Name : Mujahid Ullah

Subject: Android Development

Submitted To Sir Junaid

Date : 2-Jan-2021

Assignment No 10

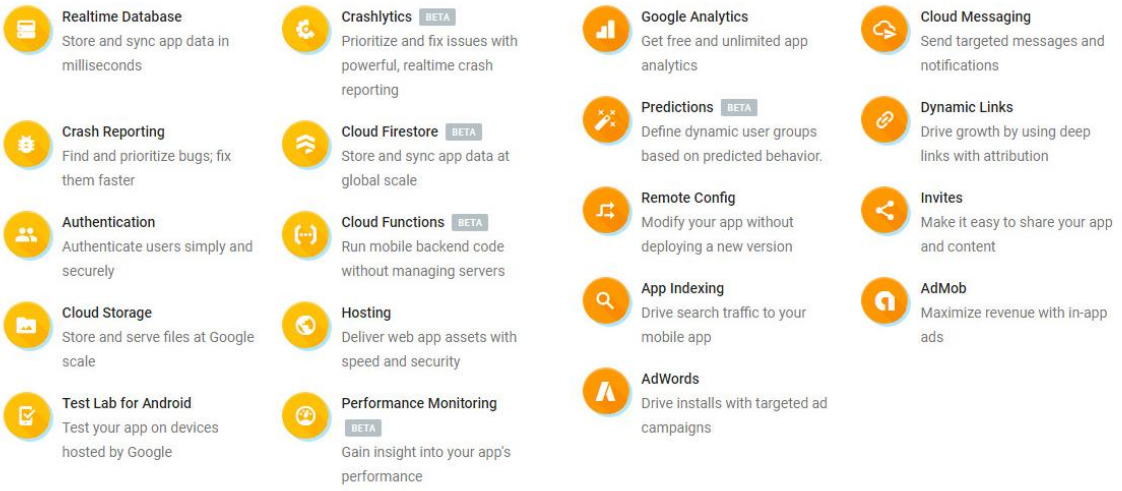
Firebase :

Firebase is a platform provided by Google to power up your mobile App. Firebase is packed with salient features like user authentication and cloud messaging. In this tutorial, i will demonstrate the use of authentication feature in Firebase.

I will build an android app and show how Firebase auth feature is implemented in android.

I will walk you through to build a sign up and a login activity. In sign up activity, we'll make user enter email address and set password. We'll also provide login option to the registered user. Register users will be directed to a new activity. This user activity will have a dummy text and a logout button. Button click will direct user to login activity.

