

Mobile Application for Education Institute

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1. Logging Page.

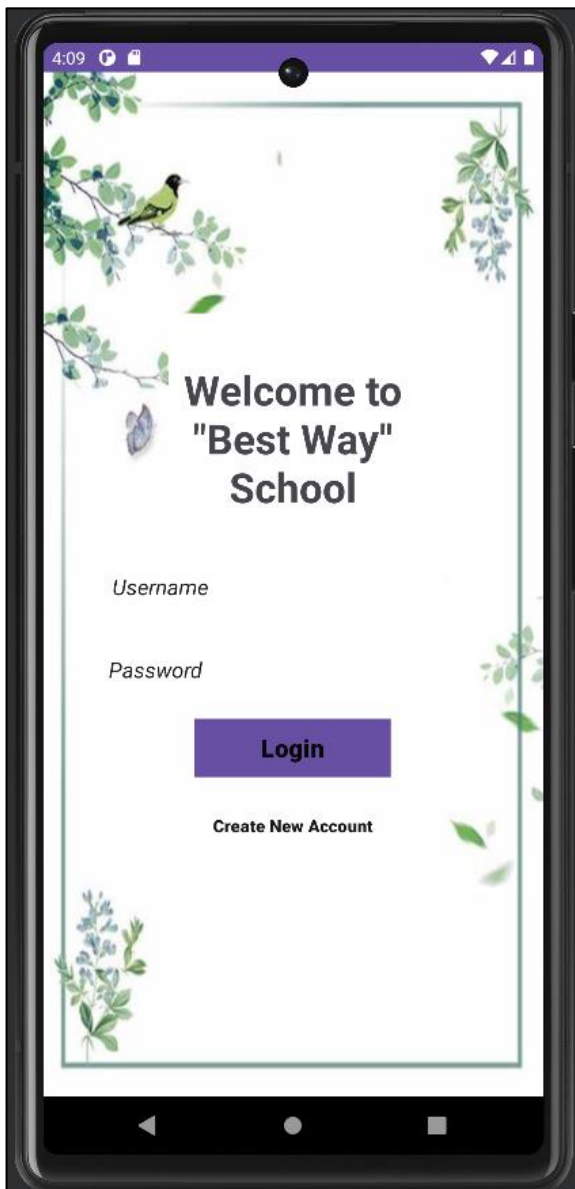


Figure 1: Logging Interface

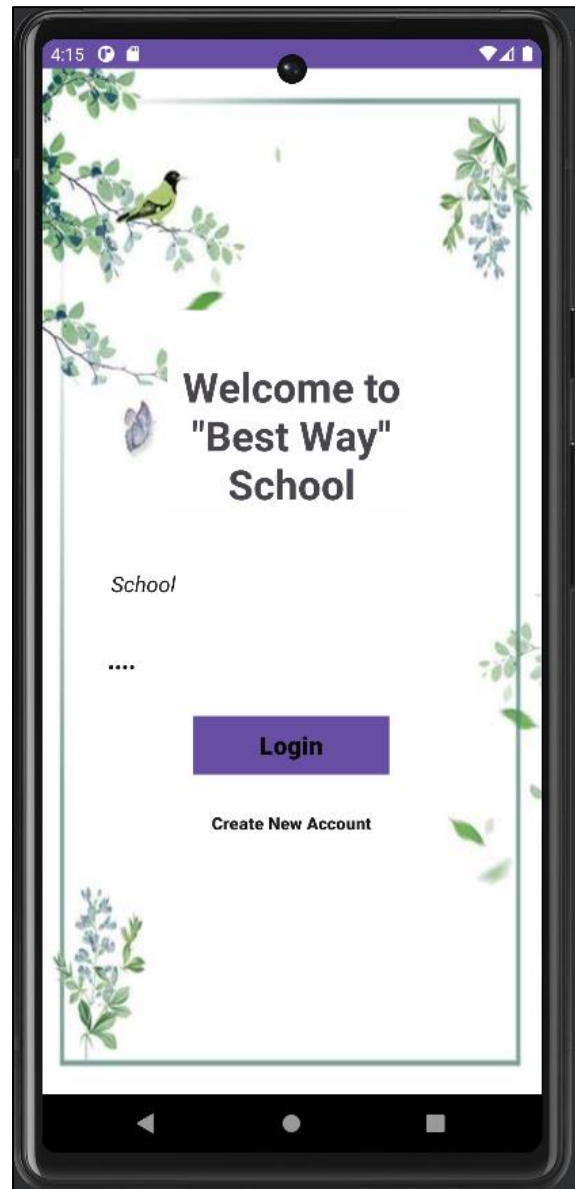


Figure 2: Logging Interface with Credentials

This is the logging page of the application which is for an Educational Institute called “Best Way”. There are two buttons. One button is for Logging. Another button is for creating a new account if it is not having an account. The user can be either a teacher or a student in the “Best Way” institute. They can use the username and password which were given by the institute for the members. As an example, username is “School” and the password is “1234”. Those credentials were used for logging to the system. This username and password are checked by the system. [1]

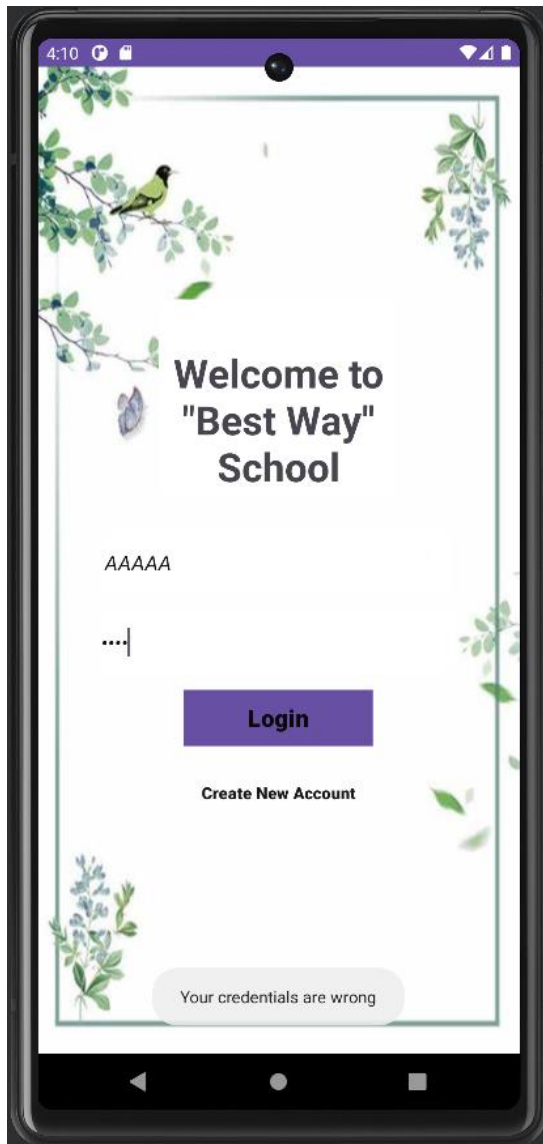


Figure 3: Credentials with Wrong Details

When enter a wrong username or password, a message is displayed as “Your Credentials are wrong”. The related code is below. It checks the correctness of the username and password. If it is wrong, the message will be displayed as figure 3. [2]

```
// Set click listener for login button
btnLogin.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String username = etUsername.getText().toString();
        String password = etPassword.getText().toString();

        if (username.equals("School") && password.equals("1234")) {
            // Credentials are correct, navigate to OptionsActivity
            Intent intent = new Intent( packageContext MainActivity.this, Selection.class);
            startActivity(intent);
        } else {
            // Credentials are incorrect
            Toast.makeText( context MainActivity.this, text: "Your credentials are wrong", Toast.LENGTH_SHORT).show();
        }
    }
}
```

Figure 4:Checking username & password

2. Category Selection.



When log into the system, this interface will be appeared. Teachers in the institute can select the “Teachers” option. Students can select “Students” option. [3]

Figure 5: Category Selection

3. Selection of Teachers.

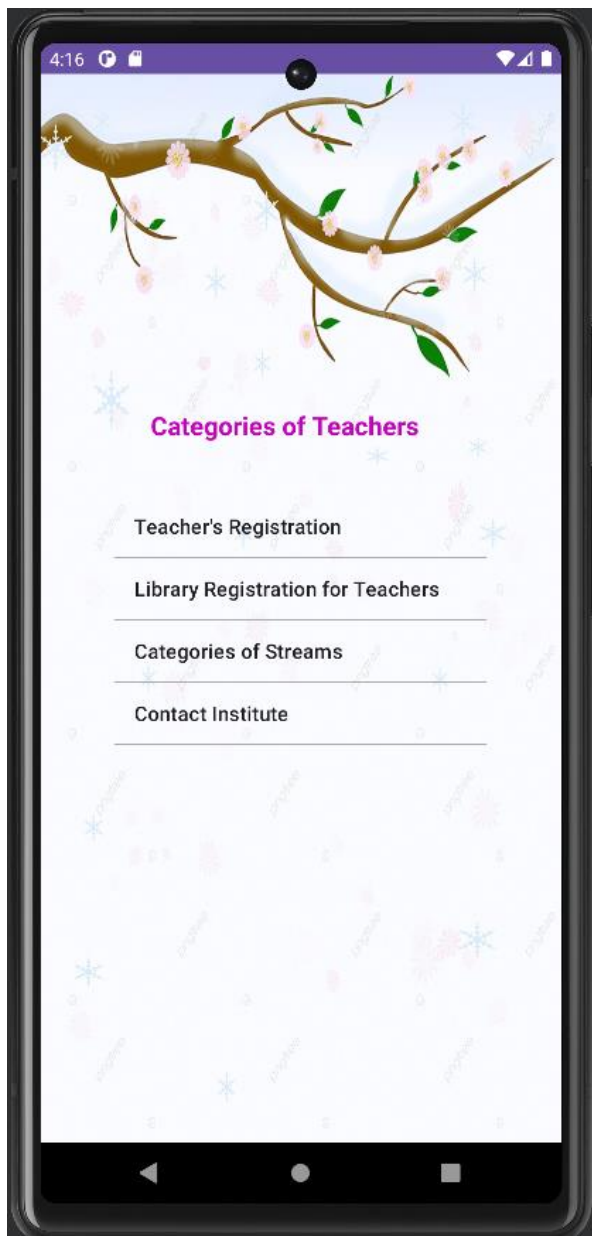


Figure 6: Teacher's Category

In the Teachers Category, there are four buttons for Teacher's Registration, Library Registration for Teachers, Categories of Streams and Contact Information. Literally, these are the main options which are related to the teachers in the institute. In Teacher's Registration and Library Registration buttons have entry forms for significant bio data of teachers. Categories of Streams display the main subjects of the syllabus. Contact Institute button displays contact information about some of main characters of the institute.

i. Teacher's Registration.

