CENGOnline

DEUCENG
Dokuz Eylül University
Dept of Computer Engineering

CME3202 - CONCEPTS OF PROGRAMMING LANGUAGES

By

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Outline

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Introduction

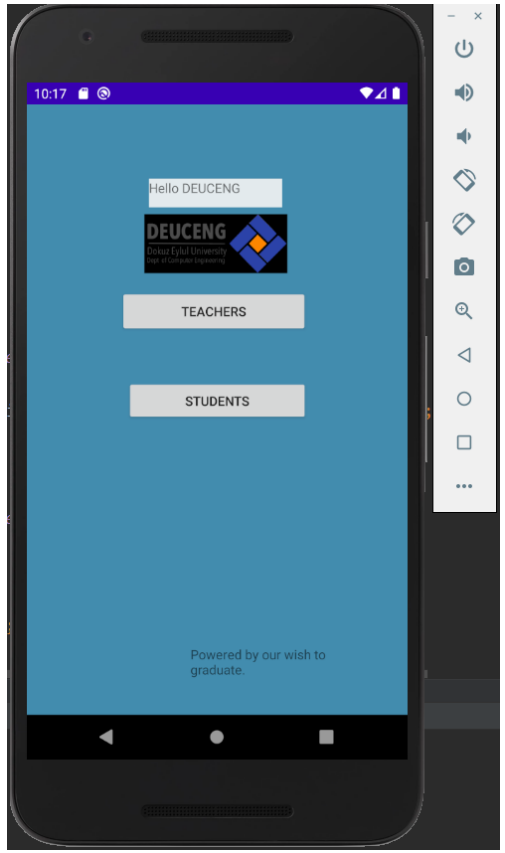
- The aim of this project is to design a Course Management System using Java Programming Language, the IDE and UI of our choice. The IDE we used is Android Studio, and the UI is mobile.
- The system is supposed to provide some functionalities: Login, Courses, Assignments, Announcements, Messaging and Stream.
- We are required to implement specified programming concepts in our project.

Project Requirements

Requirements can be summarized into two groups

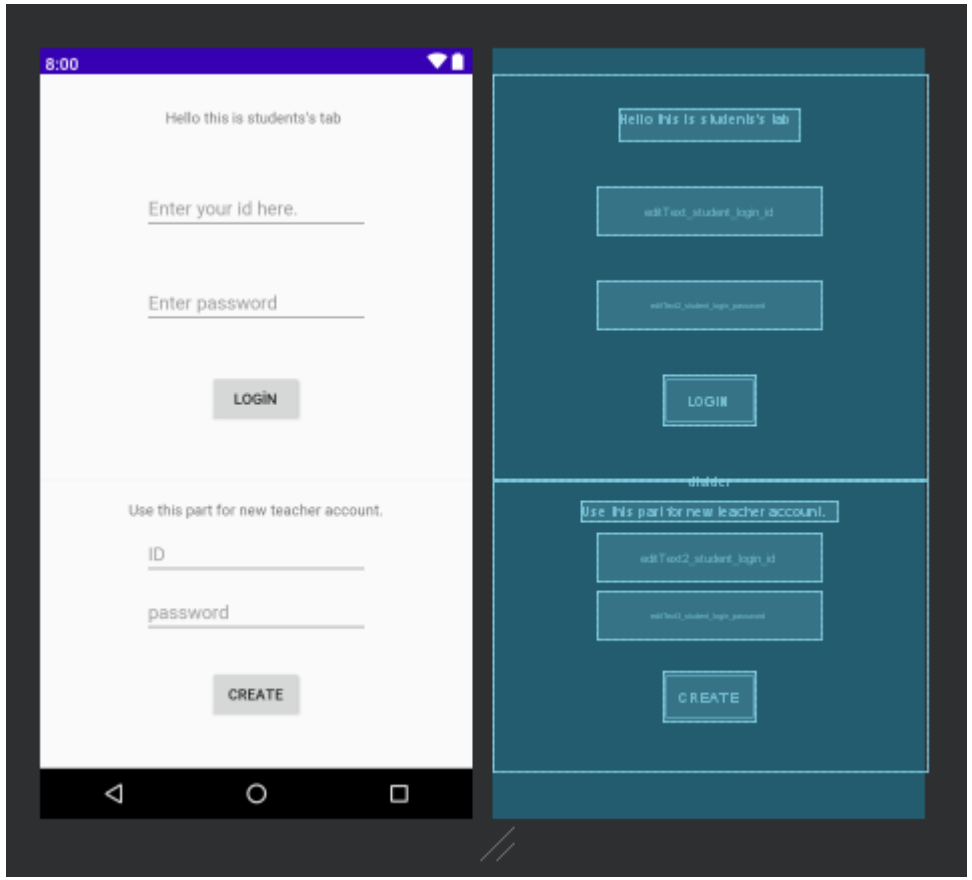
- Functionalities:
  - Login
  - Courses
  - Announcements
  - Messaging
  - Stream
- Requirements:
  - Java programming language
  - Object oriented programming
  - Implementing in the code: inheritance, abstract data type, foreach loop, named constants, associative arrays, method overloading.