Firebase Modules

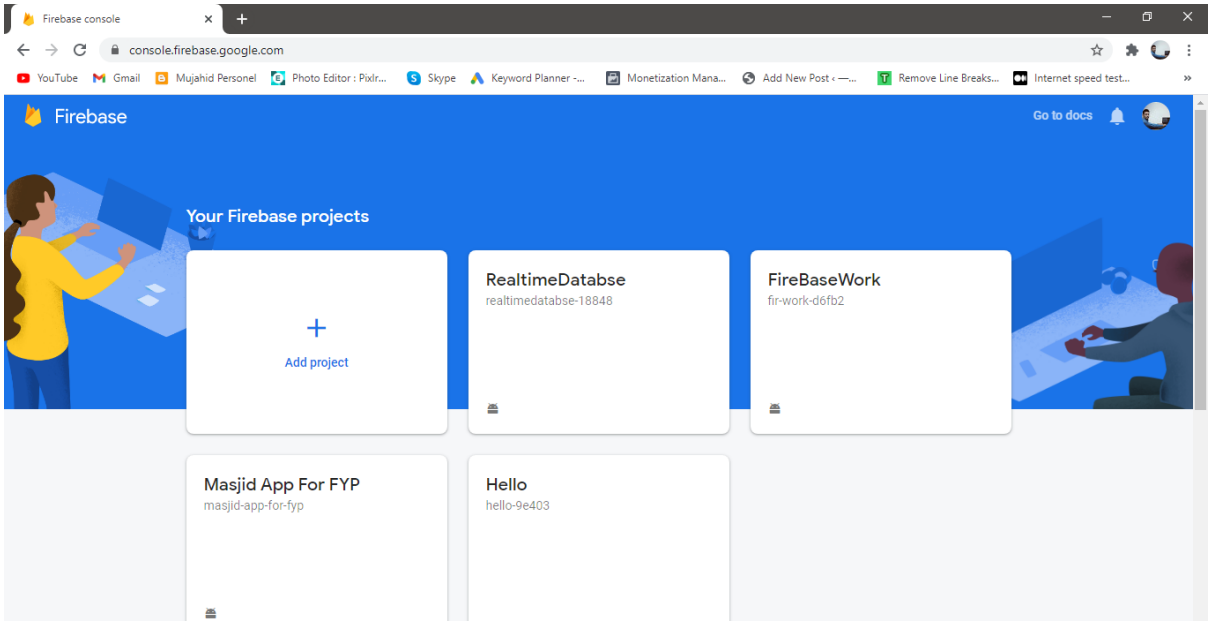


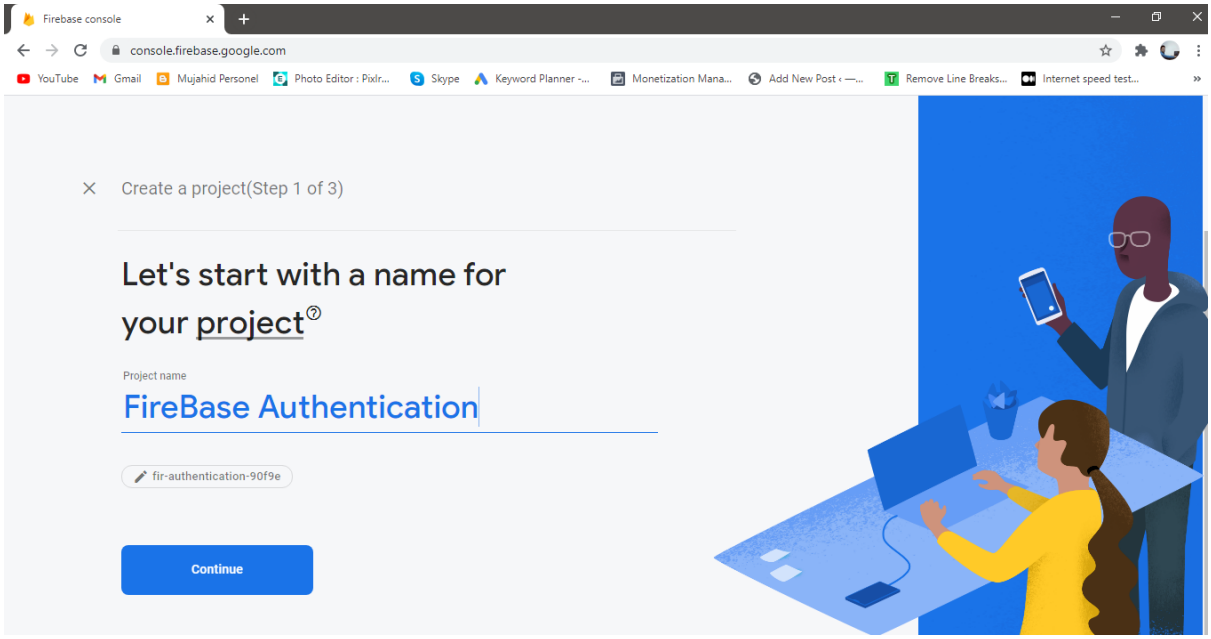
Firebase Auth Android Demo App

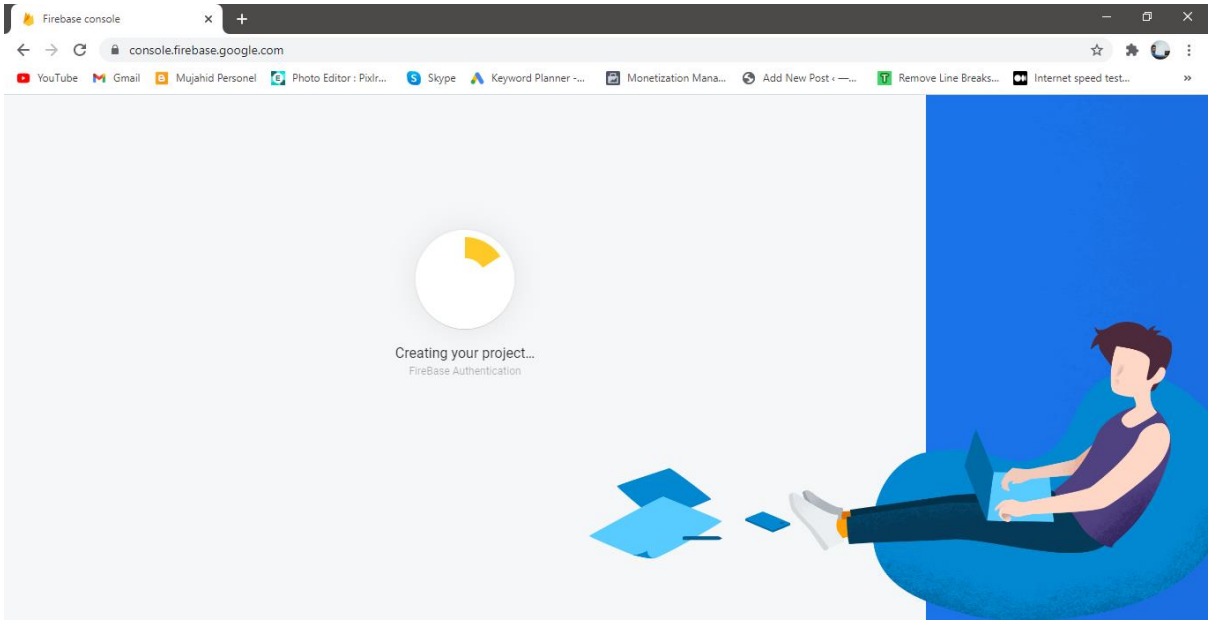
I have tried to make things as simple as possible. You can use this in your Firebase based Android APP as base structure and can add or modify the feature according to your requirements.

