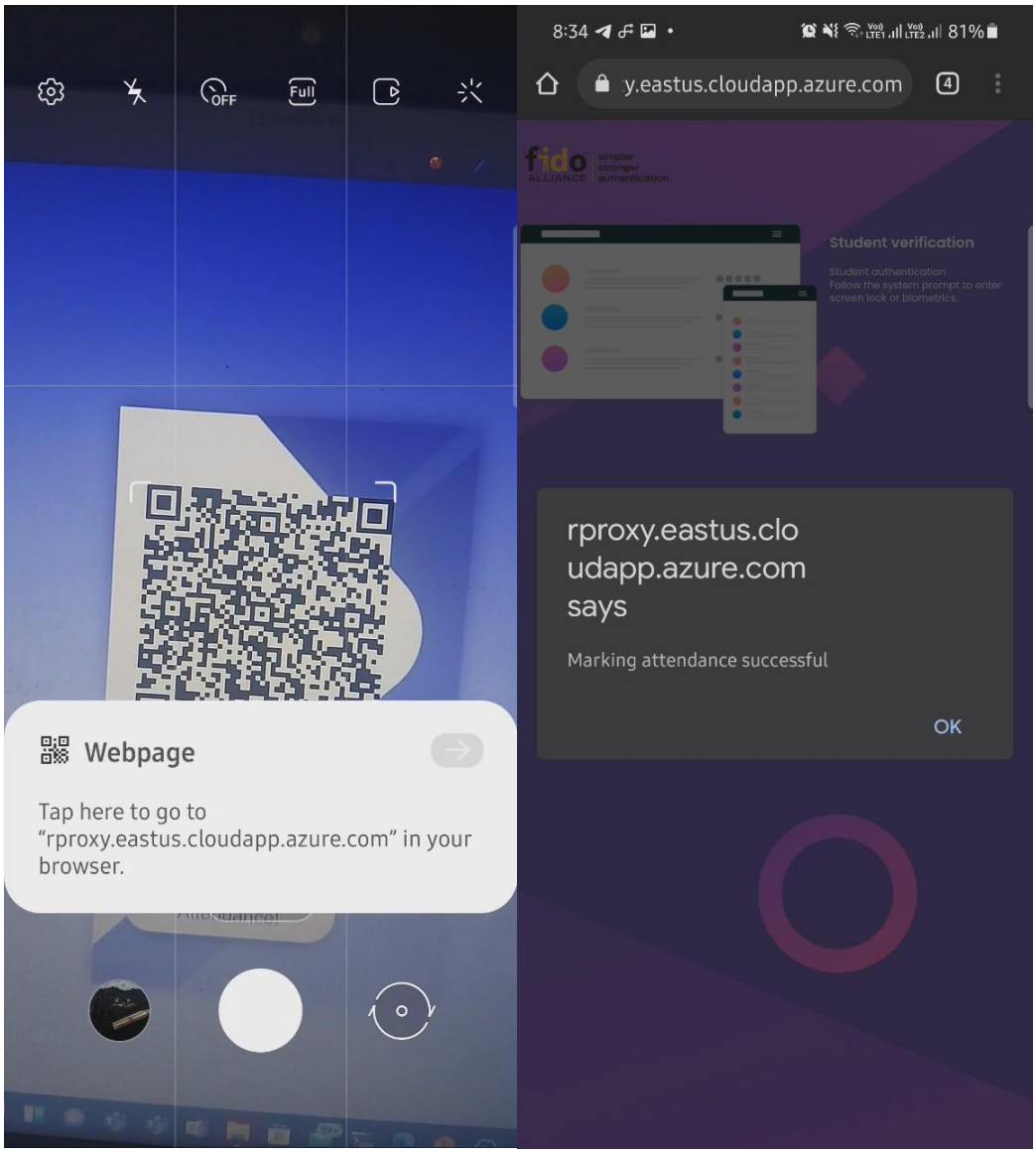
When all the students have enrolled their devices, an institute is ready to use the Reverse Proxy portal for seamless student attendance. During a class, the instructor can open the instructor's portal to generate a QR Code.