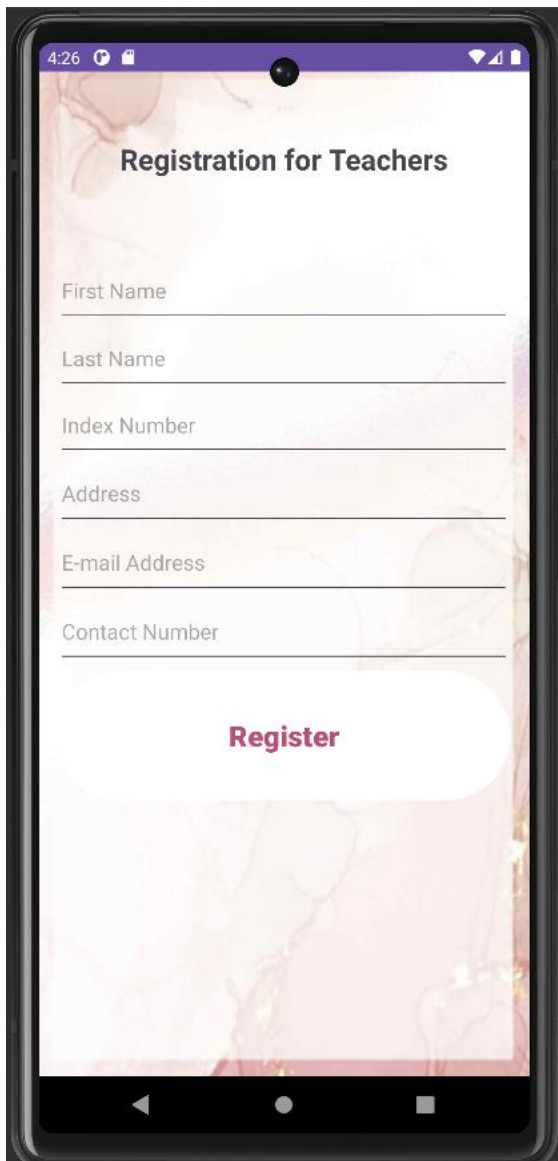


Figure 7 shows a mobile application screen titled "Registration for Teachers". The screen displays a registration form with the following fields: First Name, Last Name, Index Number, Address, E-mail Address, and Contact Number. Each field is represented by a horizontal line with a label to its left. Below the form is a large, rounded rectangular button labeled "Register". The background of the app has a light pink and white floral pattern. The status bar at the top shows the time as 4:26 and various icons.

Figure 7: Teacher's Registration Form

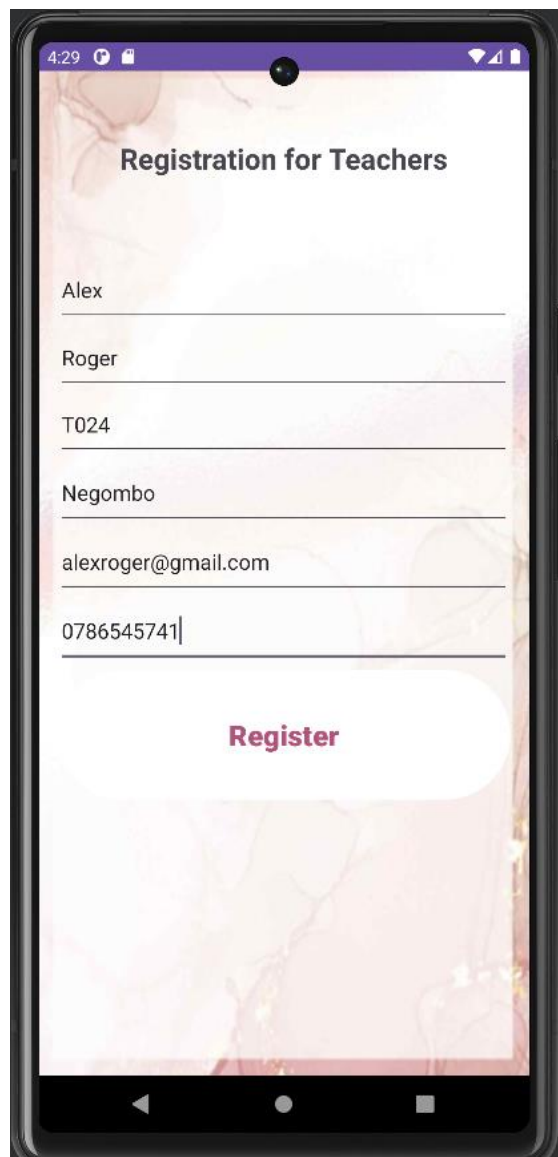


Figure 8 shows the same "Registration for Teachers" form, but now it is filled with data. The fields contain the following information: First Name: Alex, Last Name: Roger, Index Number: T024, Address: Negombo, E-mail Address: alexroger@gmail.com, and Contact Number: 0786545741. The "Register" button remains at the bottom. The background and status bar are consistent with Figure 7.

Figure 8: Filling the form for teachers

This form is for Teacher's Registrations. First Name, Last Name, Index Number, Address, E-mail Address and Contact Number are the fields of the registration form. Index number was given by the Institute to the members. The field of email address has been validated. Incomplete email address cannot be inserted. Contact number field is validated for accepting only 10 digits. All fields should be filled for the Registration.

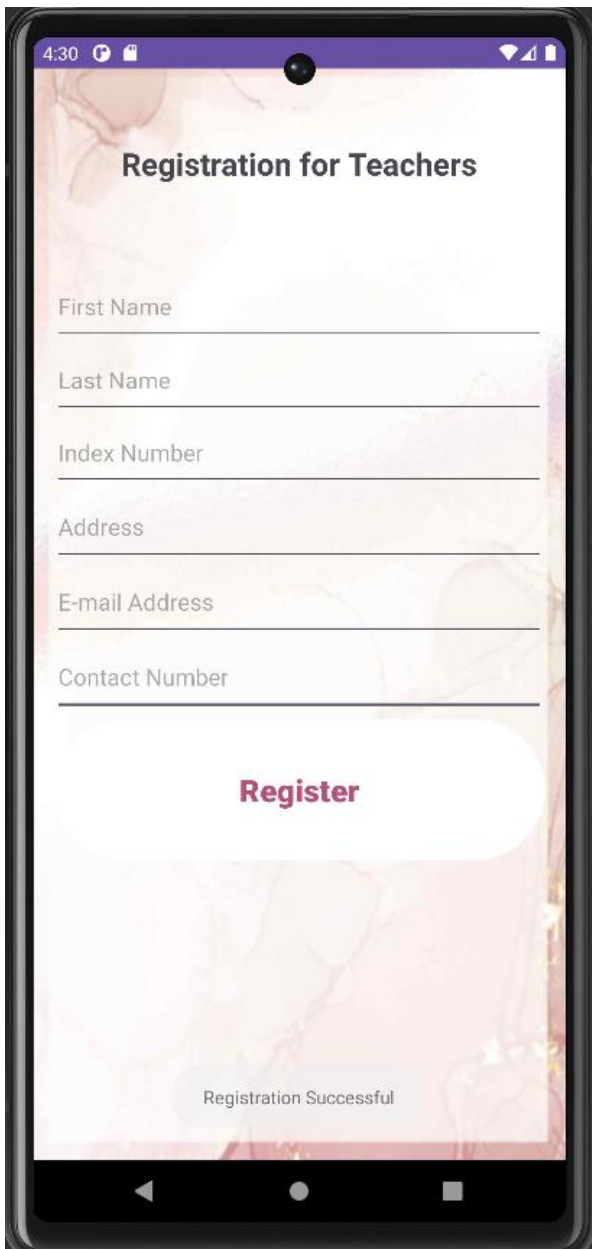
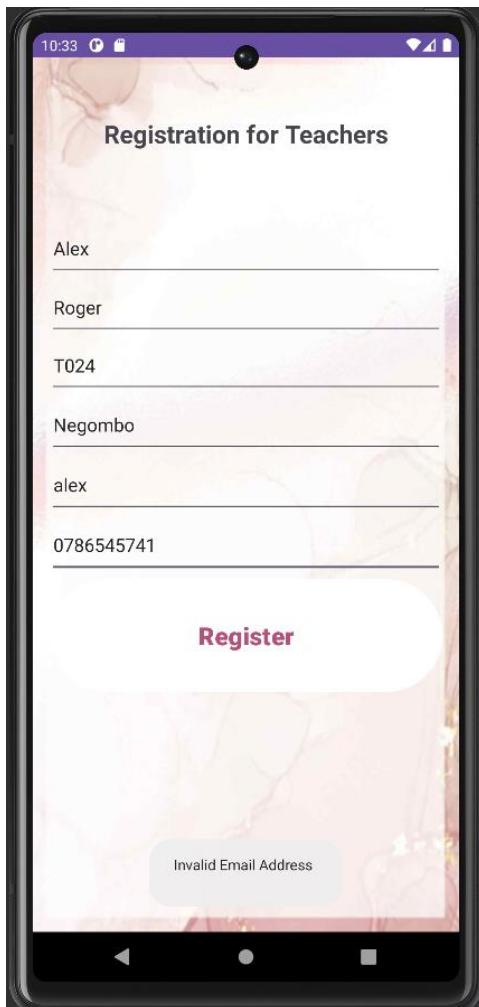


Figure 9: Successful Registration

After filled the all fields correctly, the registration will be done by displaying a message as “Registration Successful”. Then clear the all fields that are filled by the user.

