FINAL REPORT OF TERM PROJECT

CMSE 353

Team members

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GROUP NO   : 01

PROJECT NAME   : Secure MS Teams Class Notebook System

REPORT START DATE   : 05.01.2021

SUPERVISOR Assoc.Prof.Dr. Alexander Chefranov

SEMESTER TERM   : Fall 2020-2021

Outline

Problem Definition

What is our problem? Our problem is that Microsoft Teams class notebook having 3 actors which are student, teacher and admin.Also we have 3 folders that we need to consider, in course folder teacher can read write and student can only read, in teacher folder only teachers can read write but one teacher can not write or read file of another teacher, in student folder students can read write but one student can not read or write other student's file and also teachers can read write.Admin will access to everything.Also we need to secure folders with RSA.
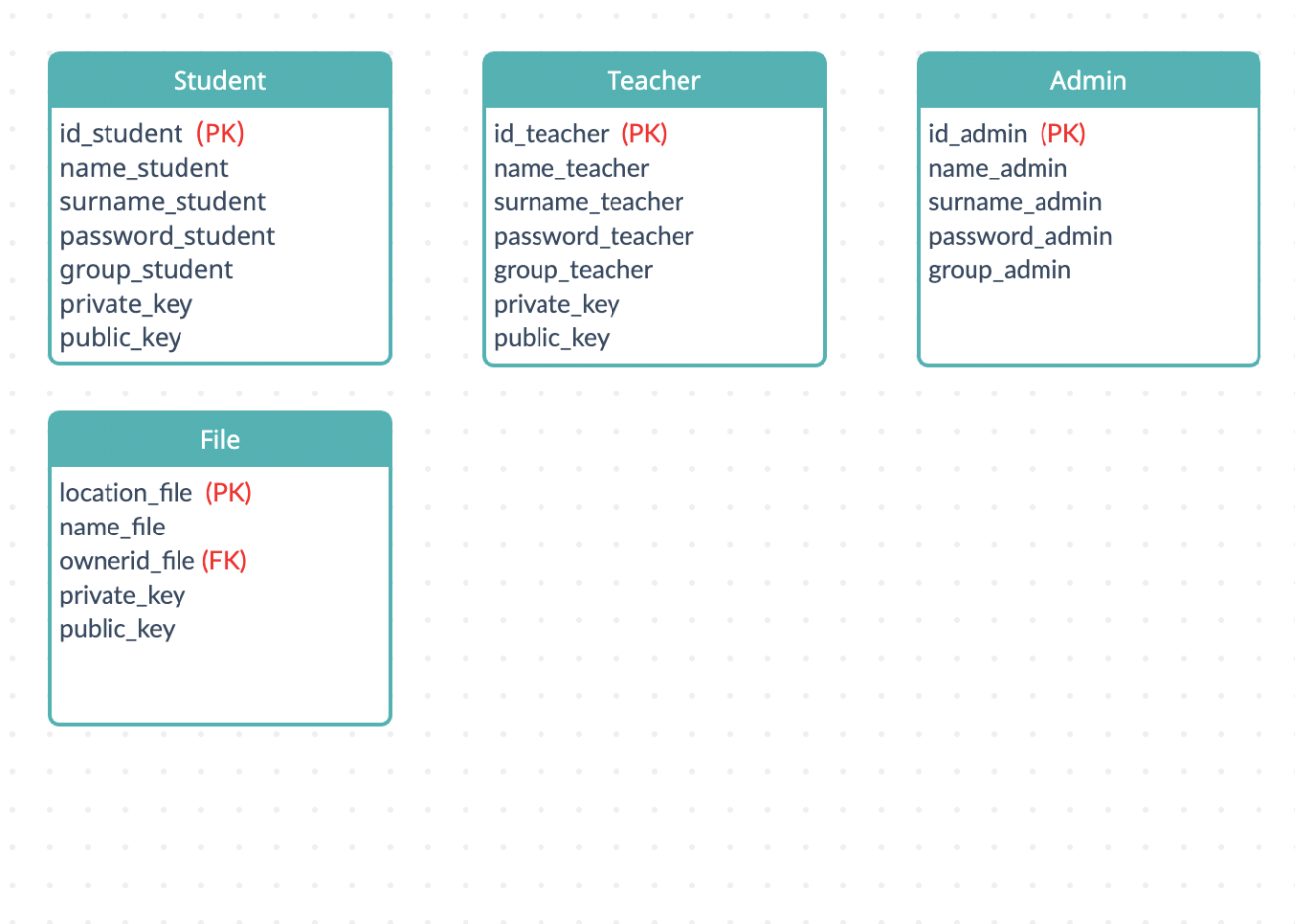
Task distribution between team members

Our team leader made the all-big part of coding. Olcay did the all graphical design parts. Cemal did researches about RSA and how to implement this in our project to work properly. Arda did all database structures. Barış tested the whole system if there is any problem, he informed us to fix it quickly. In general we met every day at 8 o'clock and also we help each other to solve all possible problems together.

Description of algorithm for solving your problem

We used recursive algorithm to delete files under folder. We used binary search algorithm for searching id in our system where necessary, for example we used student id too much in our program.

Description of database structure designed

Student

id_student (PK)
name_student
surname_student
password_student
group_student
private_key
public_key

Teacher

id_teacher (PK)
name_teacher
surname_teacher
password_teacher
group_teacher
private_key
public_key

Admin

id_admin (PK)
name_admin
surname_admin
password_admin
group_admin

File

location_file (PK)
name_file
ownerid_file (FK)
private_key
public_key

In our data we have 4 classes Student, Teacher, Admin and File and they have different attributes related with their feature

Description of tools we used for implementation of your proble the details of their installation and preparation for usage

We use scene builder and Javafx package for GUI (Graphical User Interface).We use intellij IDE (Integrated Development Environment) for Java, as you understand we use object oriented programming approach. We use MySQL for database side of our project. We use MySQL workbench for database interface. Finally we use jd11 package.

Description of the developed program

We can login the system as admin. Admin can create students and teachers, also automatically generates public and private keys for them. We use public key to encrypt the folders and private key to decrypt the folders. We did the system in such way that student can only read the course materials folder and they can read write to their own files in student materials folder means that they cannot write to other student's files. Teachers can read write to student's files and they can also read write to their own files in teacher materials folder. Admin have access to everything.

User guide

User or who is going to use this program should have windows pc to operate our program. Also user should install the jdk11 which is Java and in order to operate java you need

to install intelliji IDE. Finally you need to install javafx package for Graphical User Interface.