Before we proceed, we need to link our app to Firebase. Follow these steps,

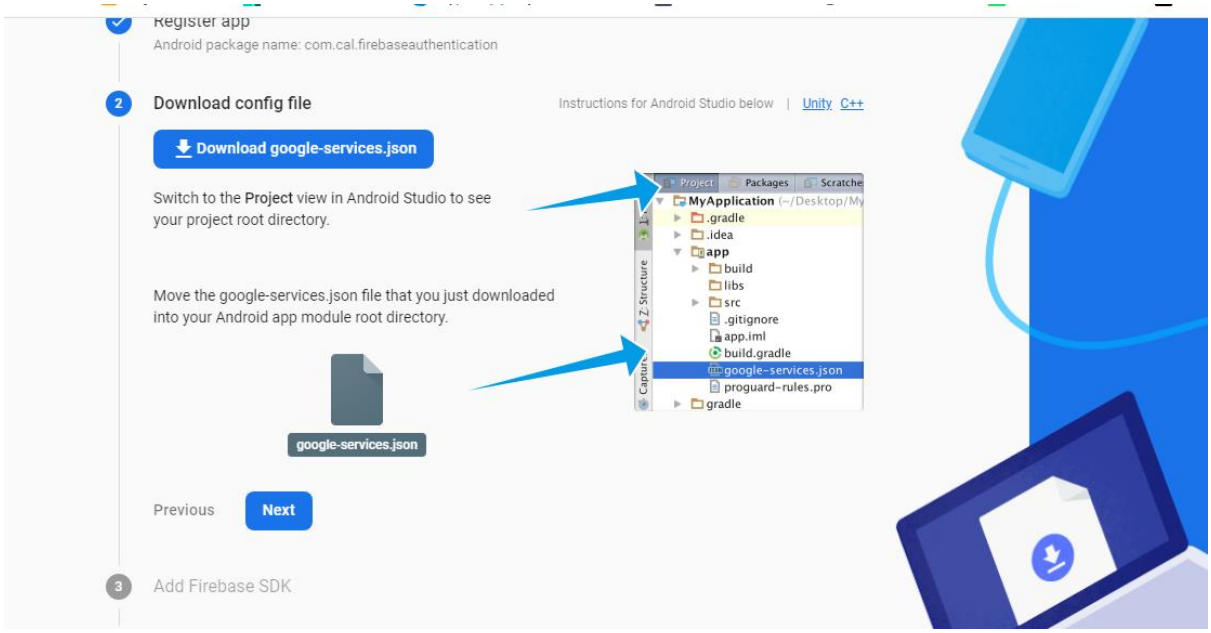
- Open Firebase in your browser and click on 'GO TO CONSOLE'.
- Click on add new project. Enter app name, select country and click on create project