Validations of the form.



Registration for Teachers

Alex

Roger

T024

Negombo

alex

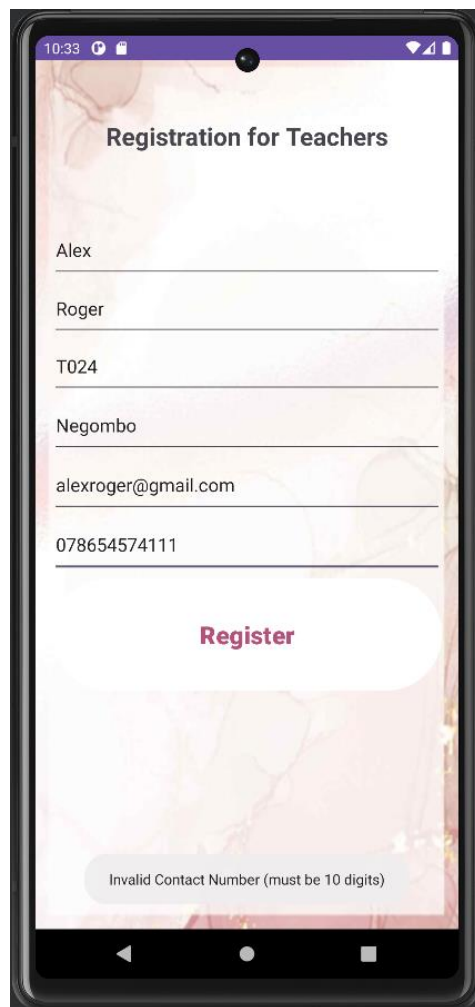
0786545741

Register

Invalid Email Address

This screenshot shows the registration form with the email field containing 'alex'. A red error message 'Invalid Email Address' is displayed at the bottom.

Figure 11: Email Validation



Registration for Teachers

Alex

Roger

T024

Negombo

alexroger@gmail.com

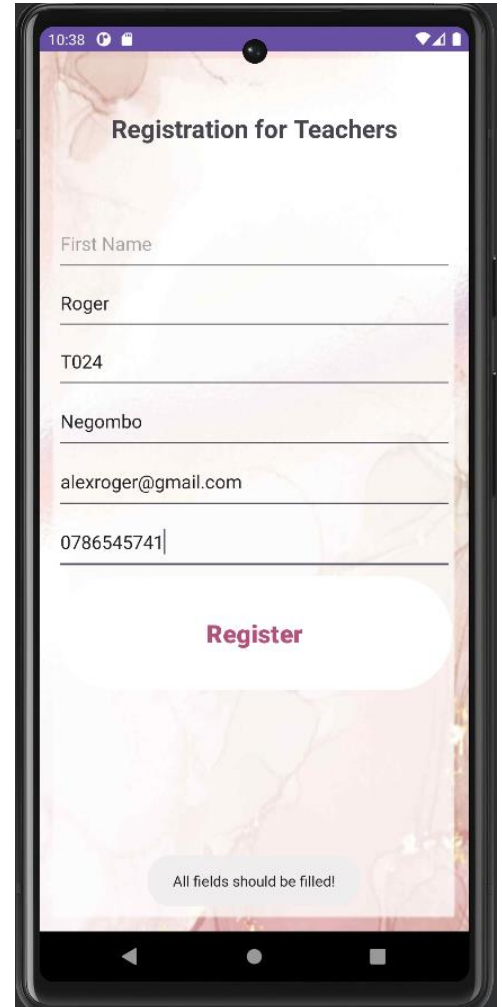
078654574111

Register

Invalid Contact Number (must be 10 digits)

This screenshot shows the registration form with the contact number field containing '078654574111'. A red error message 'Invalid Contact Number (must be 10 digits)' is displayed at the bottom.

Figure 10: Contact Number Validation



Registration for Teachers

First Name

Roger

T024

Negombo

alexroger@gmail.com

0786545741|

Register

All fields should be filled!

This screenshot shows the registration form with the first name field empty. A red error message 'All fields should be filled!' is displayed at the bottom.

Figure 12: Empty Field Validation

Those are the all validations of the registration form. Figure 10 represents the email address validation. Email address should be ended with the “@gmail.com” form. Figure 11 represents the contact number validation. If the number of digits should be 10. Less than or more than digits are not acceptable. Figure 12 represents the empty field validation. It helps to process the registration by getting all details of the user without any mistake.

ii. Library Registration for Teachers.

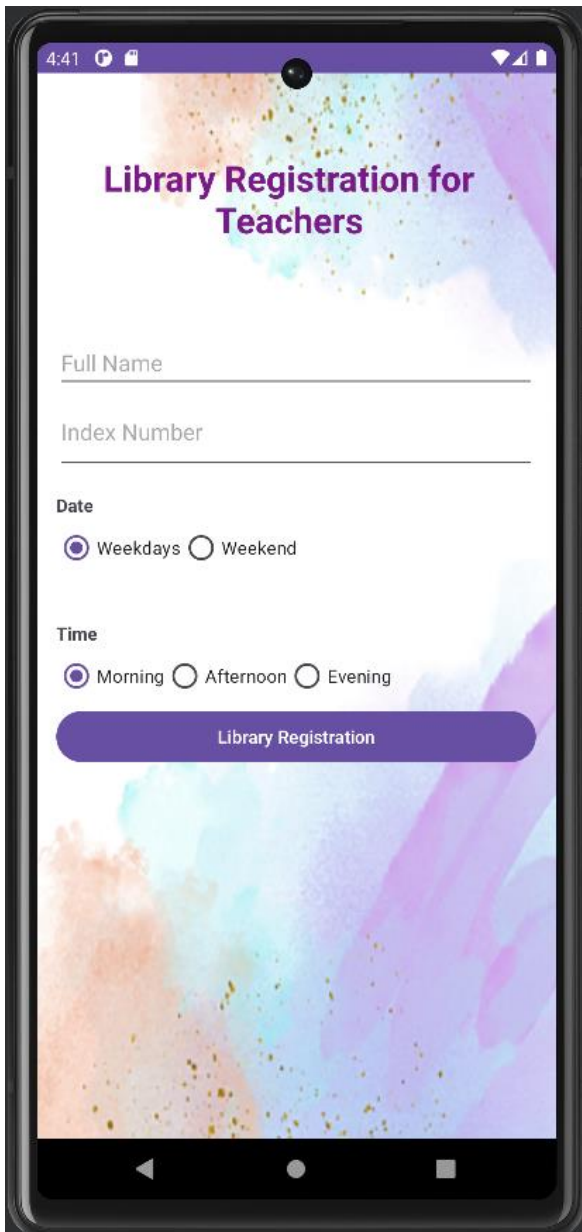


Figure 14 shows the initial 'Library Registration for Teachers' form. The title is 'Library Registration for Teachers'. Below the title are three input fields: 'Full Name', 'Index Number', and 'Date'. The 'Date' section has two radio buttons: 'Weekdays' (selected) and 'Weekend'. Below the 'Date' section is a 'Time' section with three radio buttons: 'Morning' (selected), 'Afternoon', and 'Evening'. At the bottom is a purple button labeled 'Library Registration'.