You can use the program as we explained in the "description of the developed program" part
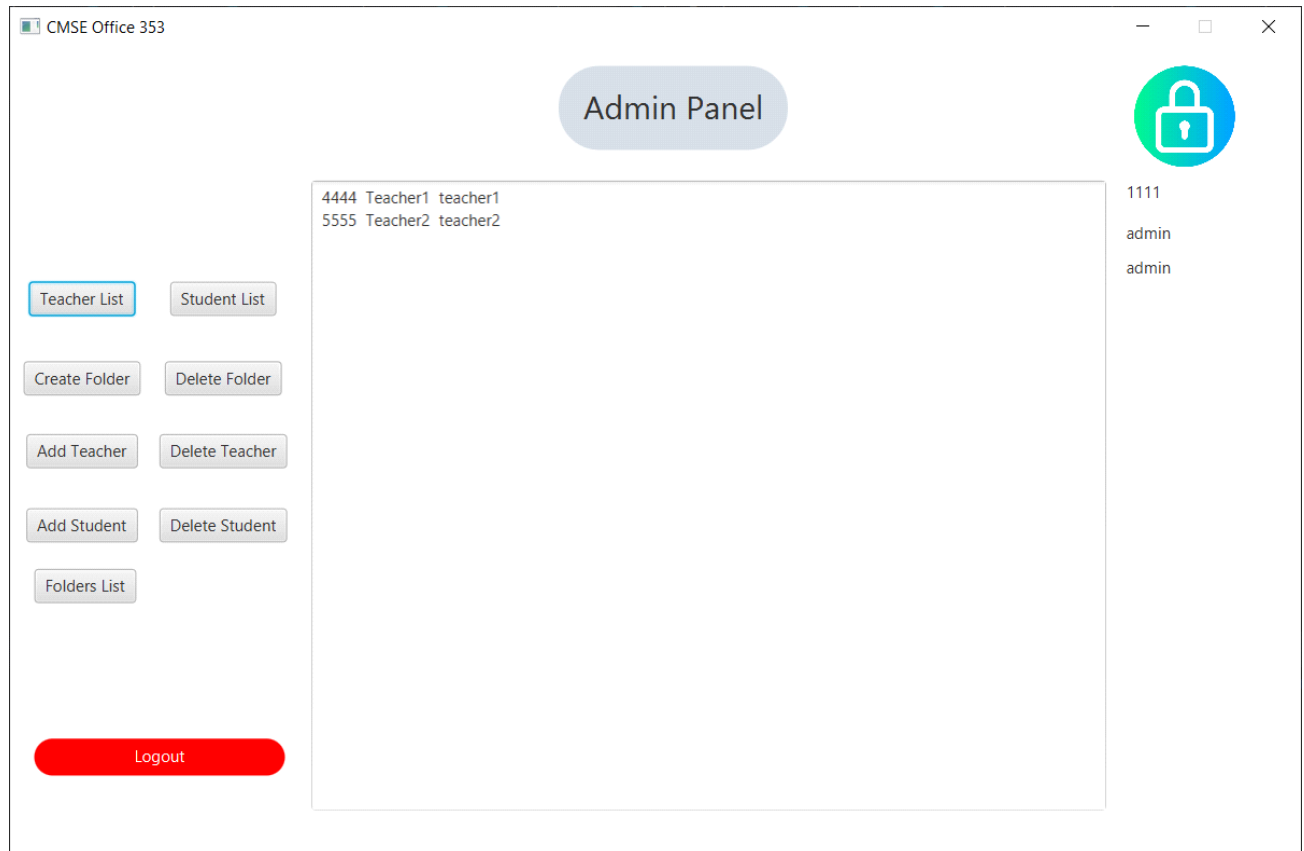
Screenshots of the runs