Firebase console
console.firebase.google.com
YouTube
Gmail
Mujahid Personel
Photo Editor : Pixlr...
Skype
Keyword Planner -...
Monetization Mana...
Add New Post ‹ —...
Remove Line Breaks...
Internet speed test...
Firebase
Go to docs
Your Firebase projects
Add project
RealtimeDatabse
realtimedatabse-18848
FireBaseWork
fir-work-d6fb2
Masjid App For FYP
masjid-app-for-fyp
Hello
hello-9e403

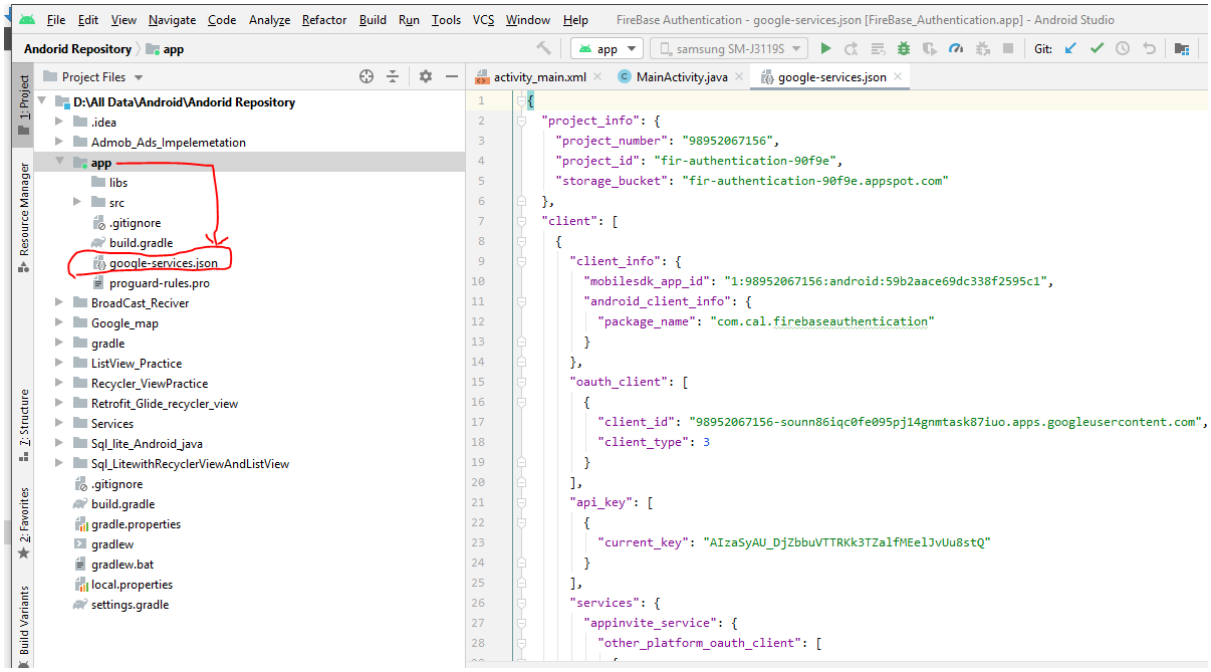

Firebase console
console.firebase.google.com
YouTube
Gmail
Mujahid Personel
Photo Editor : Pixlr...
Skype
Keyword Planner -...
Monetization Mana...
Add New Post ‹ —...
Remove Line Breaks...
Internet speed test...
Create a project(Step 1 of 3)
Let's start with a name for your project
Project name
FireBase Authentication
fir-authentication-90f9e
Continue



Download Json File:



Now Copy json file from download folder and past app directory android studio:



The Google services plugin for Gradle loads the `google-services.json` file that you just downloaded. Modify your build.gradle files to use the plugin.