Project Requirements




```java
public class MainActivity extends AppCompatActivity {

    private Button button_teachers, button_students;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        button_teachers = (Button)findViewById(R.id.button);
        button_teachers.setOnClickListener((v) -> {
                Intent teacher_login_intent = new Intent( packageContext: MainActivity.this, Teacher_view.class);
                startActivity(teacher_login_intent);

        });

        button_students = (Button)findViewById(R.id.button_studentView);
        button_students.setOnClickListener((v) -> {
                Intent student_login_intent = new Intent( packageContext: MainActivity.this, Student_view.class);
                startActivity(student_login_intent);
        });

    }
```

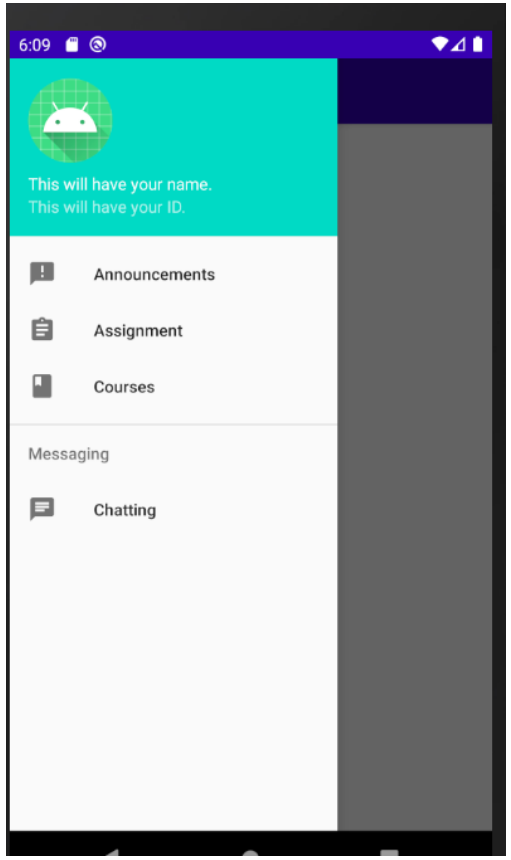
Project Requirements

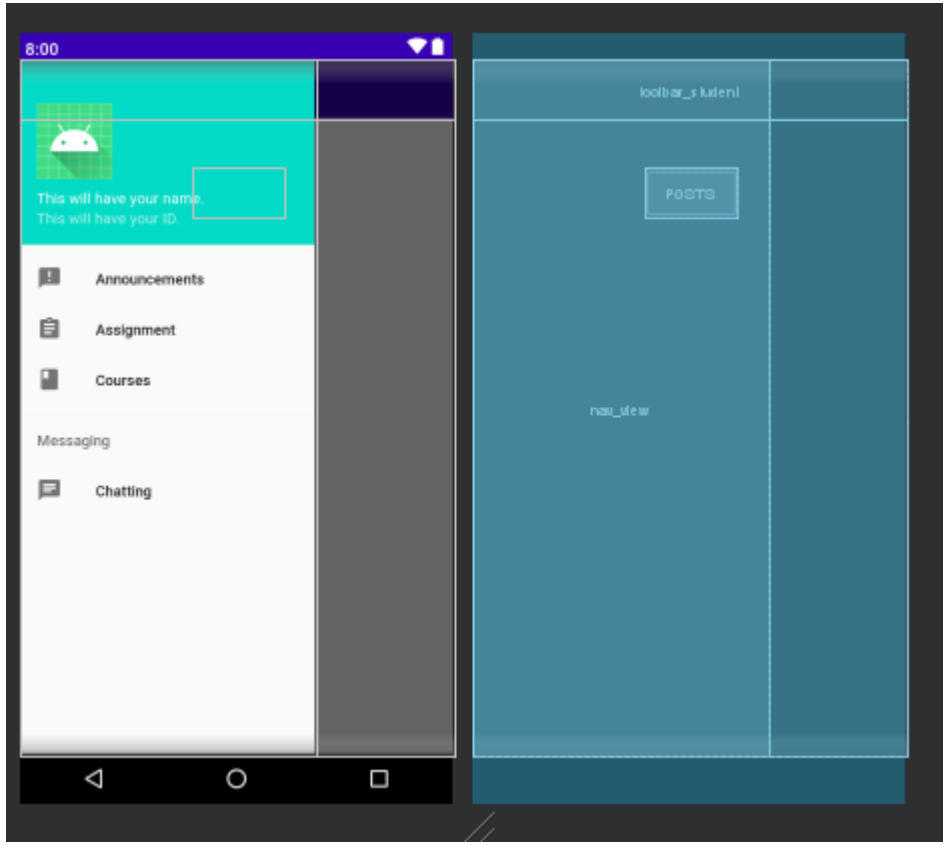



```
student_login_button.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        validateStudent(student_login_id.getText().toString(),
                student_login_password.getText().toString(),
                student_login_map);
    }
});
```

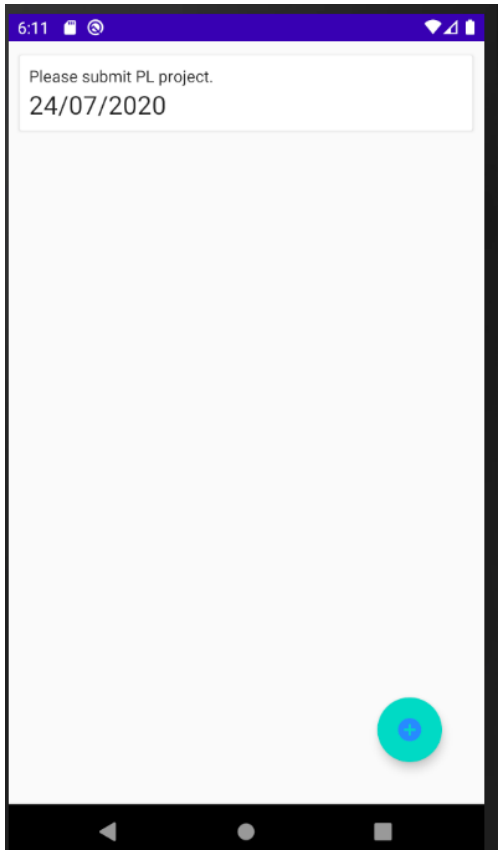
```
student_create_button.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        createStudentAccount(student_create_id.getText().toString(),
                student_create_password.getText().toString(),
                student_login_map);
    }
});
```