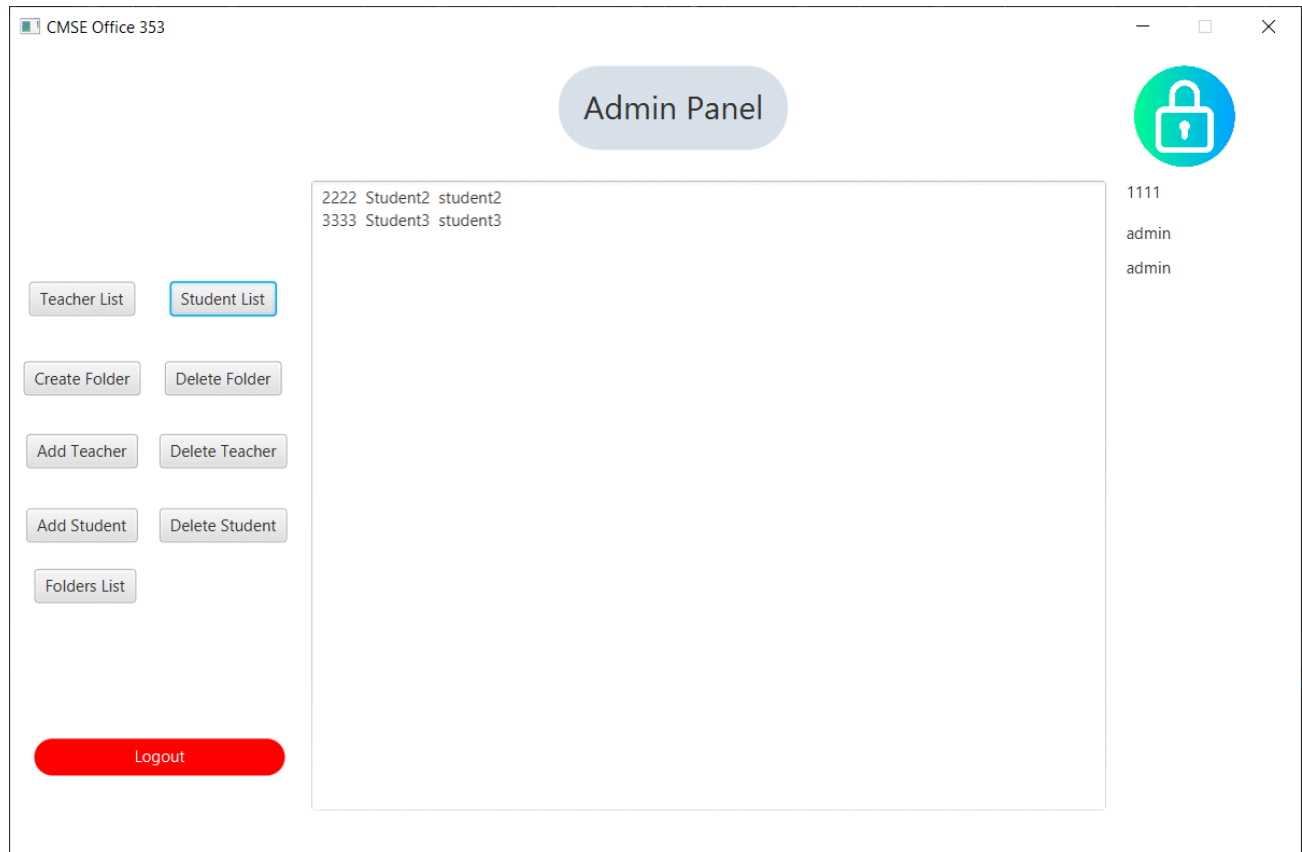
- This our startup of our program
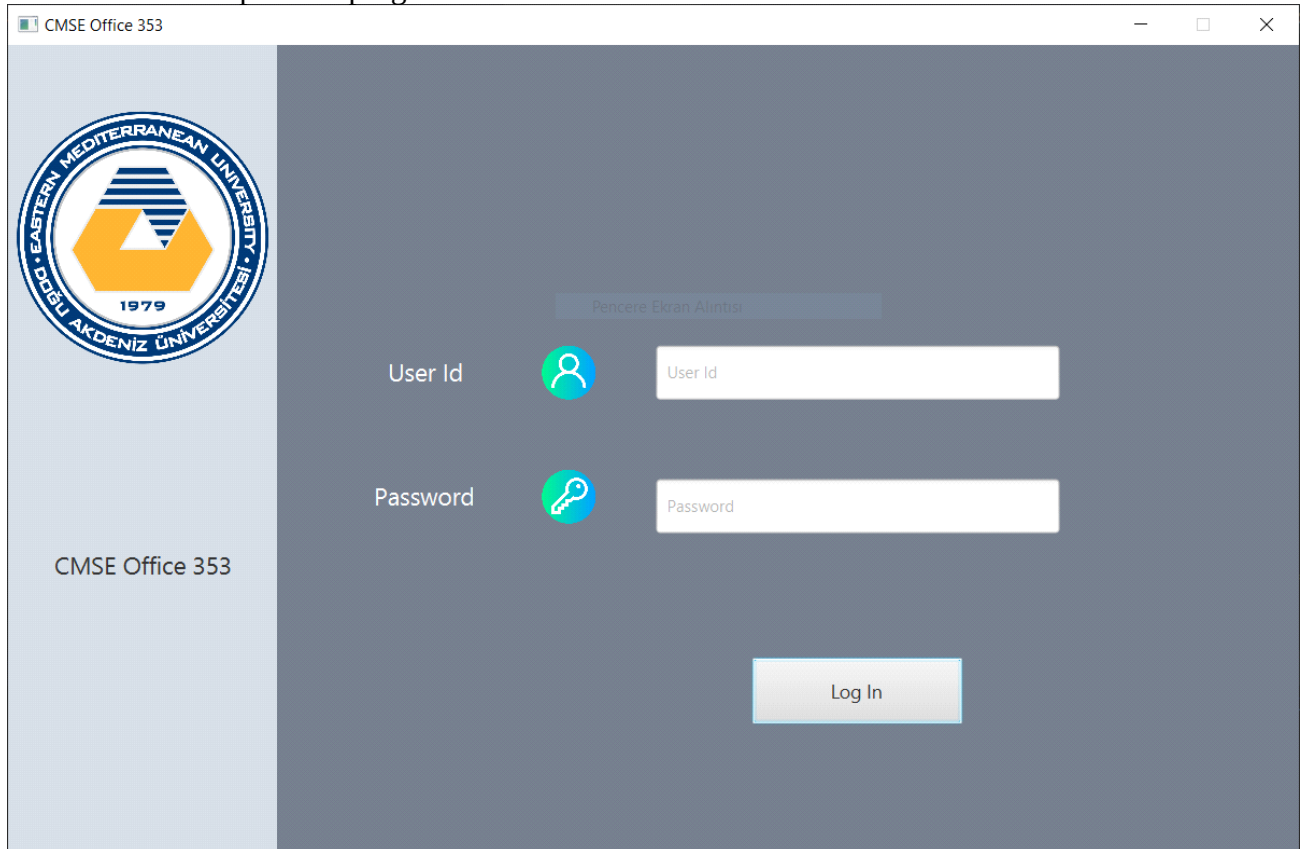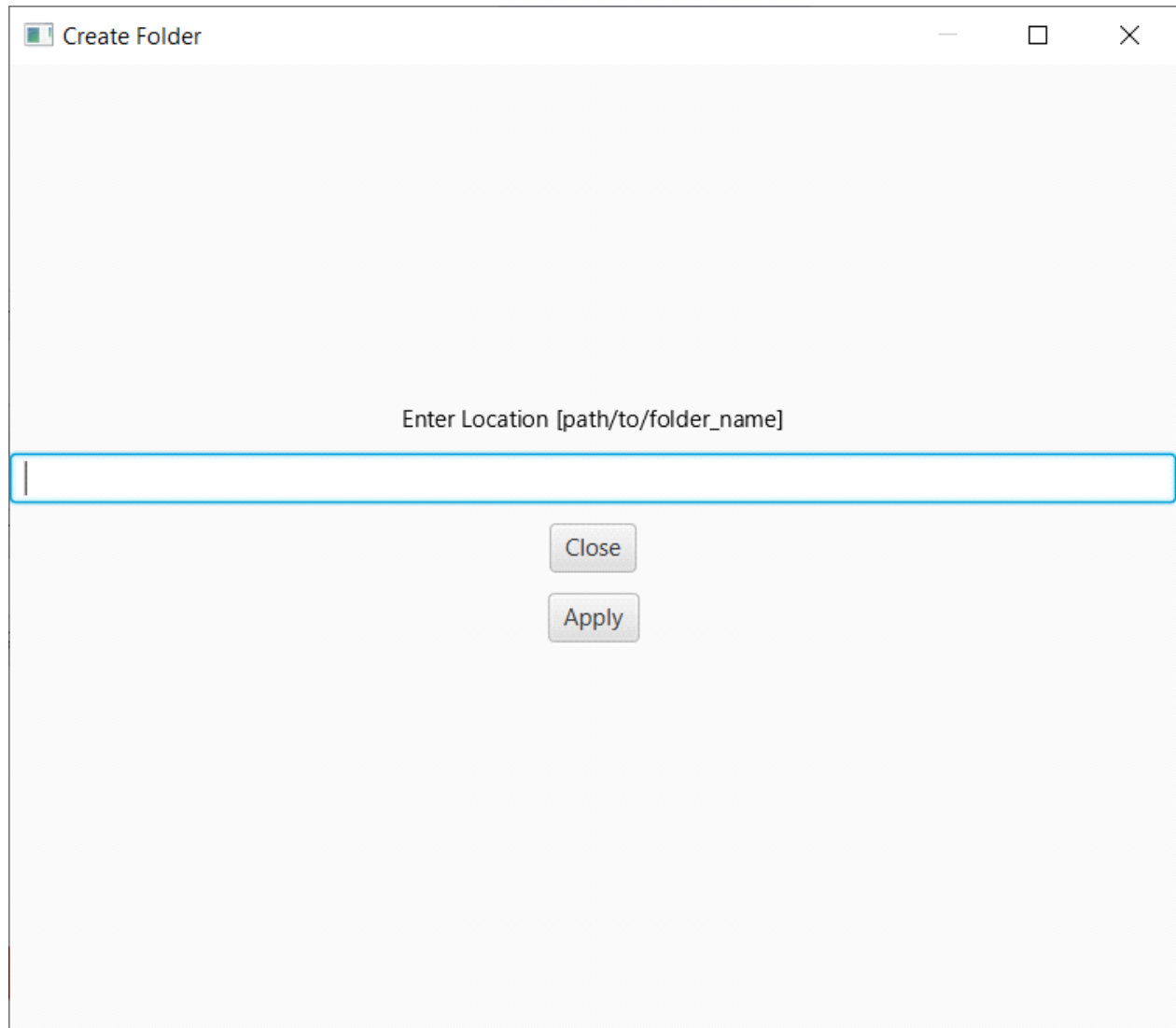
This our Admin Panel

