

## MODUL 4: FIREBASE (Authentication)

### A. TUJUAN

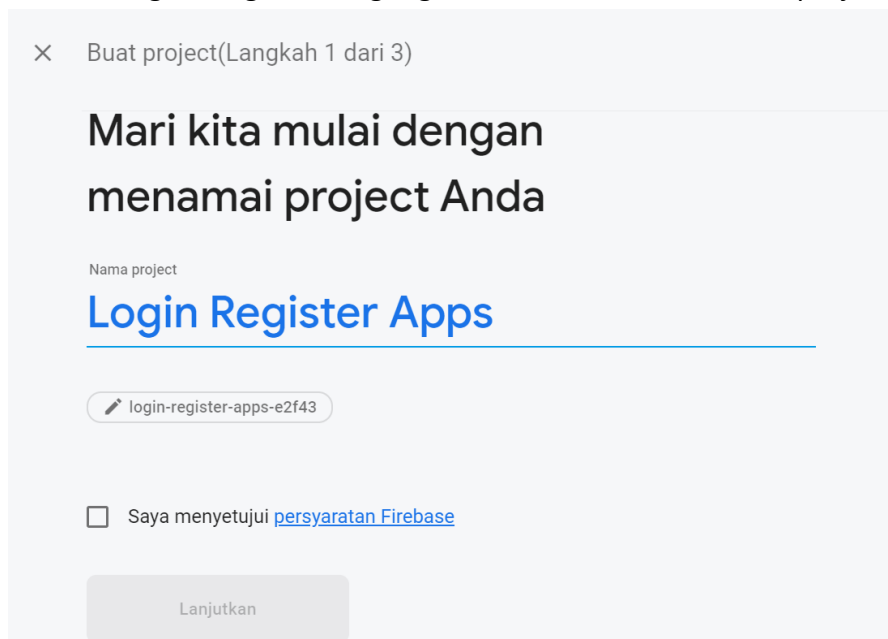
1. Mahasiswa diharapkan dapat mengetahui dan mengimplementasikan kegunaan firebase.
2. Mahasiswa diharapkan dapat mengetahui dan mengimplementasikan cara membuat firebase.
3. Mahasiswa dapat mengetahui dan mengimplementasikan firebase authentication.

### B. MATERI

1. Referensi
  - a. <https://firebase.google.com/docs/auth>
  - b. <https://firebase.google.com/docs/auth/android/start>
  - c. <https://firebase.google.com/docs/auth/android/password-auth>
  - d. <https://firebase.google.com/docs/auth/android/email-link-auth>

### C. PRAKTIKUM

1. Buatlah sebuah project baru pada android studio
2. Jika sudah membuat project baru, silahkan menuju ke firebase console di **console.firebase.google.com**
3. Silahkan login dengan akun google anda, kemudian klik buat project baru.



× Buat project(Langkah 1 dari 3)

Mari kita mulai dengan  
menamai project Anda

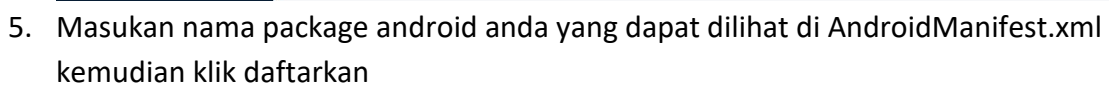
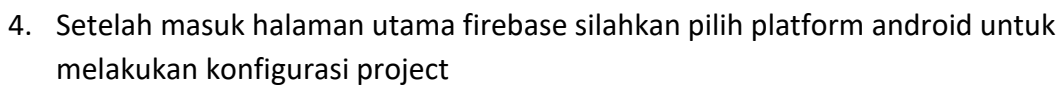
Nama project

Login Register Apps

login-register-apps-e2f43

☐ Saya menyetujui [persyaratan Firebase](#)

