

CS579 Cyber Security with Blockchain

Assignment 2

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I divided this project into 3 parts: **Admin** Panel, **Teacher** Panel and **Student** Panel. I'll describe features of each panel one by one.

Admin Panel

The first account is automatically made admin. So, there is only 1 admin. The Admin Panel will be shown only to the admin. This authentication is done using admin's public key. The job of admin is to add new students and teachers. This can be done only by the admin. Admin can also see a list of existing students and teachers.

This is the admin panel when there is no existing student and teacher (hence no list is displayed here):

Grading DApp

Your Public Key: 0x47823c310eada2fbd12a6218815ab309f0ba6be9

Admin Panel

To add a new Teacher:

Public Key:

Course:

Add Teacher

To add a new Student:

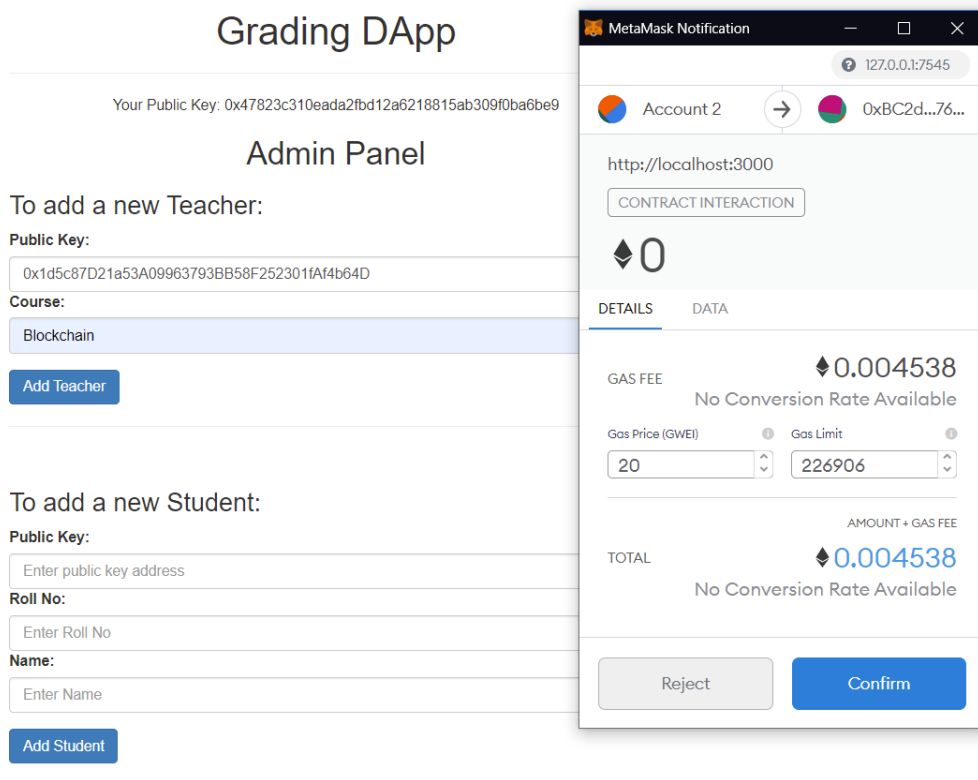
Public Key:

Roll No:

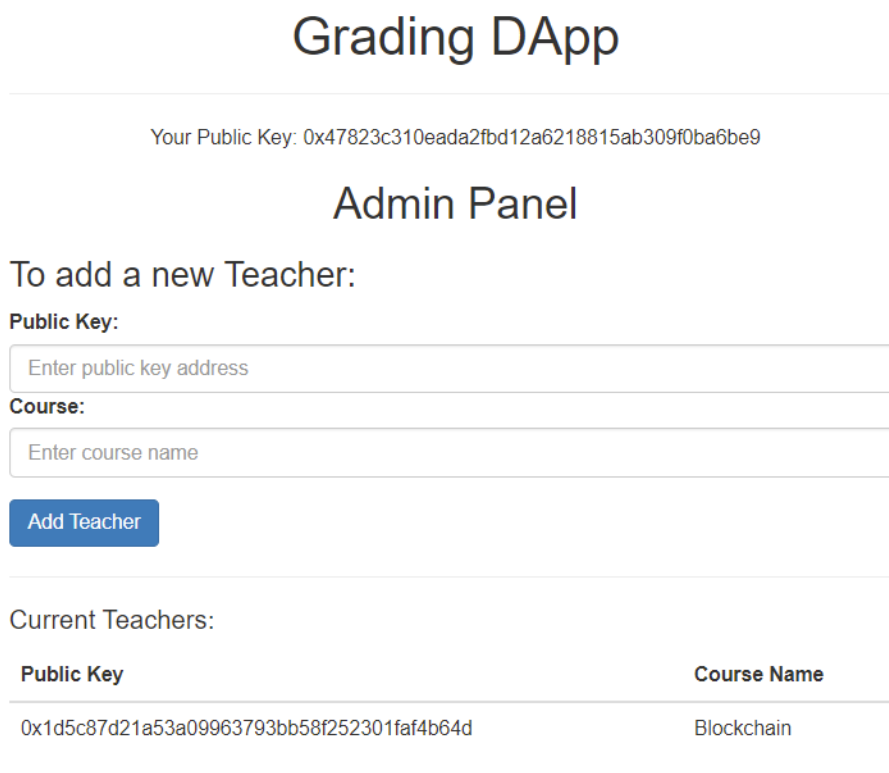
Name:

Add Student

As you can see, Admin Panel has 2 forms. First form is to add a new teacher. The second form is to add a new student. I'll firstly show the first form. In the image below, I added public key and course name of a teacher and clicked "Add Teacher". This created a transaction notification in MetaMask. On confirming this transaction, the new teacher will be added.



As you can see in the image below, the teacher is added. Hence, now the list is visible.



In a similar way, a new student can be added using the student form in Admin Panel. I added 2 teachers and 3 students. The final result is:

Grading DApp

Your Public Key: 0x47823c310eada2fbd12a6218815ab309f0ba6be9

Admin Panel

To add a new Teacher:

Public Key:

Course:

Add Teacher

Current Teachers:

Public Key	Course Name
0x1d5c87d21a53a09963793bb58f252301faf4b64d	Blockchain
0xa75fbc870fe81f80160efb807823f3bf8c0b09dc	Security

To add a new Student:

Public Key:

Roll No:

Name:

Add Student

Current Students:

Public Key	Roll Number	Name
0x598582716dcb733245445f4e23f5353dad2e789	1701CS20	Divyanshu N Singh
0x98ad56139b0056c1d2aa38573ef4eae6cbf245e2	1701CS100	Albert Einstein
0x9f62197a146476dc6a2bd3669f34e5694e051ba1	1701CS102	Julius Caesar

Teacher Panel

Teacher panel will be shown only to teachers. This authentication is done using teacher's public key. From teacher panel, a teacher can add grades of a student using the form as shown in the image below. Students which are graded are listed in the table below the form.

Grading DApp

Your Public Key: 0x1d5c87d21a53a09963793bb58f252301faf4b64d

Teacher Panel

Select Student Roll No

1701CS20

Select Grade

AA

Grade

Students Graded:

Roll Number	Grade
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As you can see, 3 roll numbers are shown in dropdown and 8 grades are shown:

Select Student Roll No

1701CS20

1701CS20

1701CS100

1701CS102

Select Grade

AA

AA

AB

BB

BC

CC

CD

DD

F

If a teacher gives a grade to one student then it is stored in the blockchain and the teacher can not change the grade now. As you can see in the image below, the roll number of the student (1701CS20) disappears from the dropdown as he has already been graded.

Grading DApp

Your Public Key: 0x1d5c87d21a53a09963793bb58f252301faf4b64d

Teacher Panel

Select Student Roll No

1701CS100

1701CS100

1701CS102

AA

Grade

Students Graded:

Roll Number	Grade
1701CS20	AA

After grading all students, all roll numbers disappear from dropdown:

Grading DApp

Your Public Key: 0x1d5c87d21a53a09963793bb58f252301faf4b64d

Teacher Panel

Select Student Roll No

Select Grade

AA

Grade

Students Graded:

Roll Number	Grade
1701CS20	AA
1701CS100	AB
1701CS102	AA

Student Panel:

Student panel will be shown only to students. This authentication is done using student's public key. In Student Panel, a student can see his/her grades.

Grading DApp

Your Public Key: 0x598582716dcb733245445f4e23f5353dad2e789

Student Panel

Your Grades:

Course	Grade
Blockchain	AA
Security	AB

If no grades have been added yet, then a message is displayed for the same.

Grading DApp

Your Public Key: 0x9f62197a146476dc6a2bd3669f34e5694e051ba1

Student Panel

YOU ARE NOT GRADED YET!