3. When you clicked Teacher List it will show you the list of teachers

4. When you clicked Student List it will show you the list of students

5. When you clicked Create Folder it opens the new popup window that you can create folder

6. When you clicked Delete Folder it opens the new popup window that you can delete folder

Delete Folder — □ ✕

Pencere Ekran Alıntısı

Enter Location [path/to/folder_name] note:every thing under that file will be deleted

Close

Apply
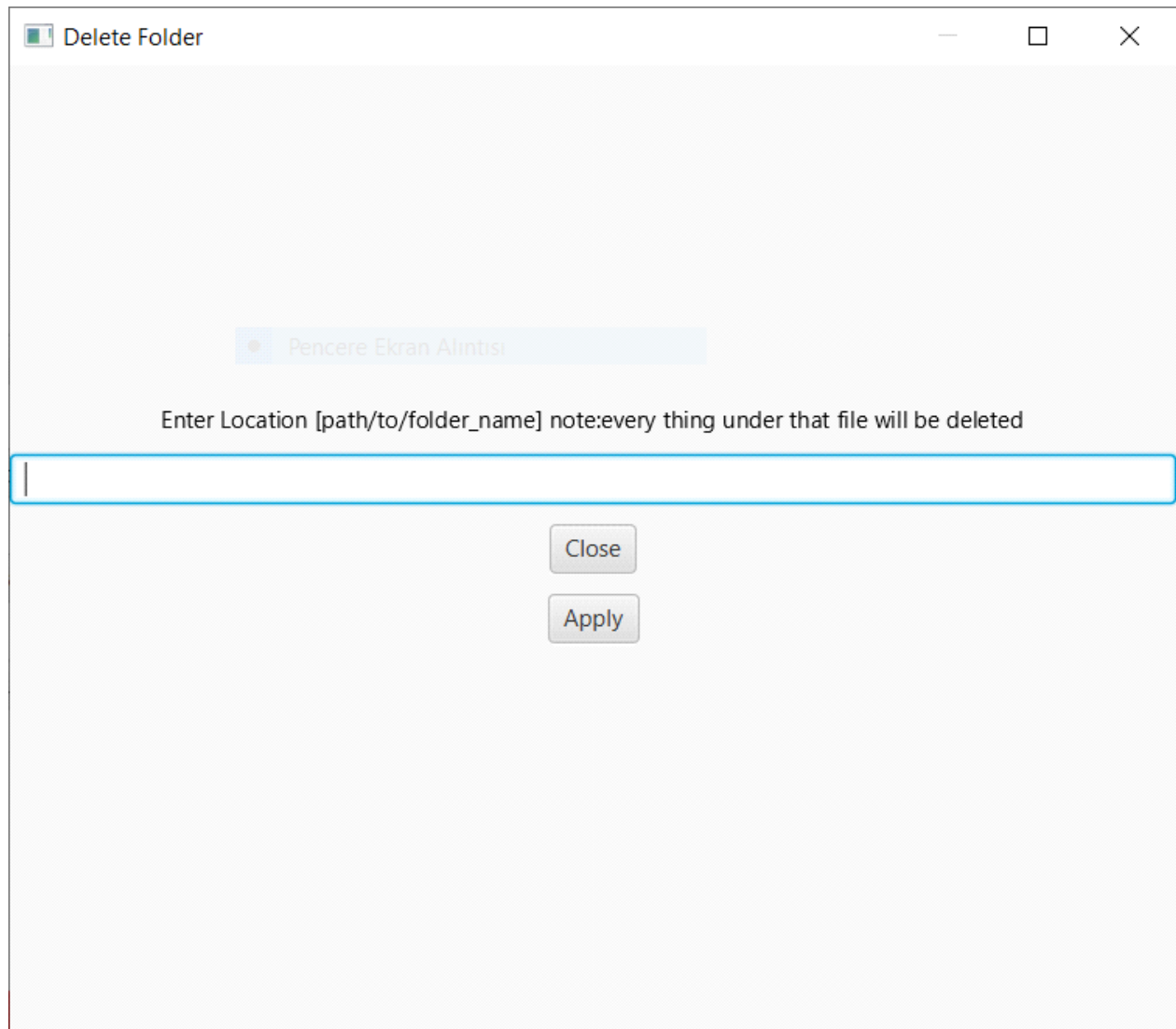
7. When you click add teacher you can write teacher details and create teacher or add teacher.

8. You can delete teacher by just writing Id of teacher then delete it.
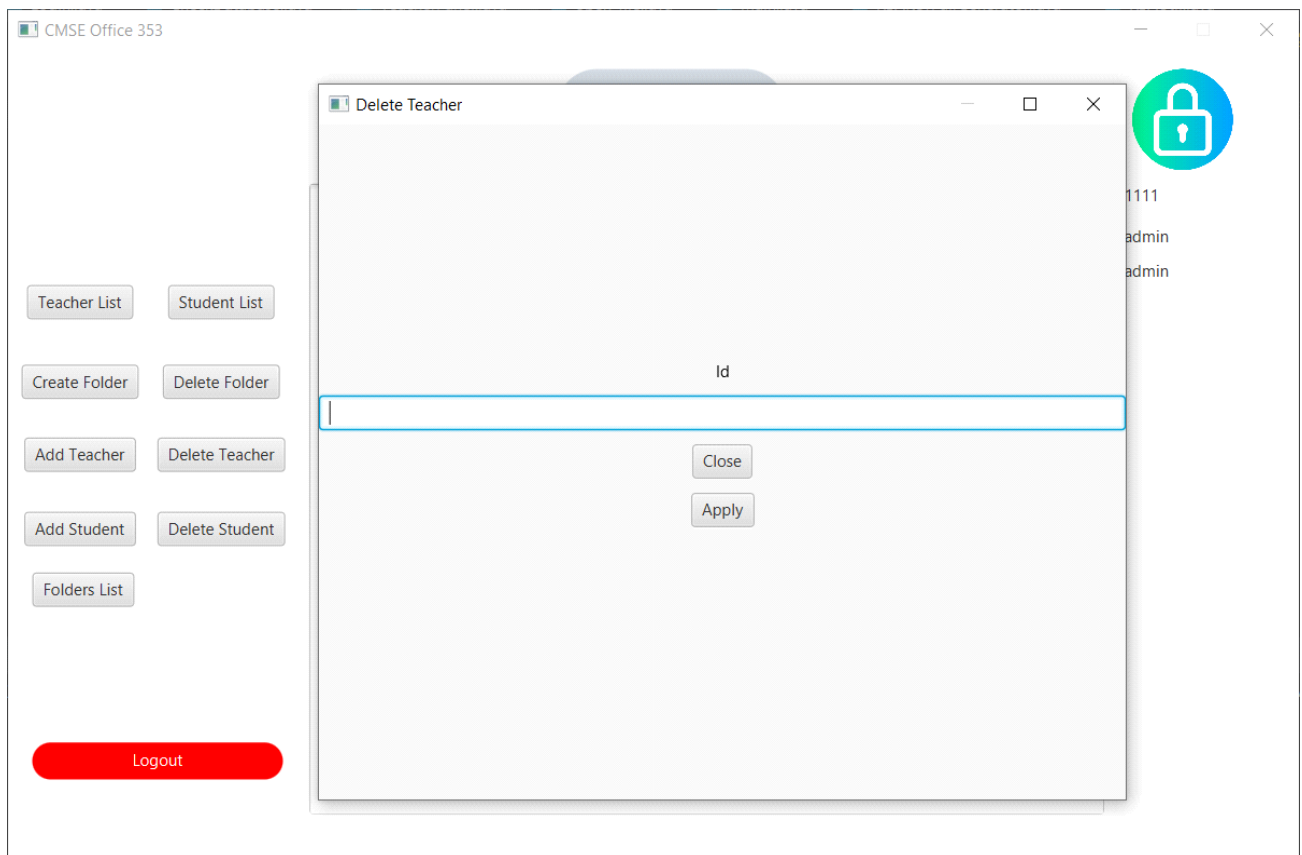
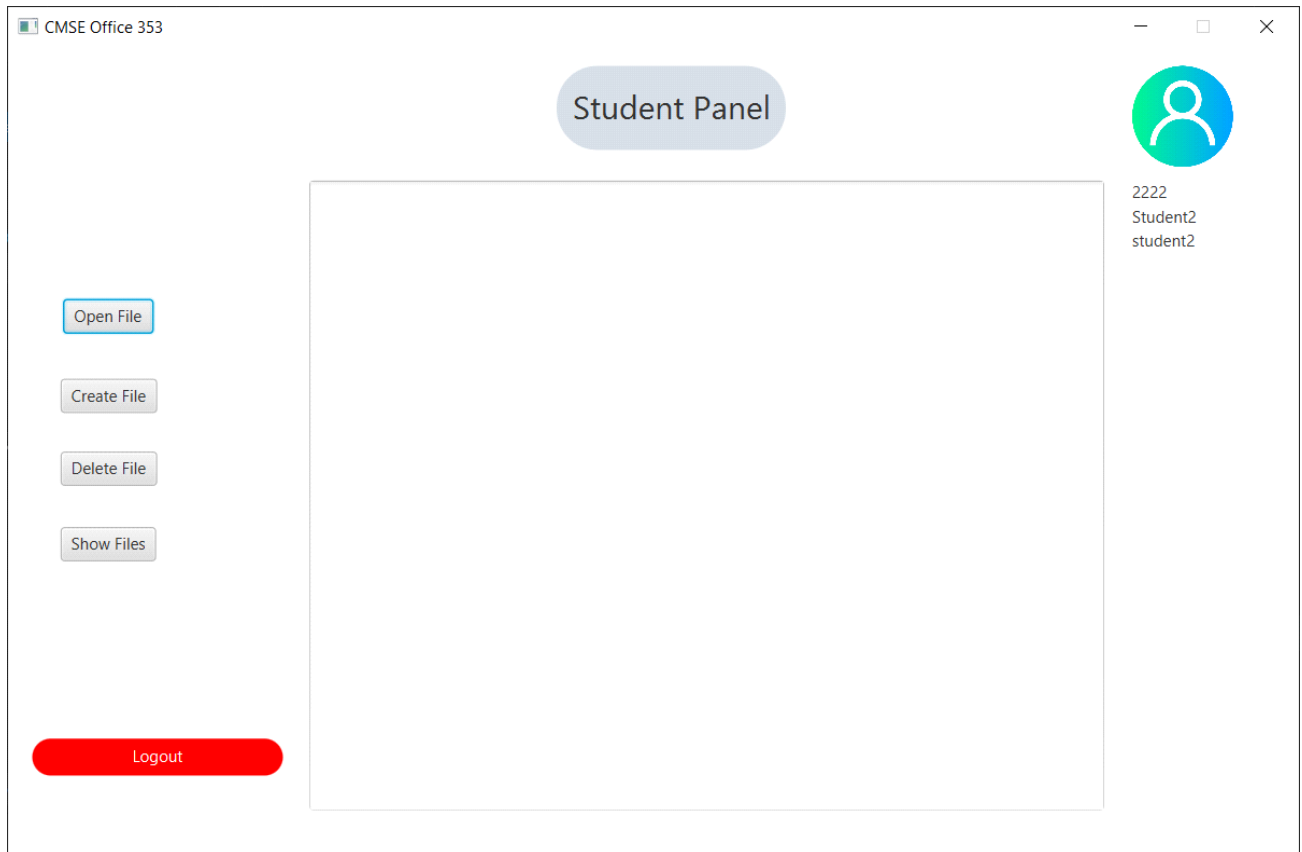9. When you click add student you can write student details and create student or add student.