Project-level build.gradle (`<project>/build.gradle`):

activity_main.xml

It is our sign up activity. It has two EditTexts, a Button and a TextView. Here, EditTexts are used to get email and password from user. An option is provided to log in for registered users. TextView is used for this purpose.

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/ETemail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="15dp"
        android:hint="Email"
        android:inputType="textEmailAddress"
        />
    <EditText
        android:id="@+id/ETpassword"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="15dp"
        android:hint="Password"
        android:inputType="numberPassword"
        />
    <Button
        android:id="@+id/btnSignUp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="15dp"
        android:text="Sign Up"/>
    <TextView
        android:id="@+id/TVSignIn"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Already have an account? Sign in Here"
        android:layout_margin="15dp"
        android:textSize="20dp"/>
</LinearLayout>
```

activity_login.xml

Layout of login activity is similar to sign up activity.

MainActivity.java

Here, we have two click listeners, one attached to button and other to textview. On button click, it is checked if any of the parameter empty .If TextView is clicked, then user will be directed to login activity. If that's the case then error message is displayed. If both textviews has data, then createUserWithEmailAndPassword() method is invoked.

Inside createUserWithEmailAndPassword() method, task success is checked. If task is successful then user is directed to user activity. Sometimes user enter/mistype email(like no use of @ symbol) and password(like too short password), then app may crash. We don't want that to happen. To avoid that, we'll use getException() method and display it in a toast.

Code:

```
package com.cal.firebaseauthentication;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import com.google.android.gms.tasks.OnCompleteListener;
import com.google.android.gms.tasks.Task;
import com.google.firebase.auth.FirebaseAuth;

public class MainActivity extends AppCompatActivity {

    public EditText emailId, passwd;
    Button btnSignUp;
    TextView signIn;
    FirebaseAuth firebaseAuth;

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

        firebaseAuth = FirebaseAuth.getInstance();
        emailId = findViewById(R.id.ETemail);
        passwd = findViewById(R.id.ETpassword);
        btnSignUp = findViewById(R.id.btnSignUp);
        signIn = findViewById(R.id.TVSignIn);

        btnSignUp.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String emailID = emailId.getText().toString();
                String paswd = passwd.getText().toString();
                if (emailID.isEmpty()) {
                    emailId.setError("Provide your Email first!");
                    emailId.requestFocus();
                } else if (paswd.isEmpty()) {
                    passwd.setError("Set your password");
                    passwd.requestFocus();
                } else if (emailID.isEmpty() && paswd.isEmpty()) {
                    Toast.makeText(MainActivity.this, "Fields Empty!",
Toast.LENGTH_SHORT).show();
                } else if (!(emailID.isEmpty() && paswd.isEmpty())) {
                    firebaseAuth.createUserWithEmailAndPassword(emailID,
paswd).addOnCompleteListener(MainActivity.this, new OnCompleteListener() {
                        @Override
                        public void onComplete(@NonNull Task task) {

                            if (!task.isSuccessful()) {

Toast.makeText(MainActivity.this.getApplicationContext(),
                                        "SignUp unsuccessful: " +
task.getException().getMessage(),
                                        Toast.LENGTH_SHORT).show();
                            } else {
                                startActivity(new Intent(MainActivity.this,
UserActivity.class));
```

```
                            }
                        }
                    });
                } else {
                    Toast.makeText(MainActivity.this, "Error",
Toast.LENGTH_SHORT).show();
                }
            }
        });
        signIn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent I = new Intent(MainActivity.this, Login_activity.class);
                startActivity(I);
            }
        });
    }
}
```

ActivityLogin.java:

Here, code is similar to that of MainActivity. Only major difference is use of signInWithEmailAndPassword() method in place of createUserWithEmailAndPassword().