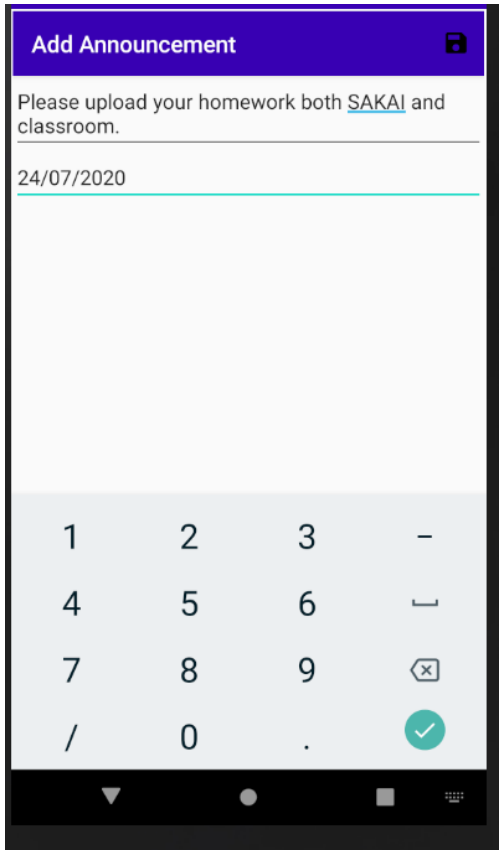
Project Requirements

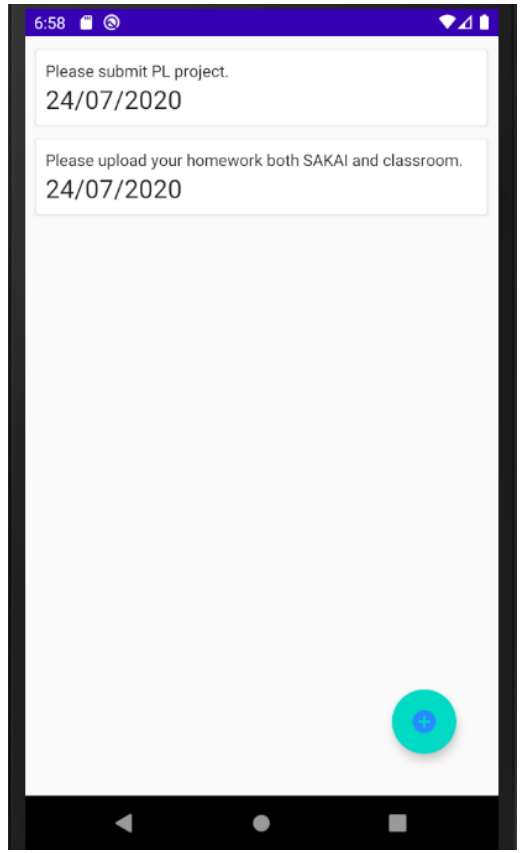




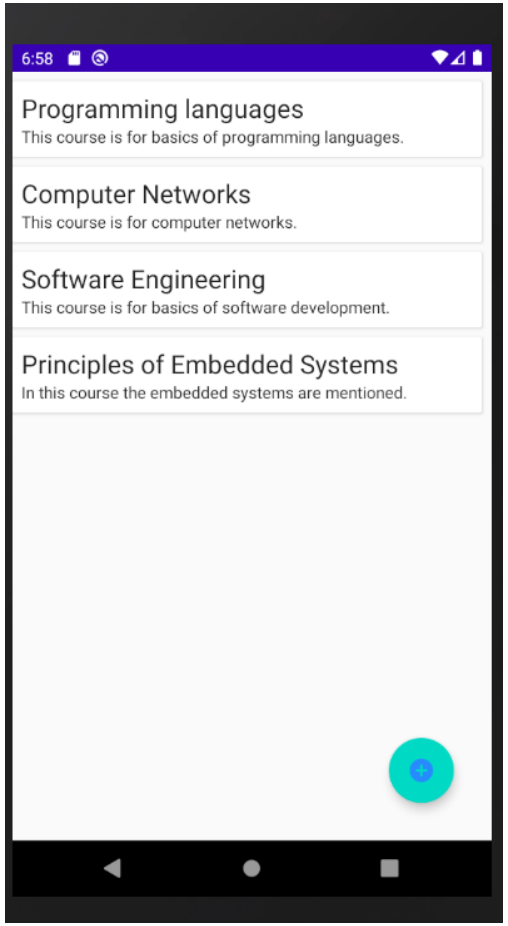
Project Requirements