10. You can delete student by just writing Id of student then delete it.
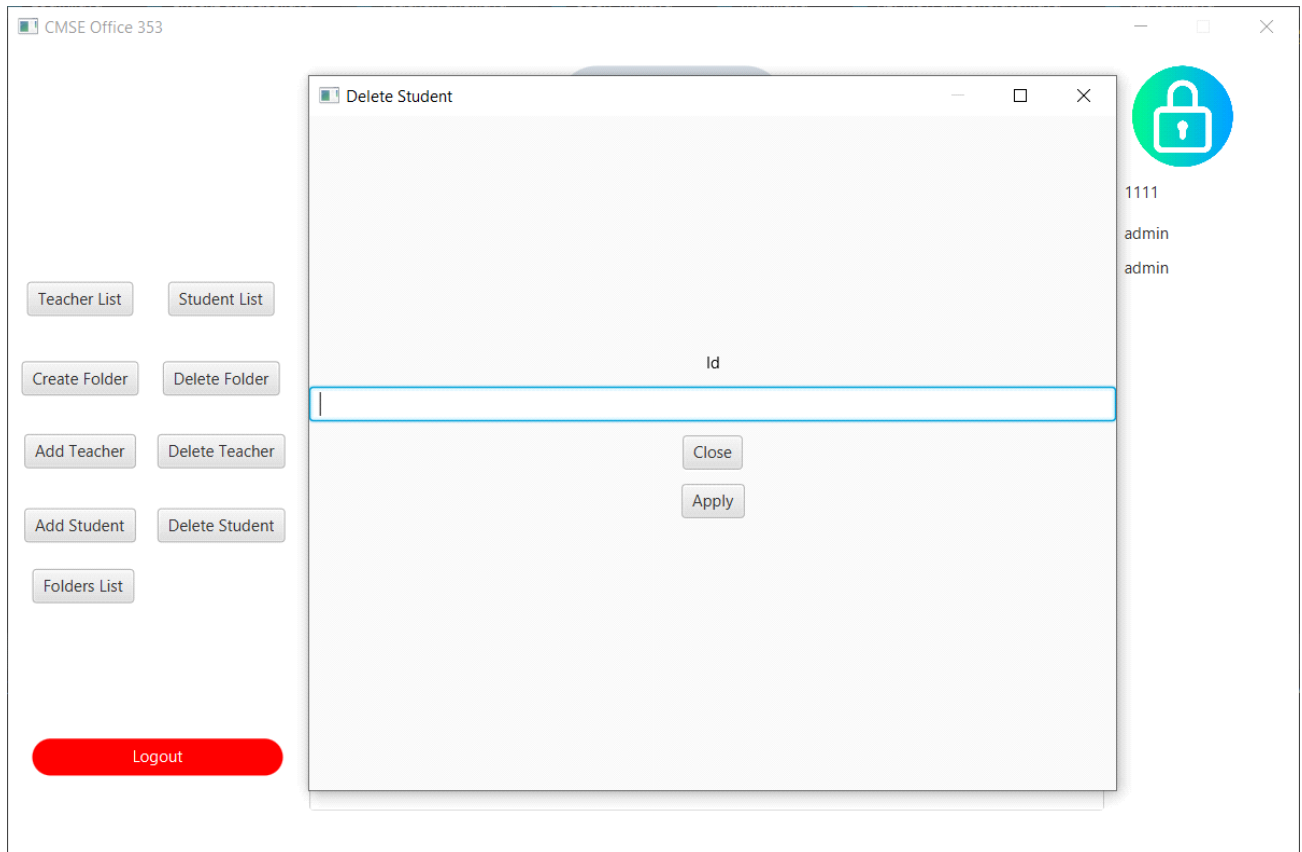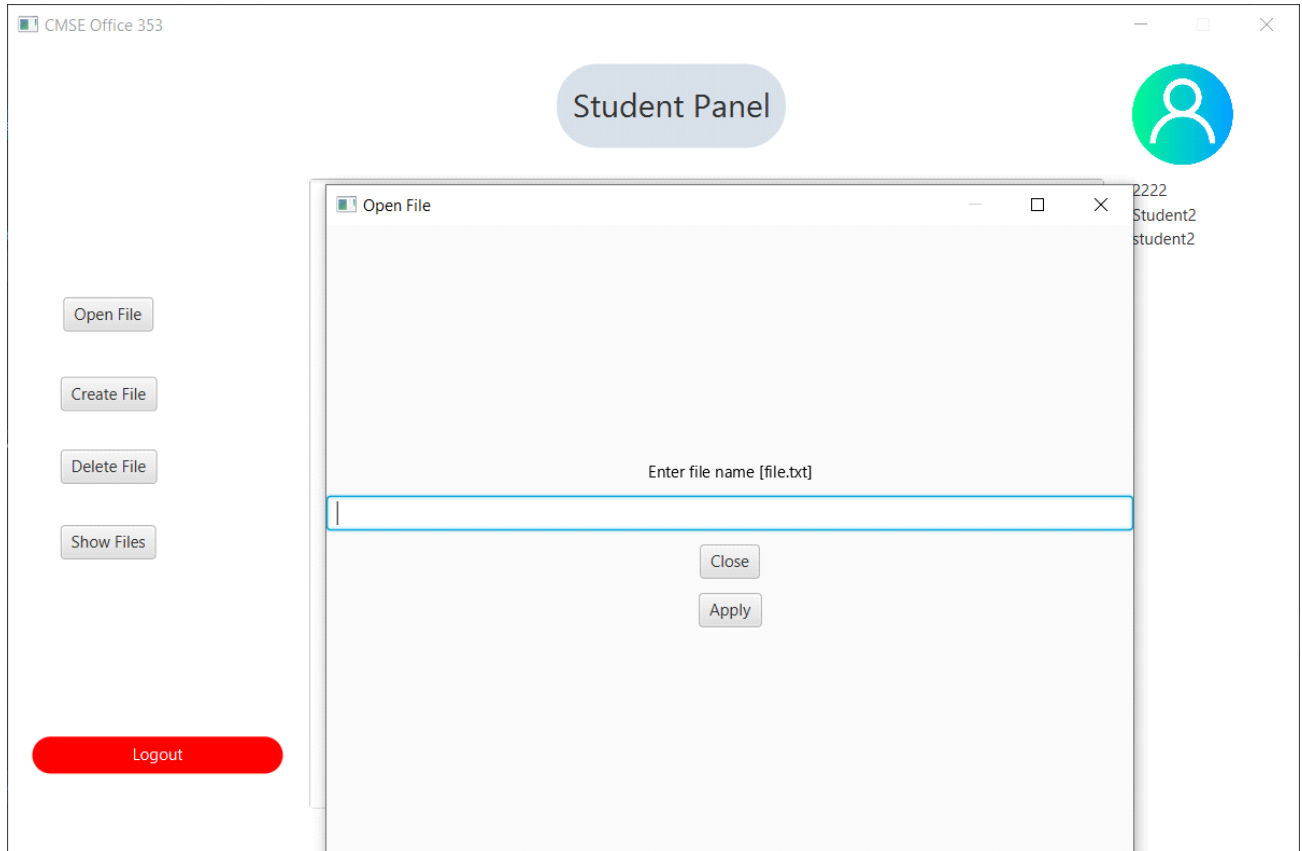
11. When you click show folder it will show