Figure 14: Library Registration for Teachers

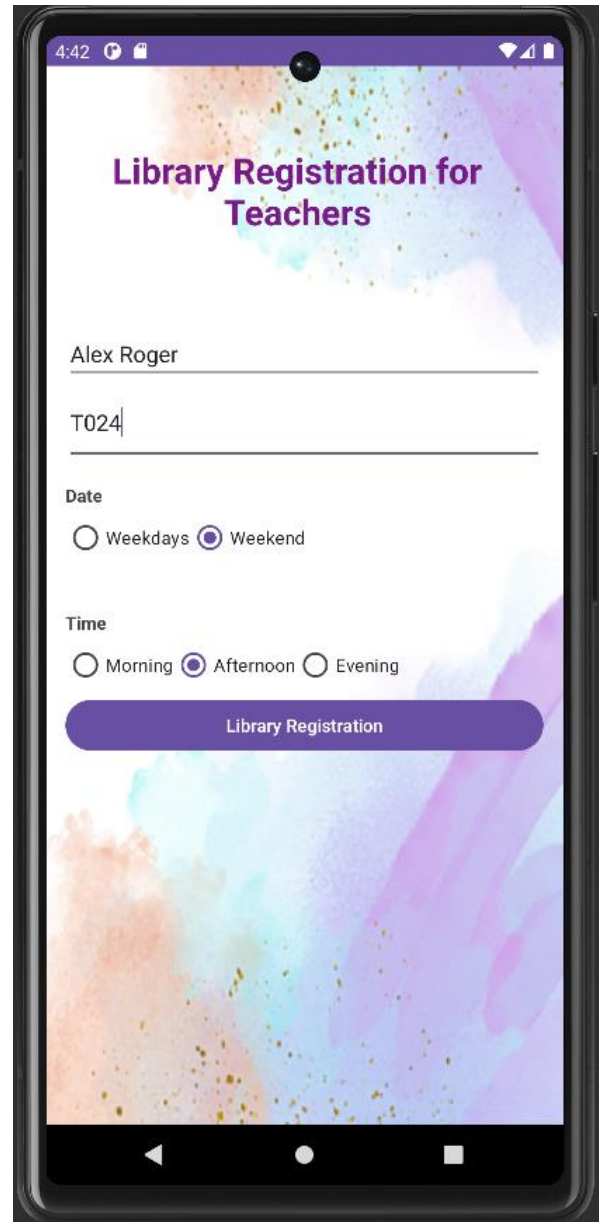


Figure 13 shows the 'Library Registration Details' form. The title is 'Library Registration for Teachers'. Below the title are three input fields: 'Full Name' (filled with 'Alex Roger'), 'Index Number' (filled with 'T024'), and 'Date'. The 'Date' section has two radio buttons: 'Weekdays' and 'Weekend' (selected). Below the 'Date' section is a 'Time' section with three radio buttons: 'Morning', 'Afternoon' (selected), and 'Evening'. At the bottom is a purple button labeled 'Library Registration'.

Figure 13: Library Registration Details

This is the Library Registration Form for Teachers. It includes Full Name, Index Number of the teacher. And it has default selections for the Date and the Time. If the teacher needs any changes for date and time, other options can be selected. It is required for completing all fields to the registration.

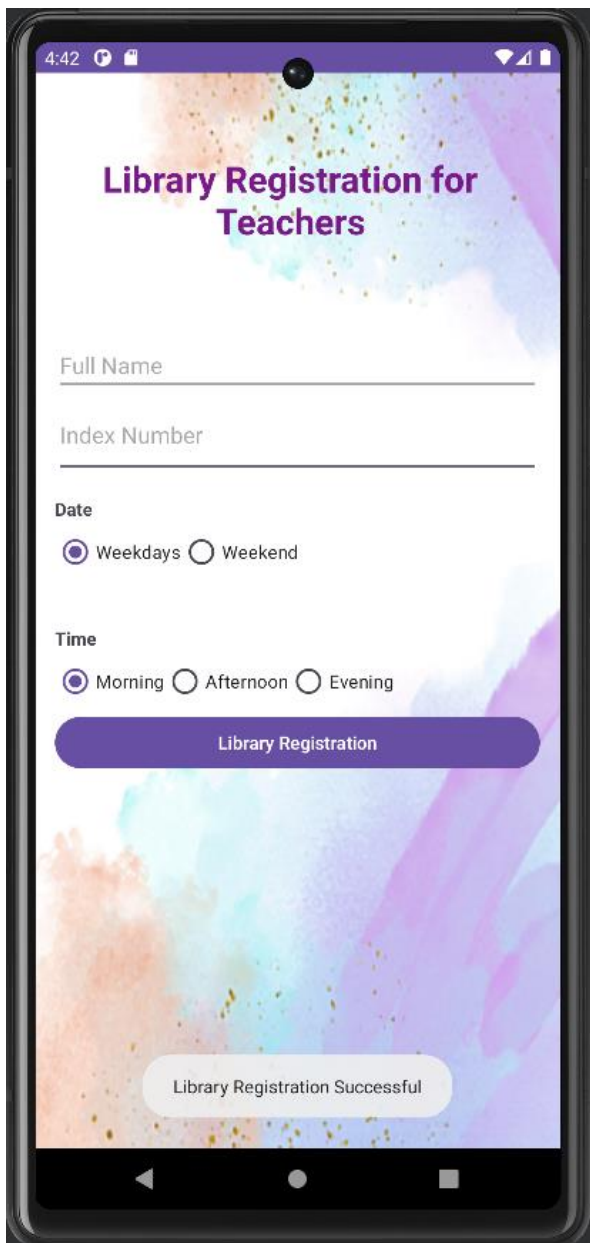


Figure 15: Successful Registration

After filled the all fields correctly, the Library Registration will be done by displaying a message as “Library Registration Successful”. Then clear the all fields that are filled by the user without the default selections.

iii. Categories of Streams.



Figure 16: Categories of Streams



Figure 17: Clicking Categories

This Categories of Streams is a showcase of the main subjects. It has mainly 6 categories. Those are Mathematics, Science, Art, Commerce, Technology and History. If the teacher needs to get to know about further details of the subjects, each category can be selected. As an example, figure 17 shows the selection of Mathematics category. When click on the subject, a message is displayed as “Mathematics category is clicked”.

iv. Contact Institute.

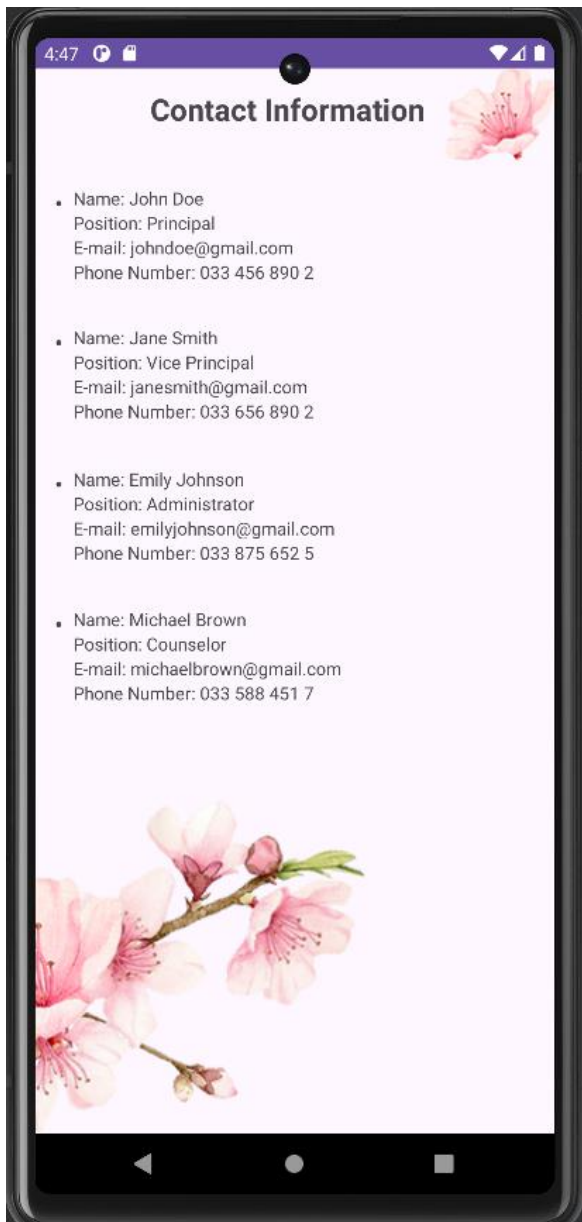


Figure 18: Contact Information

When a teacher selects “Contact Institute” button, it shows the contact information of the Best Way Institute. Main information including the Email address and Contact number of Principal, Vice Principal, Administrator, Counselor are provided in the contact information page.

4. Selection of Students.

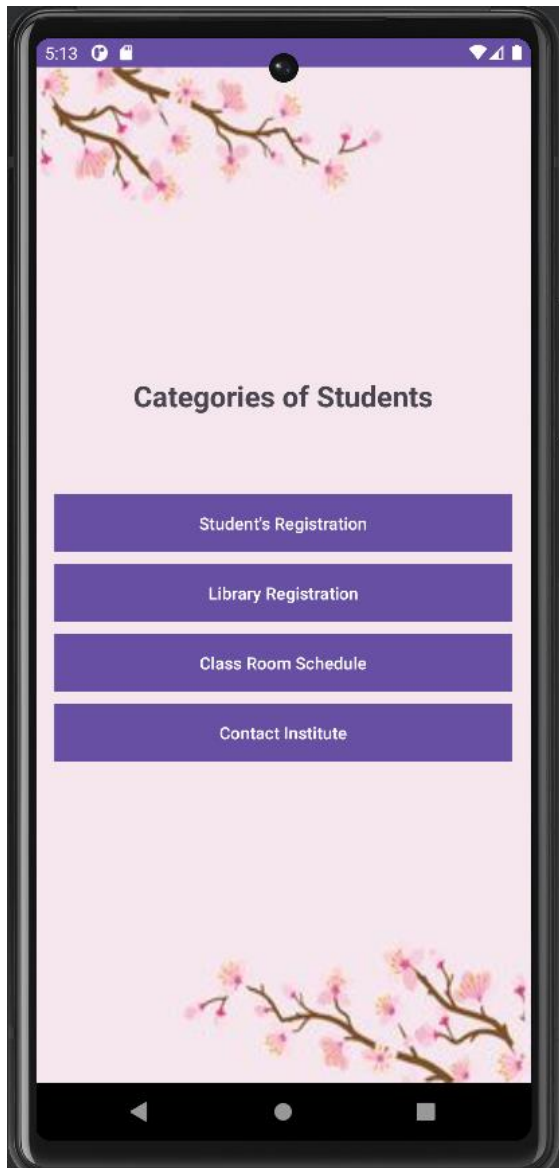


Figure 19: Student's Category

In the Students Category, there are four buttons for Student's Registration, Library Registration for Students, Class Room Schedule and Contact Information. These are the main options which are related to the students in the institute. In Student's Registration and Library Registration buttons have entry forms for significant bio data of students. Class Room Schedule displays the categorization of the class rooms for all grades. Contact Institute button displays contact information about some of main characters of the institute.

i. Student's Registration.