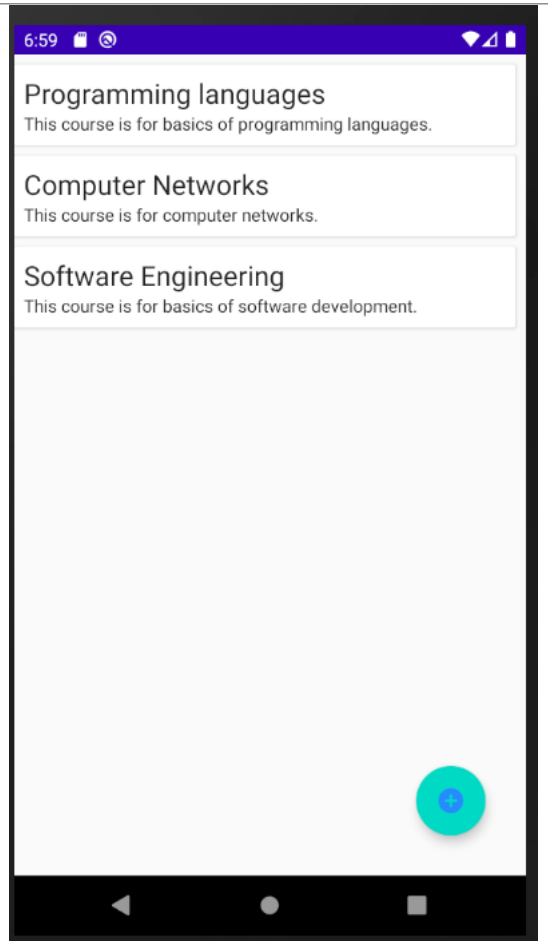


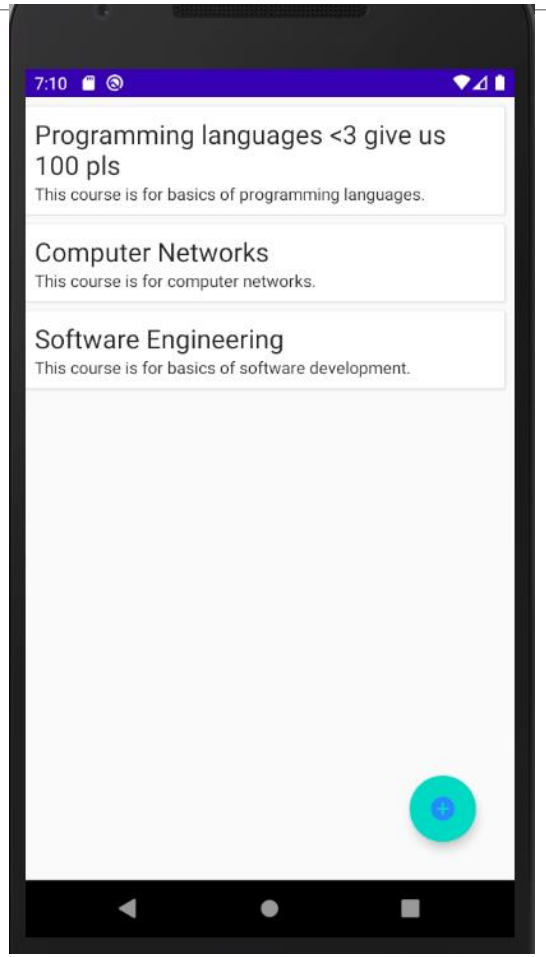




Project Requirements







Project Requirements

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_teacher_view);