you all the folders that are created.
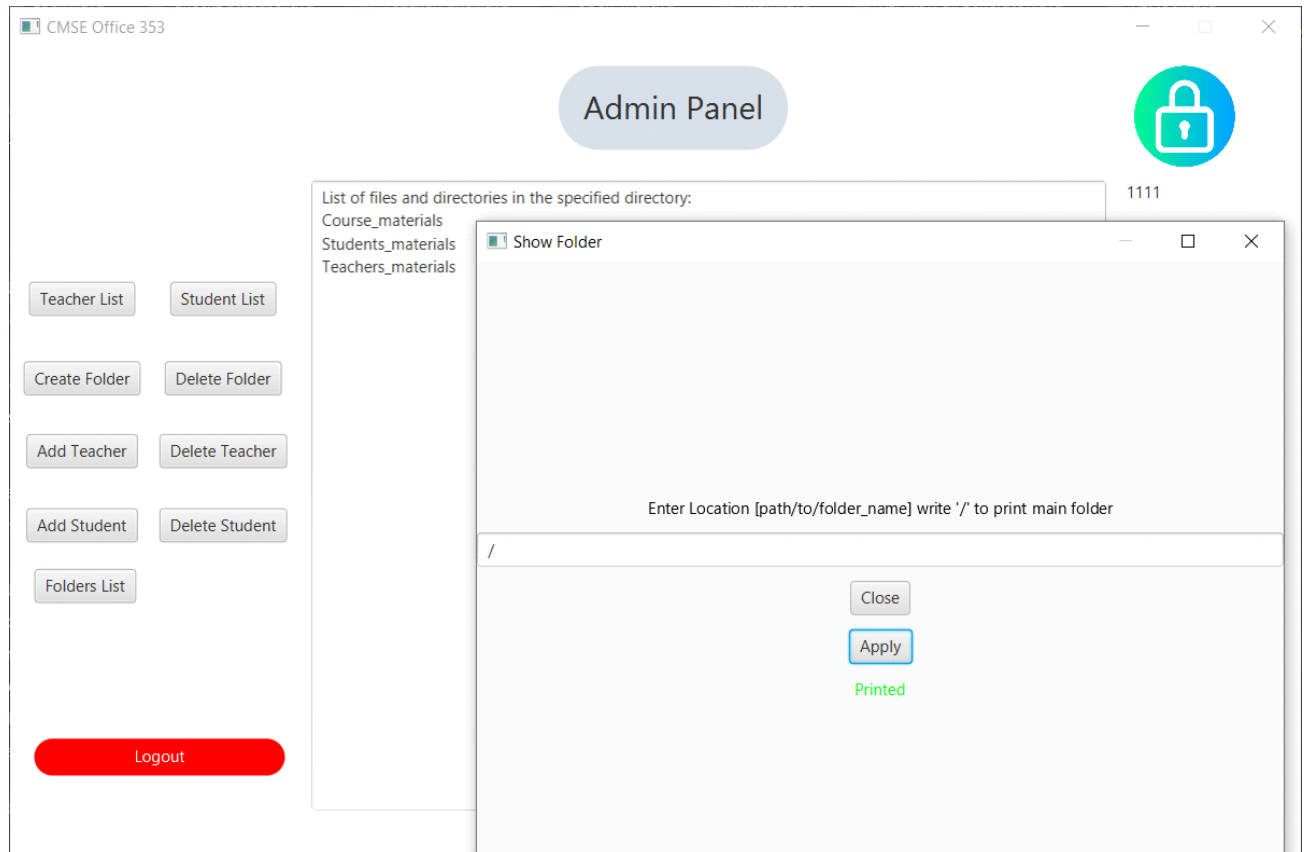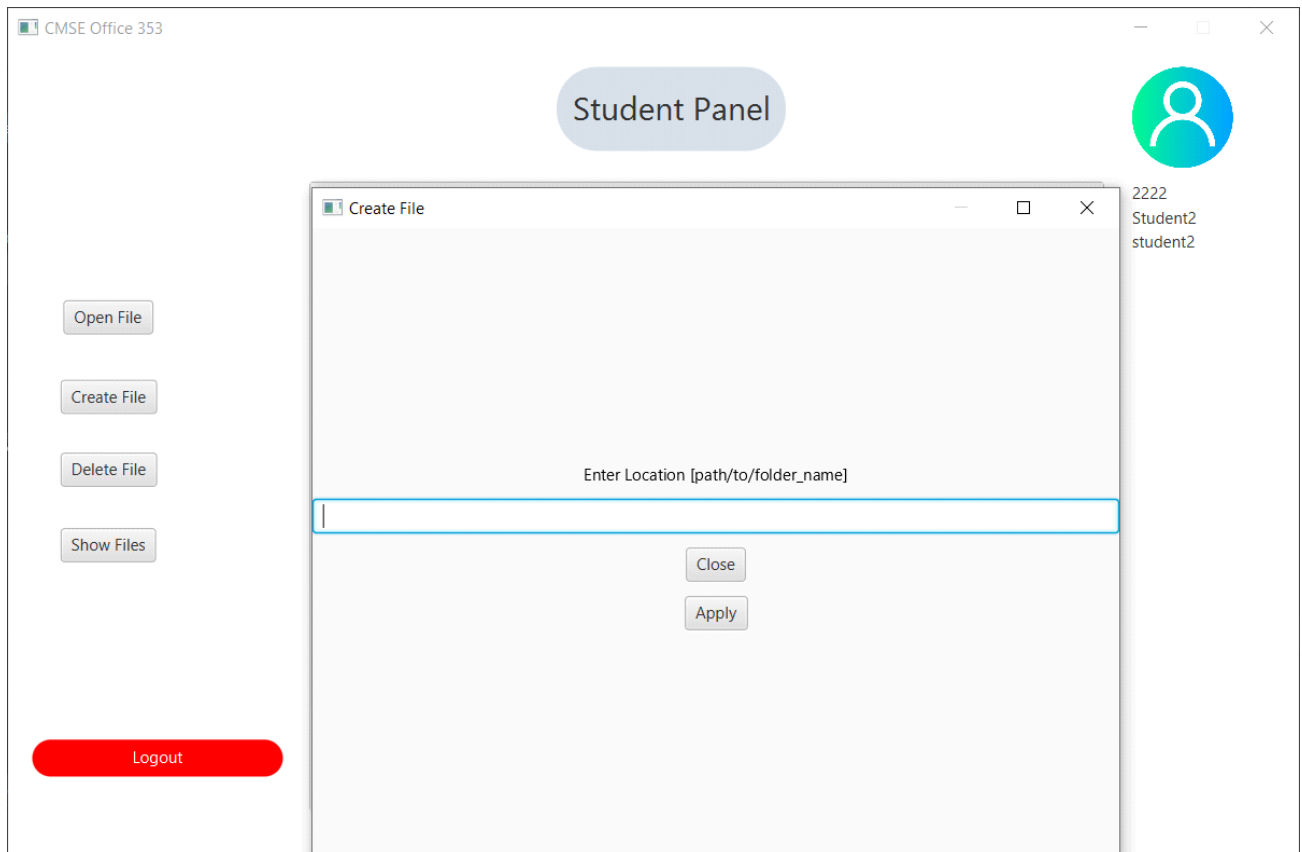
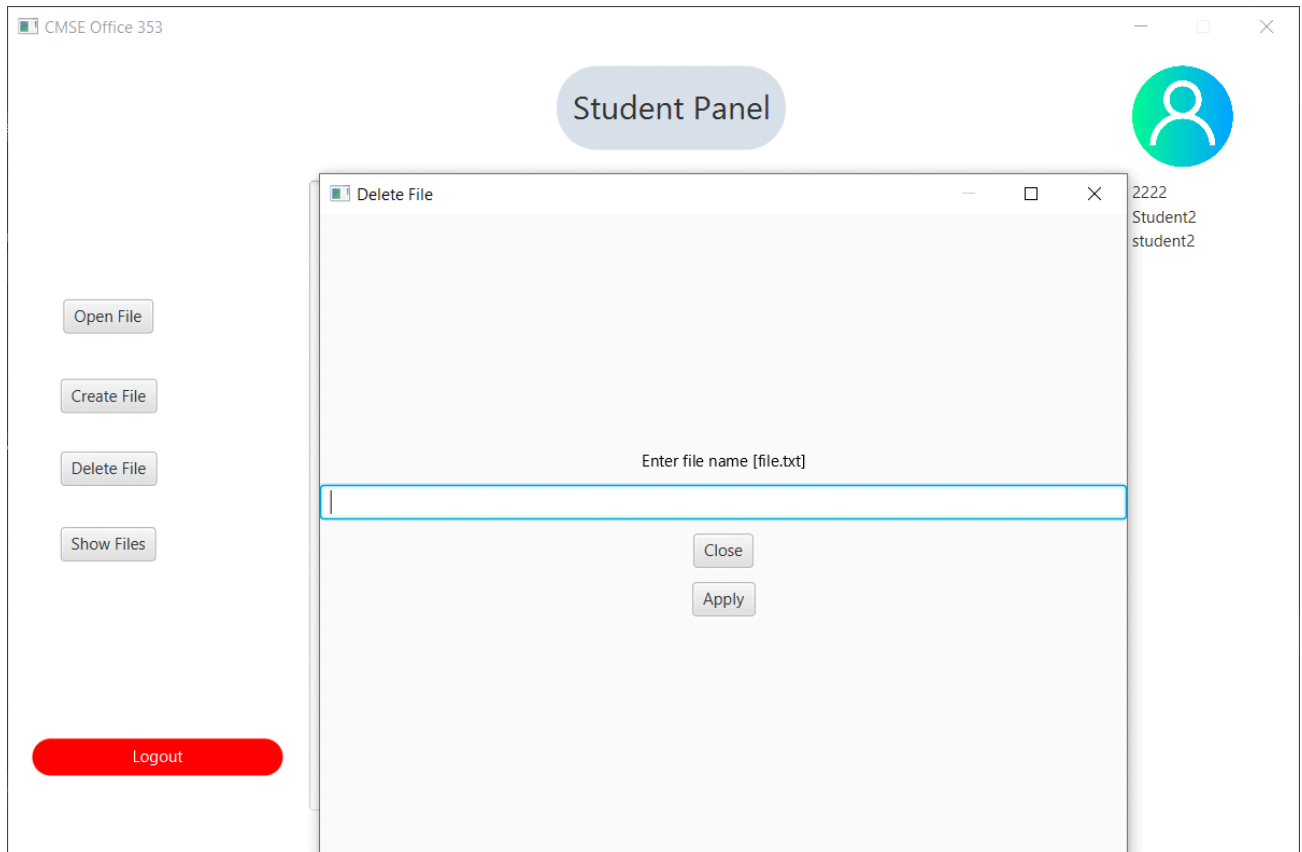12. As you see this is our Student Panel