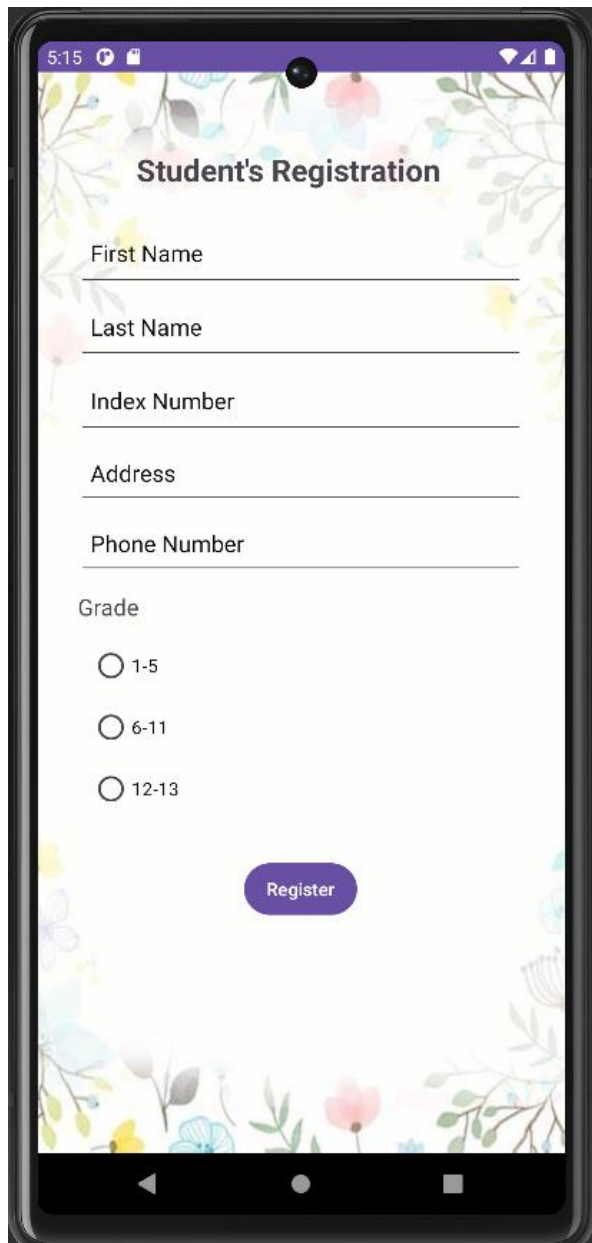


Figure 20 shows the initial 'Student's Registration' form. The form is titled 'Student's Registration' and features a decorative floral border. It contains the following fields: 'First Name', 'Last Name', 'Index Number', 'Address', 'Phone Number', and 'Grade'. The 'Grade' section uses radio buttons for selection, with options '1-5', '6-11', and '12-13'. A purple 'Register' button is located at the bottom of the form.

Figure 20: Student's Registration form

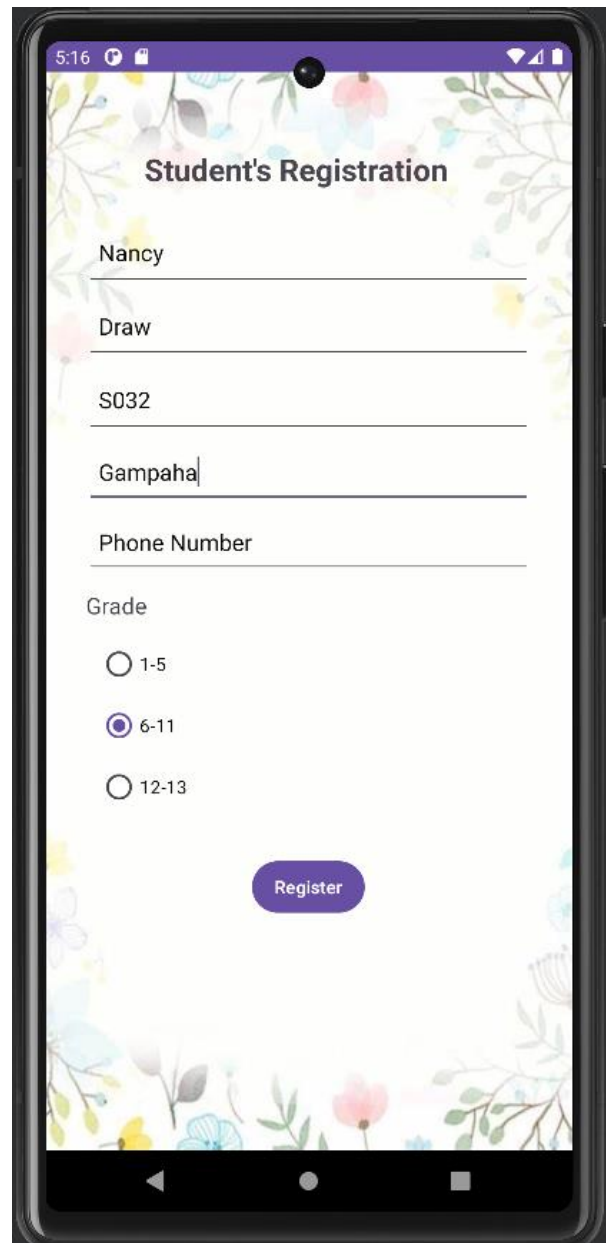


Figure 21 shows the form being filled out. The 'First Name' field contains 'Nancy', 'Last Name' contains 'Draw', 'Index Number' contains 'S032', and 'Address' contains 'Gampaha'. The 'Phone Number' field is empty. The 'Grade' section has the '6-11' radio button selected. The purple 'Register' button remains at the bottom.

Figure 21: Filling Registration Form

This form is for Student's Registrations. First Name, Last Name, Index Number, Address and Contact Number are the fields of the registration form. Index number was given by the Institute to the members. Grade selection is used radio buttons. Contact number field is validated for accepting only 10 digits. All fields should be filled for the Registration.

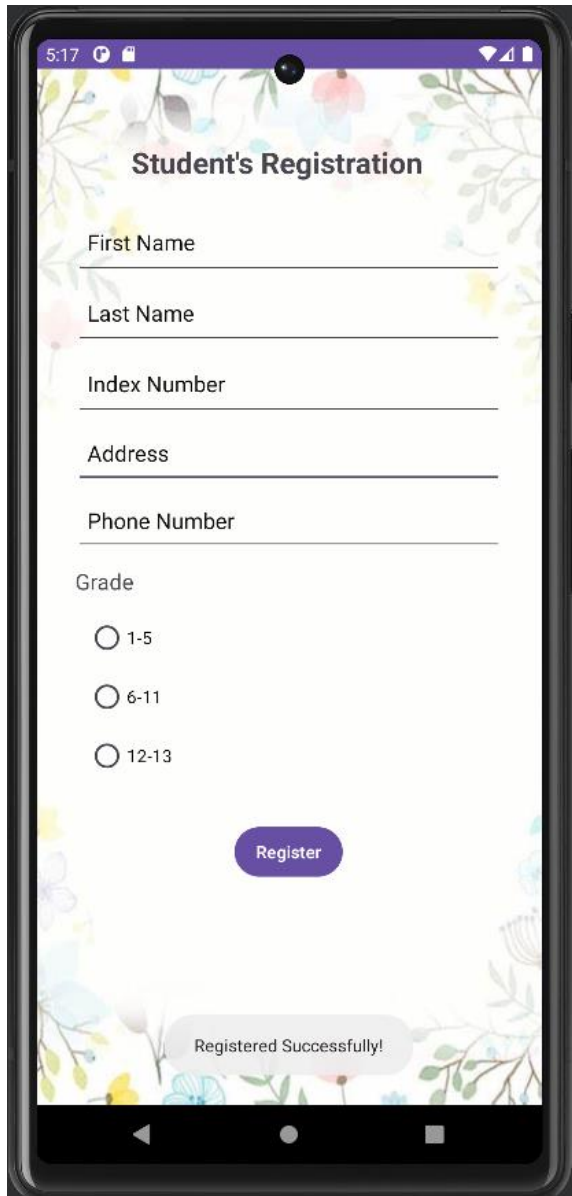


Figure 22: Successful Registration

After filled the all fields correctly, the registration will be done by displaying a message as “Registration Successful”. Then clear the all fields that are filled by the user.

ii. Library Registration.