```
package com.cal.firebaseauthentication;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import com.google.android.gms.tasks.OnCompleteListener;
import com.google.android.gms.tasks.Task;
import com.google.firebase.auth.FirebaseAuth;
import com.google.firebase.auth.FirebaseUser;

public class Login_activity extends AppCompatActivity {

    public EditText loginEmailId, logInpasswd;
    Button btnLogIn;
    TextView signup;
    FirebaseAuth firebaseAuth;
    private FirebaseAuth.AuthStateListener authStateListener;

    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login_activity);


        firebaseAuth = FirebaseAuth.getInstance();
        loginEmailId = findViewById(R.id.loginEmail);
        logInpasswd = findViewById(R.id.loginpaswd);
        btnLogIn = findViewById(R.id.btnLogIn);
        signup = findViewById(R.id.TVSignIn);

        authStateListener = new FirebaseAuth.AuthStateListener() {
            @Override
            public void onAuthStateChanged(@NonNull FirebaseAuth firebaseAuth) {
                FirebaseUser user = firebaseAuth.getCurrentUser();
                if (user != null) {
                    Toast.makeText(Login_activity.this, "User logged in ",
Toast.LENGTH_SHORT).show();
                    Intent I = new Intent(Login_activity.this,
UserActivity.class);
                    startActivity(I);
                } else {
                    Toast.makeText(Login_activity.this, "Login to continue",
Toast.LENGTH_SHORT).show();
                }
            }
        };
        signup.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent I = new Intent(Login_activity.this, MainActivity.class);
                startActivity(I);
            }
        });
        btnLogIn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String userEmail = loginEmailId.getText().toString();
                String userPaswd = logInpasswd.getText().toString();
                if (userEmail.isEmpty()) {
                    loginEmailId.setError("Provide your Email first!");
                    loginEmailId.requestFocus();
                } else if (userPaswd.isEmpty()) {
                    logInpasswd.setError("Enter Password!");
                    logInpasswd.requestFocus();
                } else if (userEmail.isEmpty() && userPaswd.isEmpty()) {
                    Toast.makeText(Login_activity.this, "Fields Empty!",
Toast.LENGTH_SHORT).show();
                } else if (!(userEmail.isEmpty() && userPaswd.isEmpty())) {
                    firebaseAuth.signInWithEmailAndPassword(userEmail,
userPaswd).addOnCompleteListener(Login_activity.this, new OnCompleteListener() {
                        @Override
                        public void onComplete(@NonNull Task task) {
                            if (!task.isSuccessful()) {
                                Toast.makeText(Login_activity.this, "Not
sucessfull", Toast.LENGTH_SHORT).show();
                            } else {
                                startActivity(new Intent(Login_activity.this,
UserActivity.class));
```

```
                            }
                        }
                    });
                } else {
                    Toast.makeText(Login_activity.this, "Error",
Toast.LENGTH_SHORT).show();
                }
            }
        });

    }

    @Override
    protected void onStart() {
        super.onStart();
        firebaseAuth.addAuthStateListener(authStateListener);
    }
}
```

Login.Xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:tools="http://schemas.android.com/tools"
    android:gravity="center"
    tools:context=".Login_activity"
    android:orientation="vertical">

    <EditText
        android:id="@+id/loginEmail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="15dp"
        android:hint="Email"
        android:inputType="textEmailAddress" />

    <EditText
        android:id="@+id/loginpaswd"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="15dp"
        android:hint="Password"
        android:inputType="numberPassword"/>

    <Button
        android:id="@+id/btnLogIn"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="15dp"
        android:text="Login In"
        android:textSize="25dp" />

    <TextView
        android:id="@+id/TVSignIn"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="15dp"
        android:text="New User? Register Here"
        android:textSize="20dp" />
</LinearLayout>
```

UserActivty.java

We need to make user exit his account on button click. We'll add click listener to this button. signOut() method is used here.