    //Temporary ids-passwords.
   final Map<String, String> teacher_login_map = new HashMap<~>();
   teacher_login_map.put("admin","admin");
   teacher_login_map.put("1234","teachersifre");
   teacher_login_map.put("12","12");
```

```
@Database(entities = Assignment.class, version = 1)
public abstract class AssignmentDatabase extends RoomDatabase {
```

Project Requirements

```
//This function opens a new activity i.e a new page.
public void validateTeacher(String id, String password, Map<String,String> teacher_login_map){
    for(Map.Entry<String, String> pairs : teacher_login_map.entrySet()){

        if(id.equals(pairs.getKey()) && password.equals(pairs.getValue())){
            Intent intent = new Intent( packageContext: Teacher_view.this, Teacher_General_View.class);
            Toast.makeText( context: this,  text: "Succesfully logged in.", Toast.LENGTH_SHORT).show();
            startActivity(intent);
        }
        else{
            Toast.makeText( context: this,  text: "Check id and password. ", Toast.LENGTH_SHORT).show();
        }
    }
}
```

Project Requirements

```
public static final String EXTRA_ID = "com.example.cengonline_v1.AnnouncementMVVM.EXTRA_ID";
public static final String EXTRA_TEXT = "com.example.cengonline_v1.AnnouncementMVVM.EXTRA_TEXT";
public static final String EXTRA_DATE = "com.example.cengonline_v1.AnnouncementMVVM.EXTRA_DATE";
```