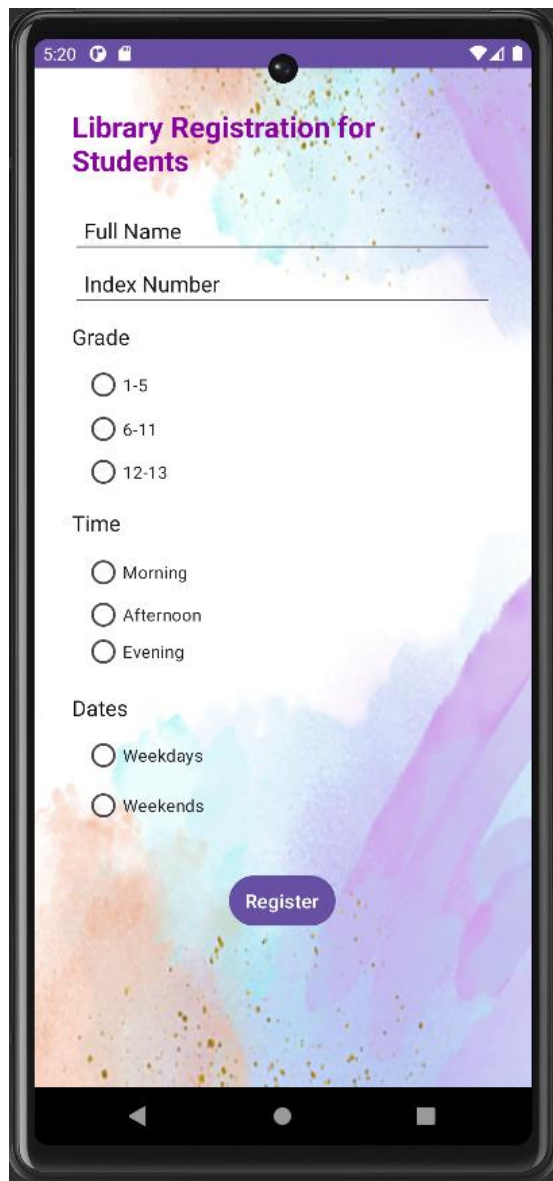


Figure 23 shows the initial 'Library Registration for Students' form. The title is in purple. Below it are two input fields: 'Full Name' and 'Index Number'. There are three radio button options for 'Grade': '1-5', '6-11', and '12-13'. There are three radio button options for 'Time': 'Morning', 'Afternoon', and 'Evening'. There are two radio button options for 'Dates': 'Weekdays' and 'Weekends'. A purple 'Register' button is at the bottom.

Figure 23: Library Registration form

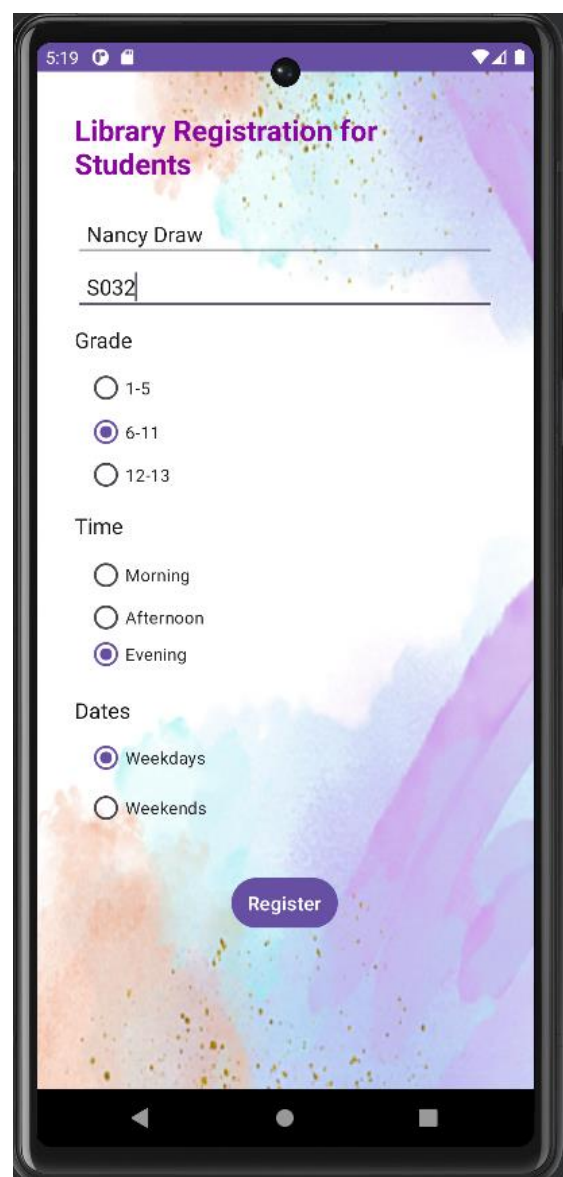


Figure 24 shows the form being filled out. The 'Full Name' field contains 'Nancy Draw' and the 'Index Number' field contains 'S032'. The 'Grade' section has the '6-11' radio button selected. The 'Time' section has the 'Evening' radio button selected. The 'Dates' section has the 'Weekdays' radio button selected. The 'Register' button remains at the bottom.

Figure 24: Filling Registration Form

This is the Library Registration Form for Students. It includes Full Name, Index Number of the student. And it has radio selections for the Date and the Time. Students can choose any comfortable time period and dates for visiting to library. The form is required for completing all the fields to the registration.

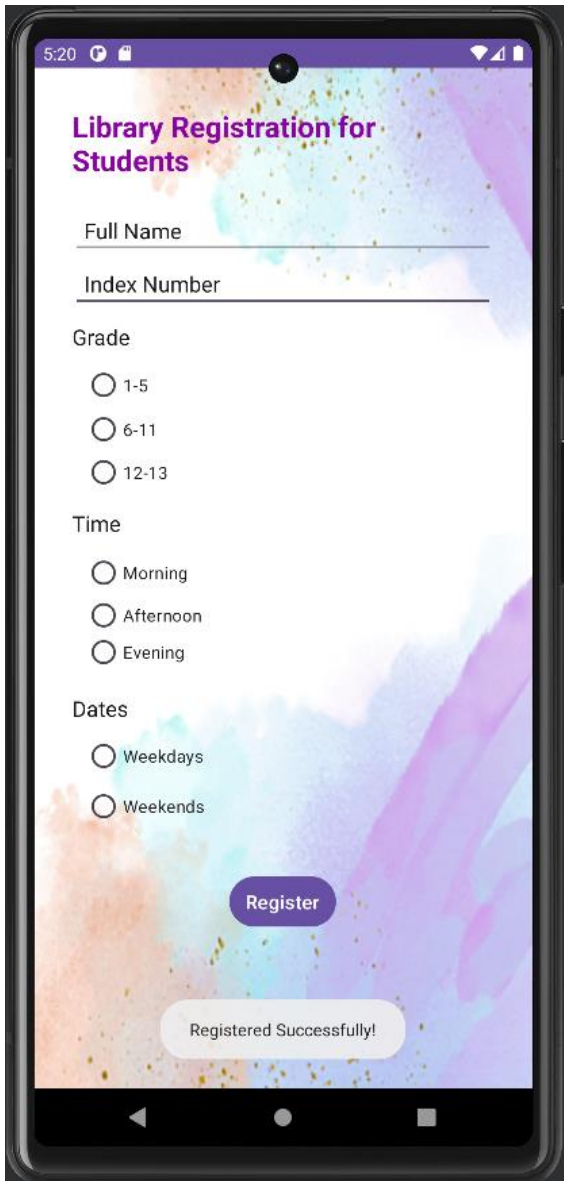
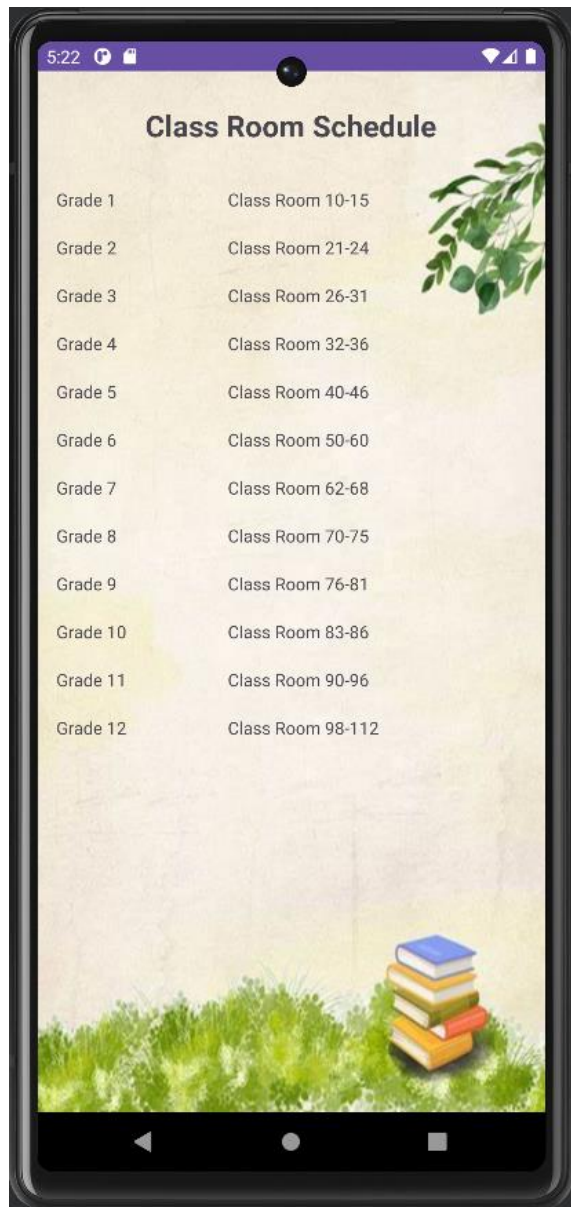


Figure 25: Successful Registration

After filled the all fields correctly, the Library Registration will be done by displaying a message as “Library Registration Successful”. Then clear the all fields that are filled by the student.

iii. Class Room Schedule.