Lanjutkan



Tambah Firebase ke aplikasi Android

Daftarkan aplikasi

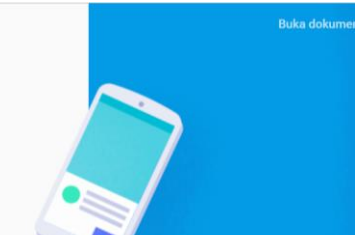
Nama paket Android ⓘ

Nama aplikasi (opsional) ⓘ

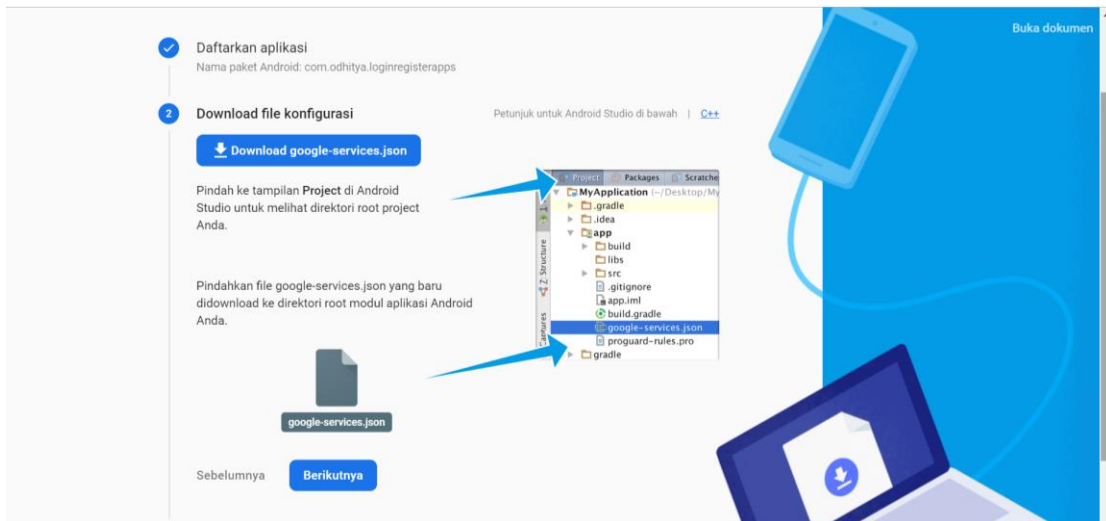
Sertifikat penandatanganan debug SHA-1 (opsional) ⓘ

Diperlukan untuk Dynamic Links, Invites, dan Login dengan Google atau dukungan nomor telepon di Auth. Edit SHA-1 di Setelan.

Buka dokumen



- Download **google-services.json** kemudian copy-paste ke directory/package app sesuai instruksi gambar dibawah ini



- Selanjutnya anda diminta untuk konfigurasi firebase sdk seperti gambar berikut



- Silahkan kalian copy saja classpath dan dependency diatas sesuai arahan dari firebase, untuk **classpath** silahkan copy-paste ke **build.gradle** yang ada di luar folder app. Sedangkan **dependency** silahkan kalian copy-paste ke **build.gradle** yang ada di folder app. sehingga 2 file tersebut akan seperti ini. Kemudian terakhir klik "**Sync Now**".

```

1 // Top-level build file where you can add configuration options common to all sub-projects/modules.
2
3 buildscript {
4     repositories {
5         google()
6         jcenter()
7     }
8
9     dependencies {
10         classpath 'com.android.tools.build:gradle:3.4.1'
11         classpath 'com.google.gms:google-services:4.3.2'
12
13         // NOTE: Do not place your application dependencies here; they belong
14         // in the individual module build.gradle files
15     }
16 }
17
18 allprojects {
19     repositories {
20         google()
21         jcenter()
22     }
23 }