Link to instructor's portal is https://adityamitra5102.github.io/Reverse_Proxy/getportal



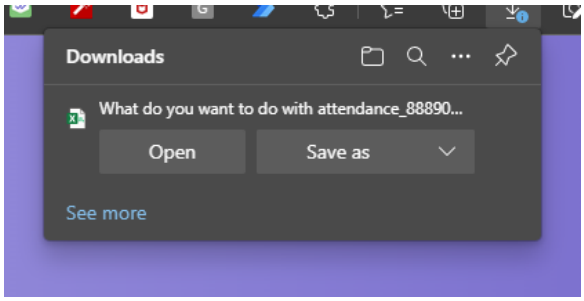
This screen can be shared with the students. The instructor must keep this page open otherwise the same code will not be generated again and he must restart the attendance process. [1]

The students scan this QR Code on their registered smartphones. [2] Then, the students will have to verify their screen lock or biometric when the correct credentials are entered, marking the attendance will be successful.

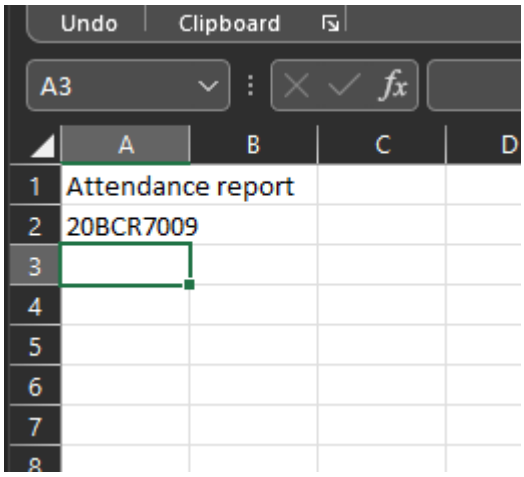


It is a very seamless process to mark the attendance. Just scan the QR and touch the fingerprint sensor of the phone.

When all the students have marked their attendance, the instructor can click the ‘Download Attendance’ button on the instructor’s portal to download the attendance report in a CSV format.



The registration numbers of the students who has marked their attendance will be listed here.

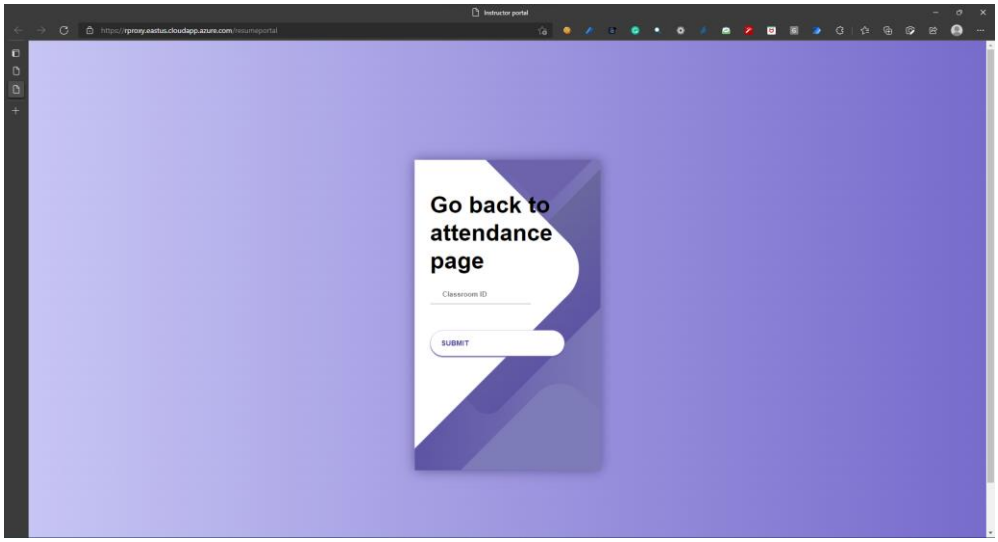


Hence, using Reverse Proxy is extremely easy and this can be implemented in educational institutions in a service model with no upfront cost.

Some basic troubleshooting:

[1] Instructor has closed the attendance portal and can't download the attendance in CSV format.

He can use the resume portal link to restore the page, but he must remember the class code. Link to resume portal page: https://adityamitra5102.github.io/Reverse_Proxy/resumeportal



Has he also forgotten the class code? Well, this case might be a bit complicated for non-technical users and this will not be mentioned in the documentation of this project. The QR code contains the class code as a payload to a HTTP GET request. Hence, it can be retrieved from the browser history of any student.

[2] The project uses cookies to member the registration number of the student. Has the student disabled cookies on his device or has issues with scanning the QR? He can use this page to mark the attendance in that case. https://adityamitra5102.github.io/Reverse_Proxy/attendance