Class Room Schedule	
Grade 1	Class Room 10-15
Grade 2	Class Room 21-24
Grade 3	Class Room 26-31
Grade 4	Class Room 32-36
Grade 5	Class Room 40-46
Grade 6	Class Room 50-60
Grade 7	Class Room 62-68
Grade 8	Class Room 70-75
Grade 9	Class Room 76-81
Grade 10	Class Room 83-86
Grade 11	Class Room 90-96
Grade 12	Class Room 98-112

This Class Room Schedule is related to all classes that is Grade 1 to Grade 12. It has clearly mentioned about the class room numbers for the grades. This helps to students to find their class rooms without any fault.

Figure 26: Class Room Schedule

iv. Contact Institute.

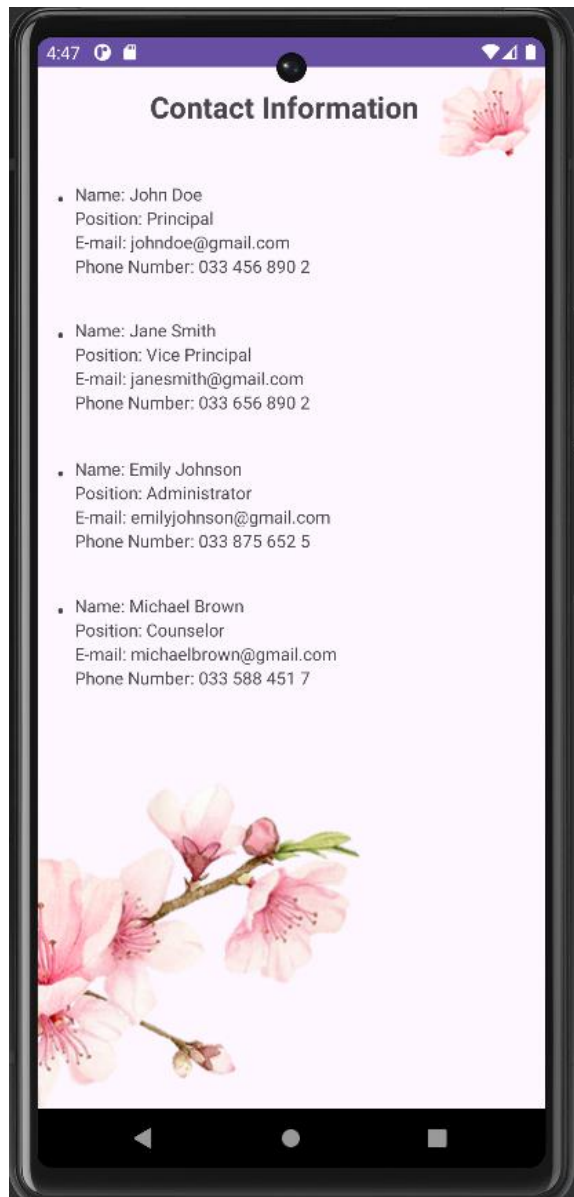


Figure 27: Contact Institute

When a student selects “Contact Institute” button, it shows the contact information of the Best Way Institute. Main information including the Email address and Contact number of Principal, Vice Principal, Administrator, Counselor are provided in the contact information page.

5. Databases.

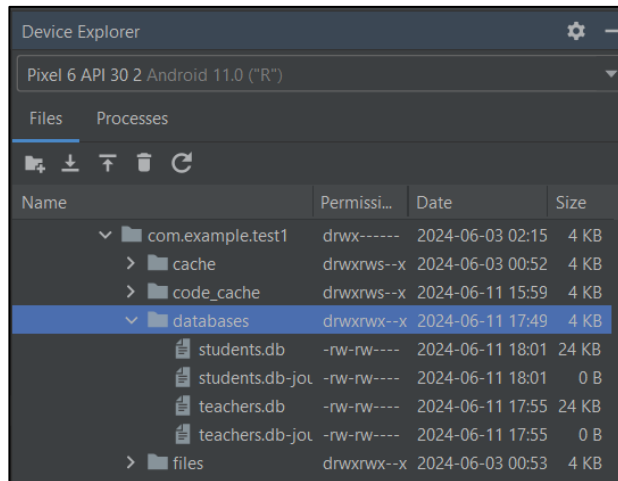


Figure 28: Databases in Device Explorer

In this system, there are two active users as Teachers and Students. SQLite databases are used to store information of users. Information of both users are input into separate databases called “Teachers” and “Students”. Two tables are having for each database. One table is used for storing information about registrations. And another table is used to store information about Library registrations. The figure 28 shows the all-databases files of the project.

i. Teachers’ Database.

DB Browser for SQLite is the application that is used to explore information about all tables. Below figure 29 represents the database about teachers called “teachers.db”. It includes two tables as teachers_library_registration and teachers_registration.

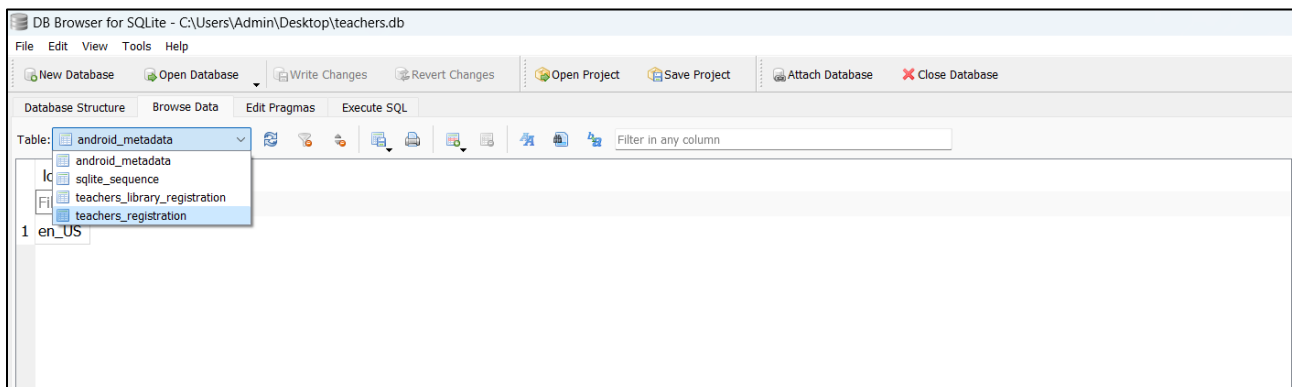
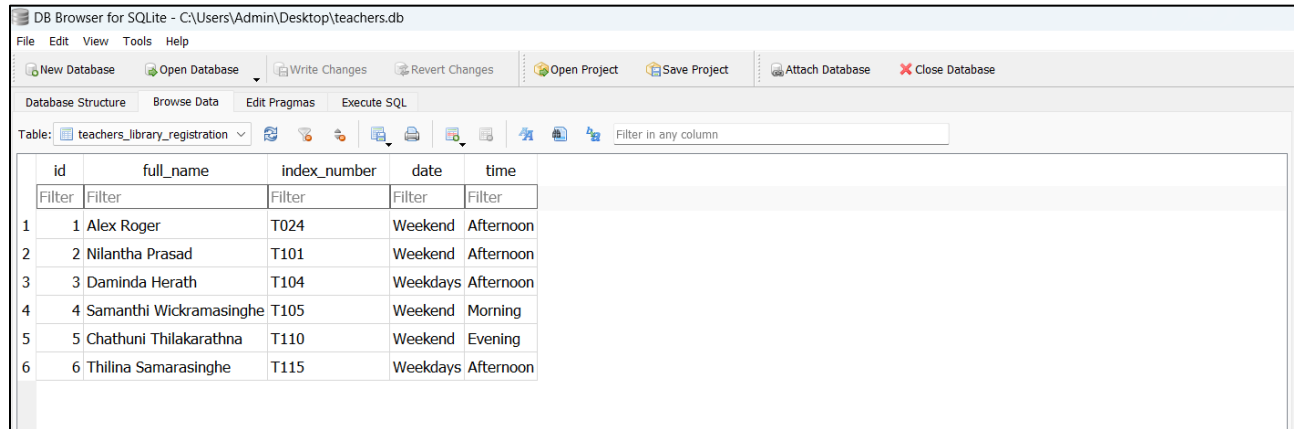


Figure 29: Two Tables in Teachers DB

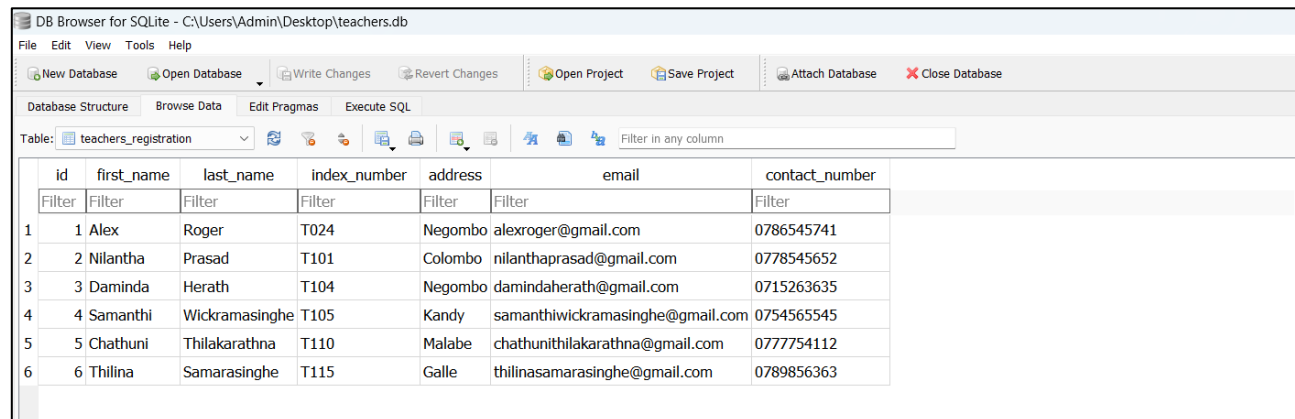
Figure 30 represents the Teachers Library registration table with values. According to the Library Registration form, this table has created 4 columns for Full name, Index number, date and Time.