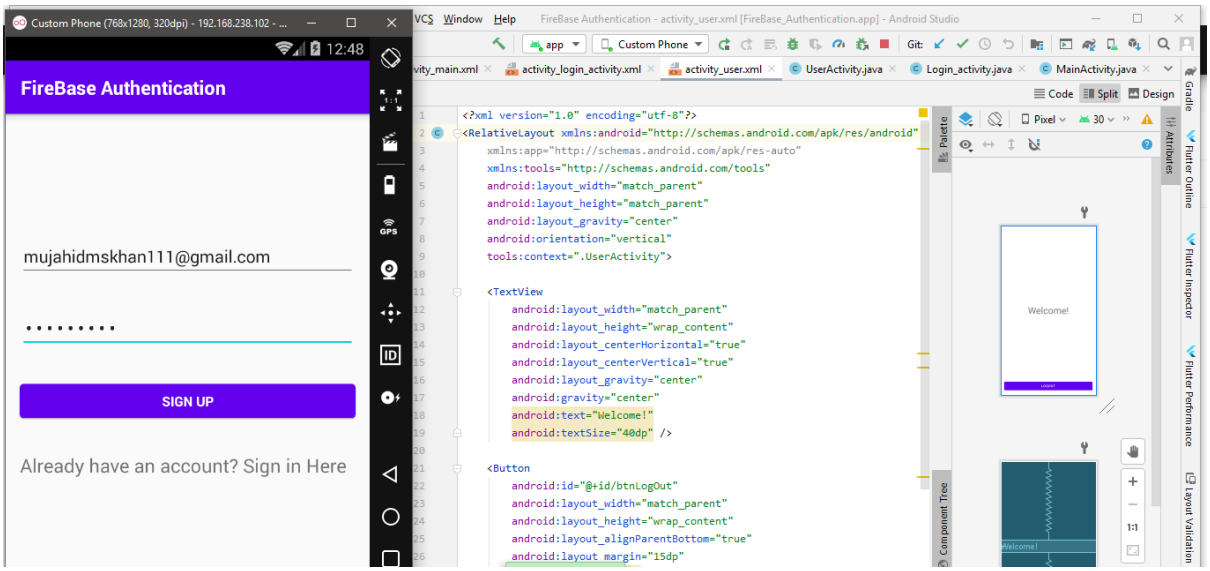
```
package com.cal.firebaseauthentication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

import com.google.firebase.auth.FirebaseAuth;

public class UserActivity extends AppCompatActivity {

    Button btnLogOut;
    FirebaseAuth firebaseAuth;
    private FirebaseAuth.AuthStateListener authStateListener;

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

        btnLogOut = (Button) findViewById(R.id.btnLogOut);
        btnLogOut.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                FirebaseAuth.getInstance().signOut();
                Intent I = new Intent(UserActivity.this, Login_activity.class);
                startActivity(I);

            }
        });

    }

    @Override
    public void onBackPressed() {

        super.onBackPressed();
    }
}
```