```
@Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) {
    switch (item.getItemId()){
        case R.id.save_assignment:
            saveAssignment();
        default:
            return super.onOptionsItemSelected(item);
    }
}
```

User Interface

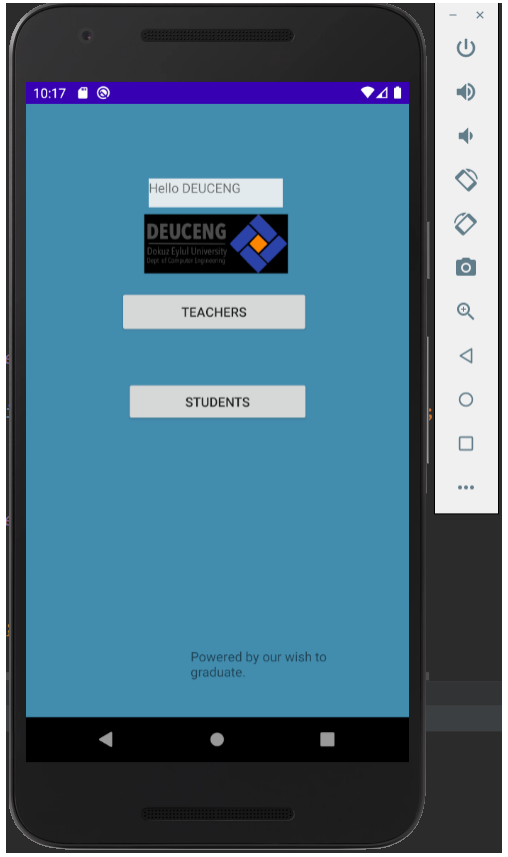
Development area is Android.

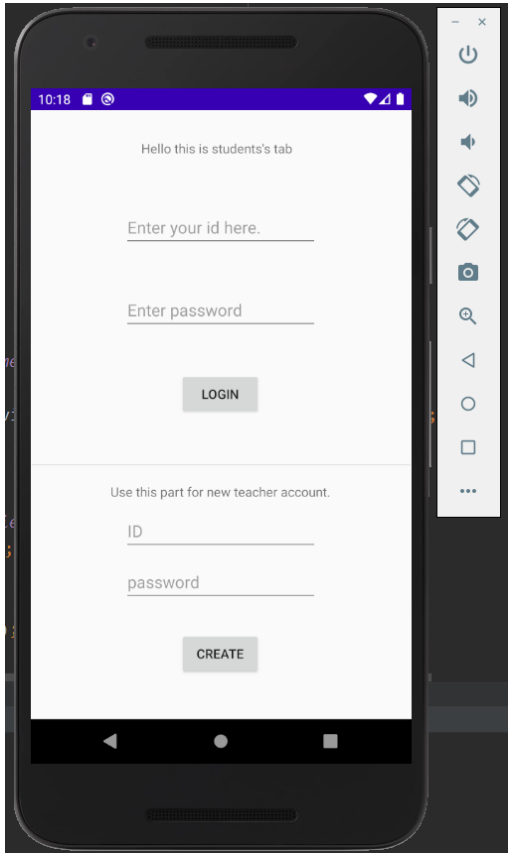
User interface in built in.

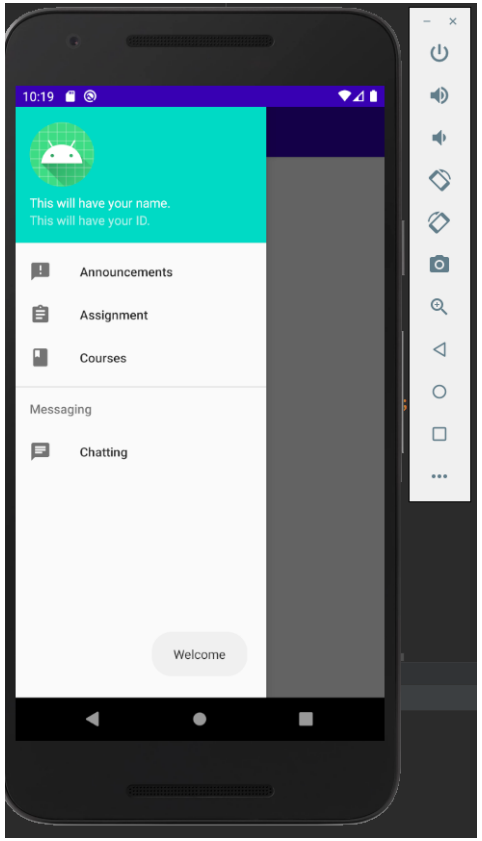
Layouts, drawables, menus are all XML files.

Android Studio IDE helps design by drag & drop functionality.

User Interface







Task Sharing

Cem Sinan had these parts:

- Initial research for appropriate platform for this project.
- Implementing bulk of the application.
- Deciding on architectural issues.
- Testing
- Reporting.

Seher İnci Taştan had these parts:

- Requirement analysis for implementation.
- Initial design of OOP
- Research for implementation requirements.
- Implementing layouts or UI design.
- Presentation.

Incomplete Task(s), Reasons and Explanations

Our project lacks identity or in web terms «session» of user. This causes

- Messages would not work.
- ID based information could not be given, as well as profile options.

Comment section of streams.

- Could not figure out logic behind that.

Additional Improvements

There was not anything related to using proper architecture, in this project

- Model-View-ViewModel architecture is used.
- Performance of the application is ideal.

Problems Encountered

These can be summarized as:

- Problems meanwhile implementing, we lacked experience in this paradigm.
- Problems related to social distancing, we could not meet and do projects face to face.
- Finding tutorial was hard due to versions and deprecated libraries.

Conclusion

We have done our project successfully, even though some aspects are absent.

Requirements are done, functionalities not fully finished.

We have prepared necessary documentation and presentation.

Development in Android can be very satisfying and frustrating.

References

Google LLC, «Developers Android,» [Çevrimiçi]. Available: https://developer.android.com/index.html. [Erişildi: 24 June 2020].

Coding in Flow, «Android Tutorials,» [Çevrimiçi]. Available: https://codinginflow.com. [Erişildi: 24 June 2020].

M. L. Murphy, The Busy Coder's Guide To Android Development, CommonsWare, 2019.

T. Hagos, Android Studio IDE Quick Reference- A Pocket Guide to Android Studio Development, APress, 2019.