	id	full_name	index_number	date	time
1	1	Alex Roger	T024	Weekend	Afternoon
2	2	Nilantha Prasad	T101	Weekend	Afternoon
3	3	Daminda Herath	T104	Weekdays	Afternoon
4	4	Samanthi Wickramasinghe	T105	Weekend	Morning
5	5	Chathuni Thilakarathna	T110	Weekend	Evening
6	6	Thilina Samarasinghe	T115	Weekdays	Afternoon

Figure 30: Teachers Library Registration Table

Below table shows all the details of Teacher's Registration. First Name, Last Name, Index number, Address, Email and Contact Number are the columns of the "teacher_registration" table.



	id	first_name	last_name	index_number	address	email	contact_number
1	1	Alex	Roger	T024	Negombo	alexroger@gmail.com	0786545741
2	2	Nilantha	Prasad	T101	Colombo	nilanthaprasad@gmail.com	0778545652
3	3	Daminda	Herath	T104	Negombo	damindaherath@gmail.com	0715263635
4	4	Samanthi	Wickramasinghe	T105	Kandy	samanthiwickramasinghe@gmail.com	0754565545
5	5	Chathuni	Thilakarathna	T110	Malabe	chathunithilakarathna@gmail.com	0777754112
6	6	Thilina	Samarasinghe	T115	Galle	thilinasamarasinghe@gmail.com	0789856363

Figure 31: Teachers Registrations Table

i. Students' Database.

Below figure 32 represents the database about students called “students.db”. It includes two tables as students_library_registration and students_registration.

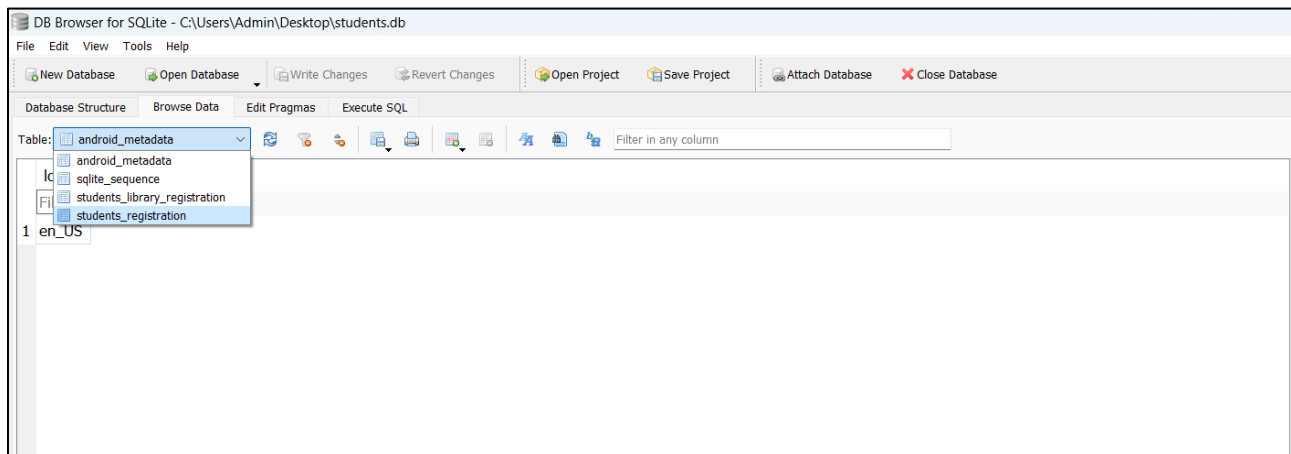
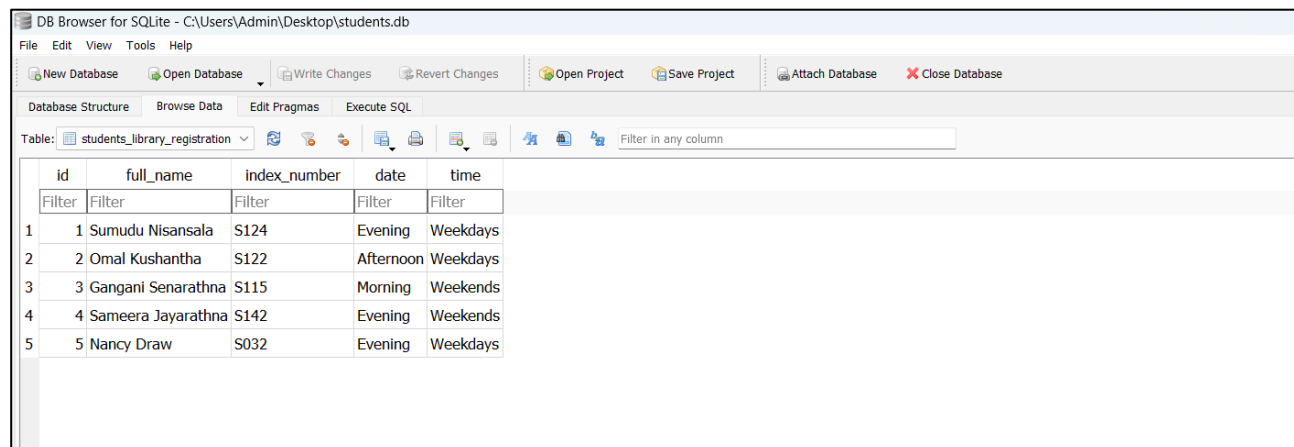


Figure 32: Two Tables in Students DB

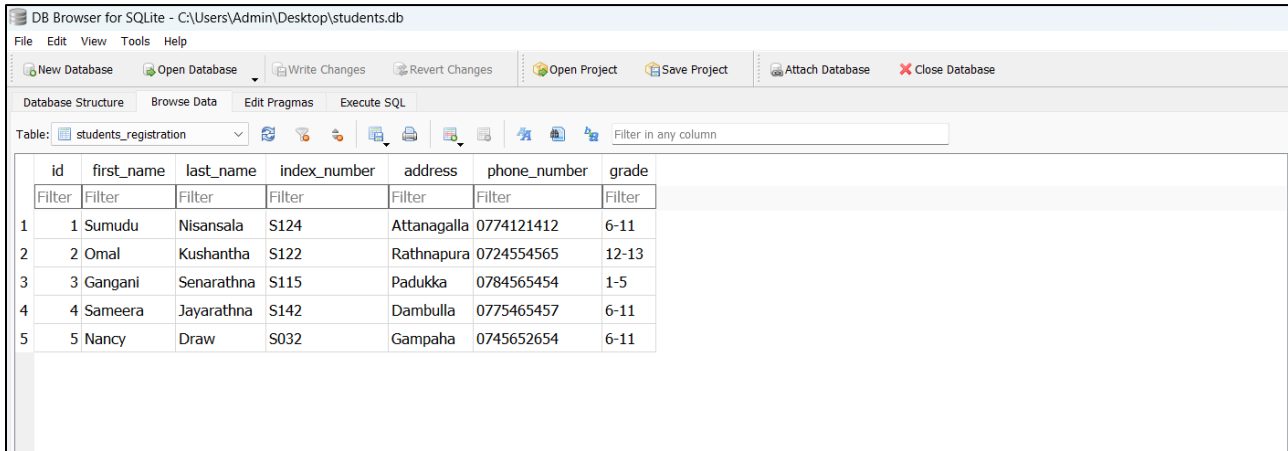
Figure 33 represents the Students Library registration table with values. According to the Library Registration form, this table has created 4 columns for Full name, Index number, date and Time.



	id	full_name	index_number	date	time
	Filter	Filter	Filter	Filter	Filter
1	1	Sumudu Nisansala	S124	Evening	Weekdays
2	2	Omal Kushantha	S122	Afternoon	Weekdays
3	3	Gangani Senarathna	S115	Morning	Weekends
4	4	Sameera Jayarathna	S142	Evening	Weekends
5	5	Nancy Draw	S032	Evening	Weekdays

Figure 33: Students Library Registration Table

Below table shows all the details of Student's Registration. First Name, Last Name, Index number, Address, Contact Number, Grade are the columns of the "students_registration" table.



The screenshot shows the DB Browser for SQLite interface. The table 'students_registration' is selected, and its data is displayed in a table view. The table has 7 columns: id, first_name, last_name, index_number, address, phone_number, and grade. There are 5 rows of data.

	id	first_name	last_name	index_number	address	phone_number	grade
1	1	Sumudu	Nisansala	S124	Attanagalla	0774121412	6-11
2	2	Omal	Kushantha	S122	Rathnapura	0724554565	12-13
3	3	Gangani	Senarathna	S115	Padukka	0784565454	1-5
4	4	Sameera	Jayarathna	S142	Dambulla	0775465457	6-11
5	5	Nancy	Draw	S032	Gampaha	0745652654	6-11

Figure 34: Students Registration Table

Bibliography

[1] "Android Studio Basics," W3 School, [Online]. Available: https://w3schoolsua.github.io/hyperskill/android-studio-basics_en.html#gsc.tab=0.

[2] "Android Studio Tutorials," JavatPoint, [Online]. Available: <https://www.javatpoint.com/android-tutorial>.

[3] [www.YouTube.com](https://www.youtube.com), "Android Studio Tutorials".