13. Student will open file but just their own files and their course materials.
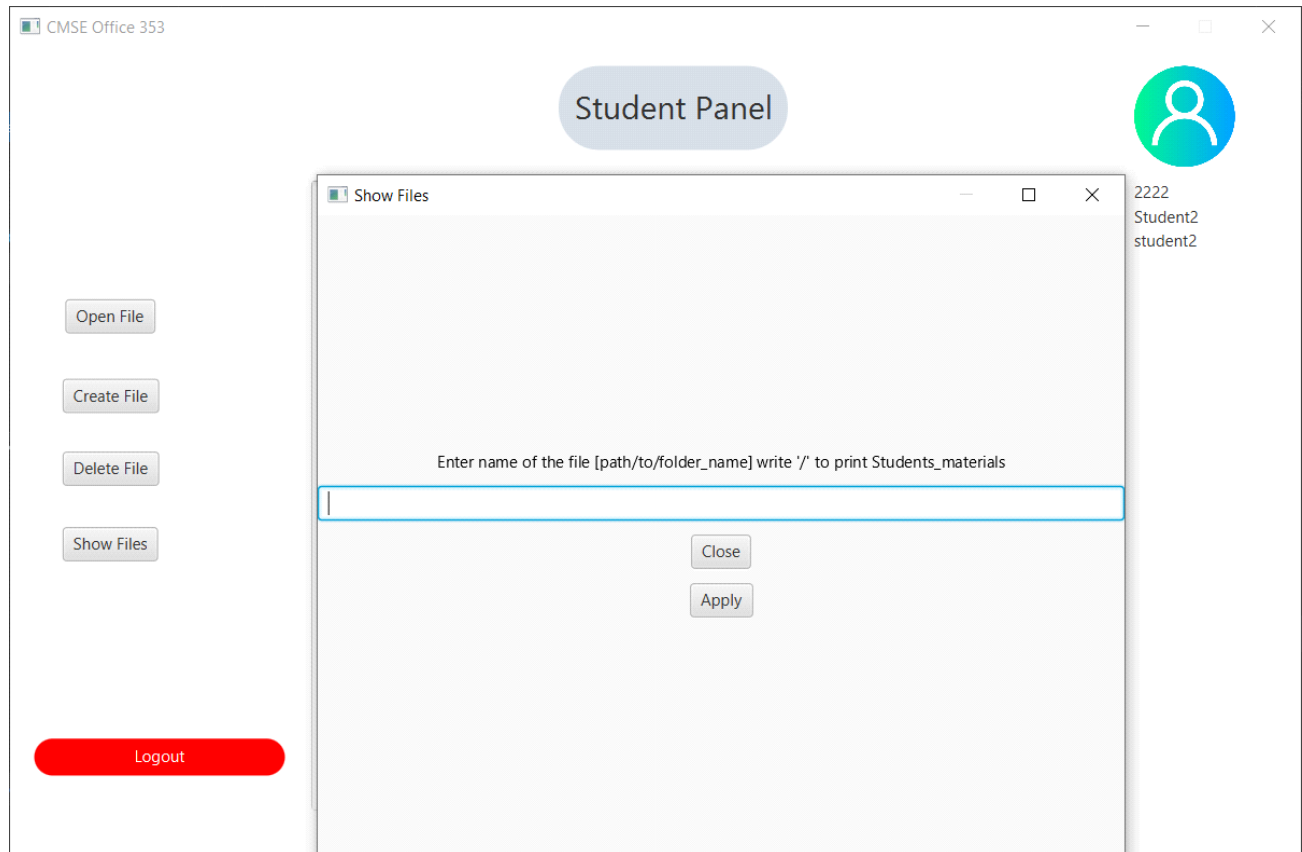
14. As you see student can create file and created file will be in student materials folder.