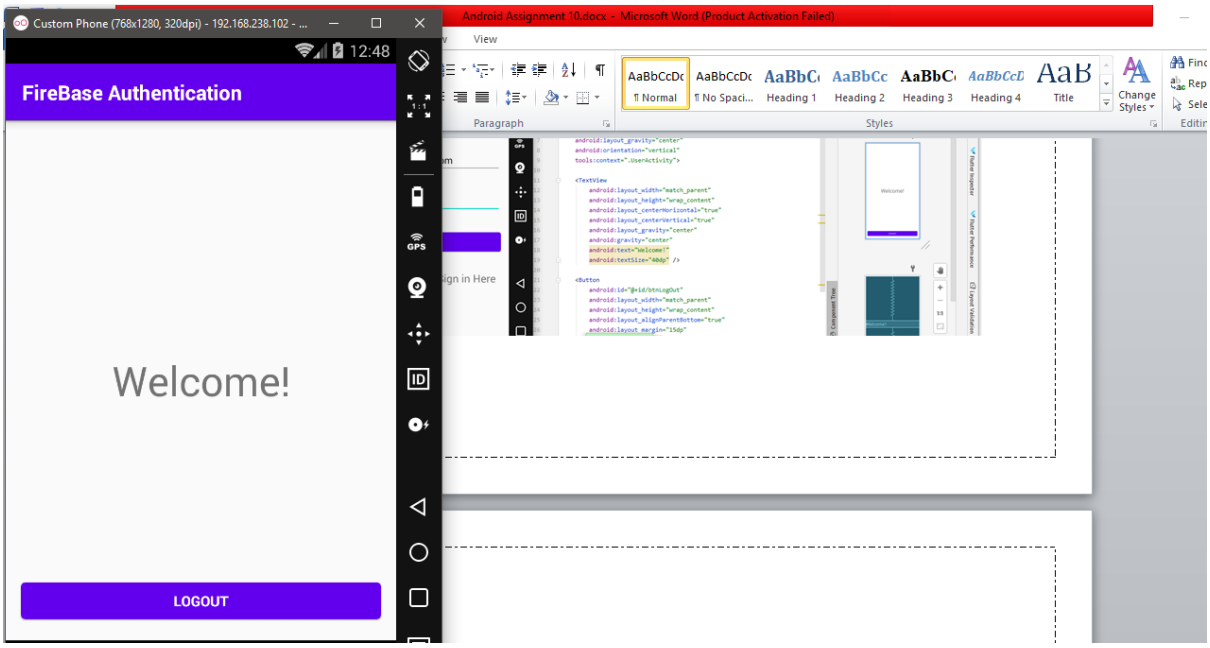
userActivity.xml

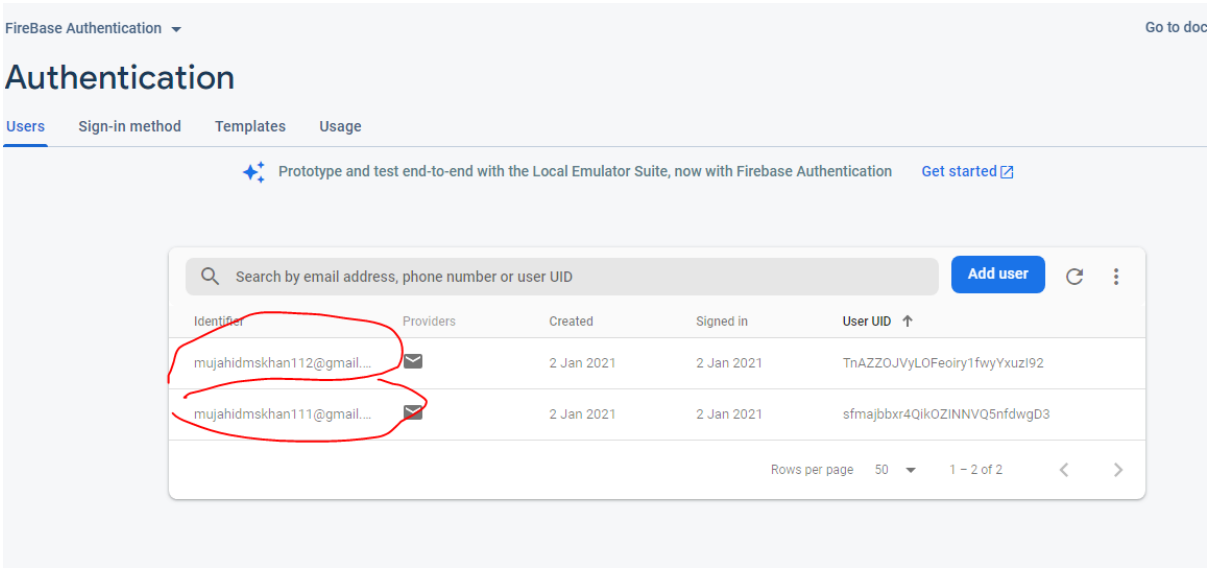
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="center"
    android:orientation="vertical"
    tools:context=".UserActivity">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_centerVertical="true"
        android:layout_gravity="center"
        android:gravity="center"
        android:text="Welcome!"
        android:textSize="40dp" />

    <Button
        android:id="@+id/btnLogOut"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentBottom="true"
        android:layout_margin="15dp"
        android:text="Logout" />
</RelativeLayout>
```

Now Run Emulator :

output:




Custom Phone (768x1280, 320dpi) - 192.168.238.102 - ...
12:48
FireBase Authentication
Welcome!
LOGOUT
Android Assignment 10.docx - Microsoft Word (Product Activation Failed)
View
Paragraph
Styles
Heading 1
Heading 2
Heading 3
Heading 4
Title
Change Styles


FireBase Authentication
Go to doc
Authentication
Users
Sign-in method
Templates
Usage
Prototype and test end-to-end with the Local Emulator Suite, now with Firebase Authentication
Get started
Search by email address, phone number or user UID
Add user
Identifier
Providers
Created
Signed in
User UID
mujahidmskhan112@gmail....
2 Jan 2021
2 Jan 2021
TnAZZOJVyLOFeoiry1fwyYxuzI92
mujahidmskhan111@gmail....
2 Jan 2021
2 Jan 2021
sfmajbbxr4QikOZINNVQ5nfdwgD3
Rows per page
50
1 – 2 of 2