15. Student can be delete files but just created by themselves

16. Student can only view student materials and course materials.

17. Teacher can open files which are course materials, student materials and their own teacher files.

Teacher Panel

Open File

Create File

Delete File

Show Files

Logout

Open File

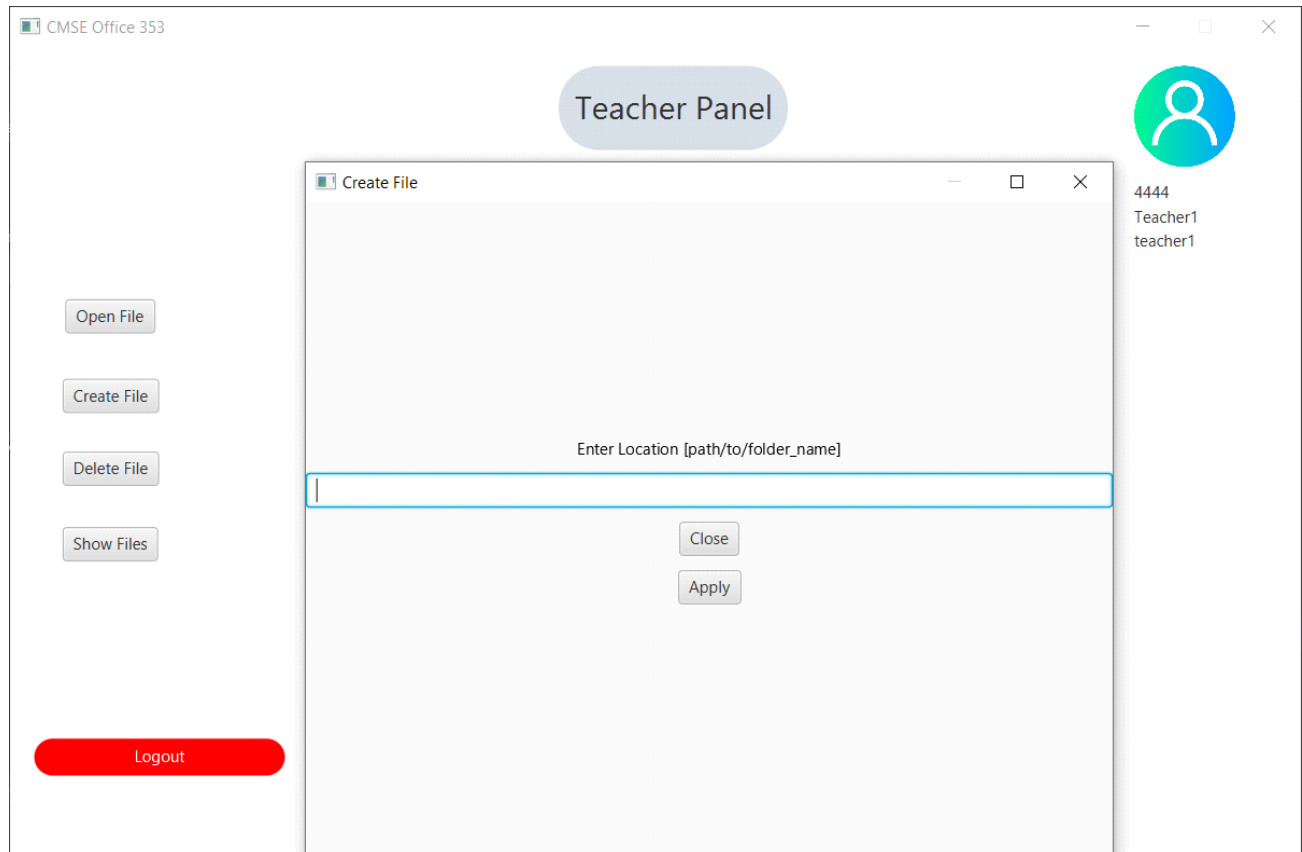Enter file name [location/file.txt]

Close

Apply

4444
Teacher1
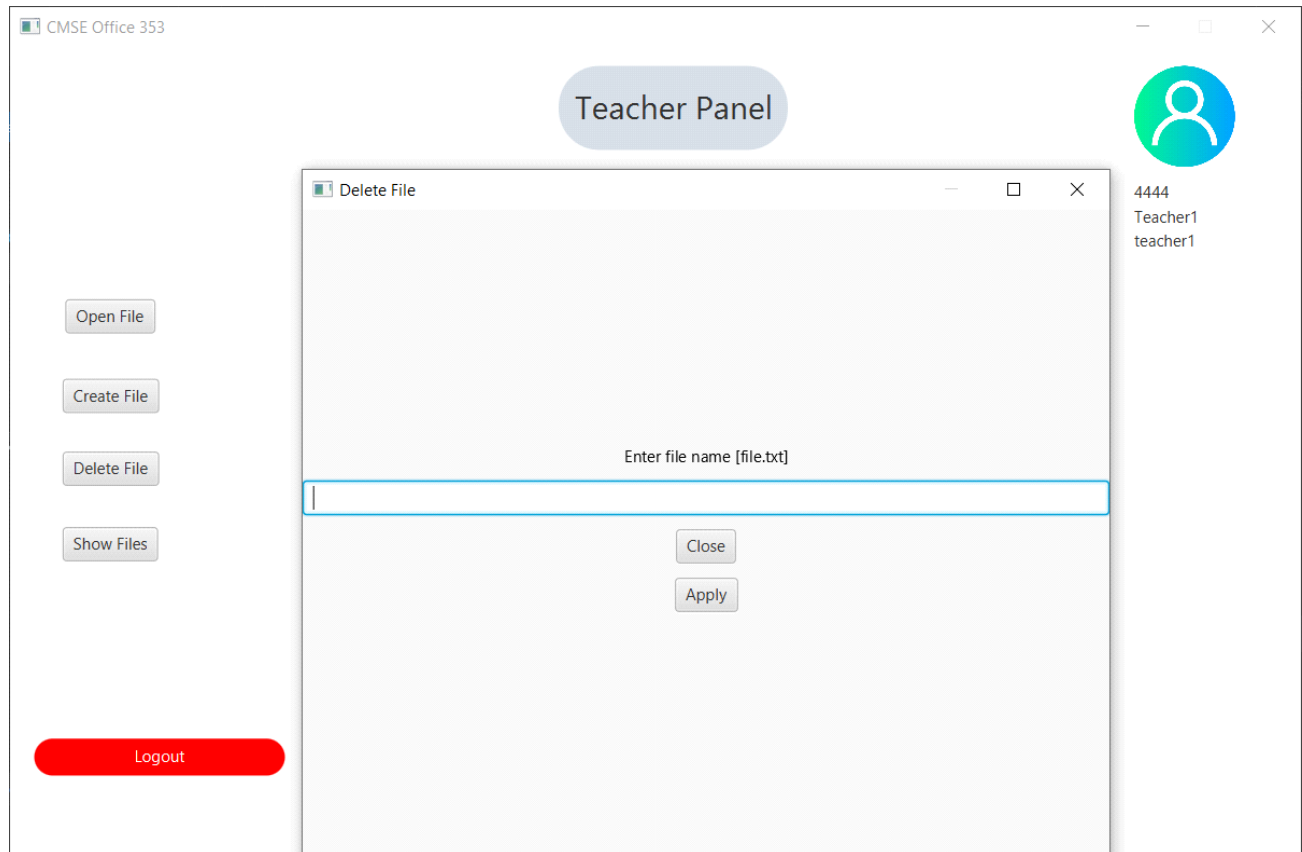teacher1

18. Teacher can create files under teacher materials folder and course materials folder.

19. Teacher can delete files which they created.

20. Teacher have access to and can view course materials folder, students materials folder and their own teacher materials folder.

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Teacher Panel

4444
Teacher1
teacher1

List of files and directories in the specified directory:
Course_materials
Students_materials
Teachers_materials

Open File

Create File

Delete File

Show Files

Logout

Show Files

Enter name of the file [path/to/folder_name] write '/' to print Students_materials

/

Close

Apply

Printed