```

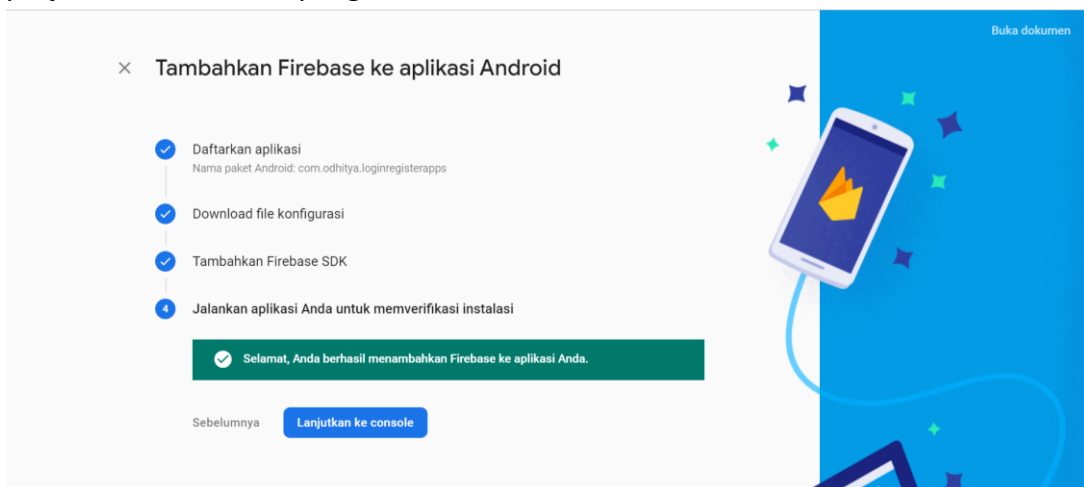
Dan

```

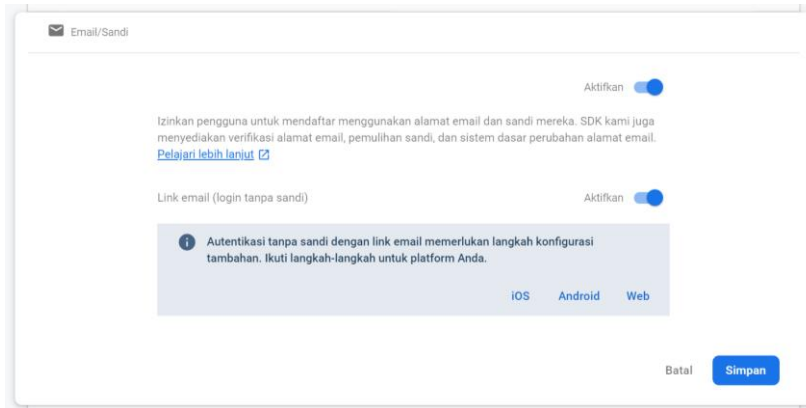
1 apply plugin: 'com.android.application'
2 apply plugin: 'com.google.gms.google-services'
3
4 android {
5     compileSdkVersion 29
6     defaultConfig {
7         applicationId "com.odhitya.loginregisterapps"
8         minSdkVersion 16
9         targetSdkVersion 29
10        versionCode 1
11        versionName "1.0"
12        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
13    }
14    buildTypes {
15        release {
16            minifyEnabled false
17            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-rules.pro'
18        }
19    }
20 }
21
22 dependencies {
23     // add the Firebase SDK for Google Analytics
24     implementation 'com.google.firebase:firebase-analytics:17.2.0'
25     implementation fileTree(dir: 'libs', include: ['*.jar'])
26     implementation 'androidx.appcompat:appcompat:1.1.0'
27     implementation 'androidx.constraintlayout:constraintlayout:1.1.3'
28     testImplementation 'junit:junit:4.12'
29     androidTestImplementation 'androidx.test:runner:1.2.0'

```

9. Lakukan running app di android studio beserta klik lanjutkan pada halaman firebase, jika sukses memverifikasi instalasi maka akan seperti gambar dibawah ini. Maka project anda sudah siap digunakan.



10. Jika sudah berhasil, lanjutkan ke menu dashboard firebase kemudian masuk **develop > Authentication > Sign-In Method/Metode Login**, pilih email / password kemudian klik aktifkan semuanya lalu klik save seperti gambar dibawah ini



11. Setting di firebase sudah selesai, saatnya kita kembali ke project di android studio yang sudah dibuat. Silahkan anda tambahkan 2 dependency berikut pada **build.gradle(level app)** seperti dibawah ini

```

22 dependencies {
23     // add the Firebase SDK for Google Analytics
24     implementation 'com.google.firebase:firebase-analytics:17.2.0'
25     implementation fileTree(dir: 'libs', include: ['*.jar'])
26     implementation 'androidx.appcompat:appcompat:1.1.0'
27     implementation 'androidx.constraintlayout:constraintlayout:1.1.3'
28     implementation 'com.google.android.material:material:1.0.0'
29     testImplementation 'junit:junit:4.12'
30     androidTestImplementation 'androidx.test:runner:1.2.0'
31     androidTestImplementation 'androidx.test.espresso:espresso-core:3.2.0'
32     implementation 'com.google.firebase:firebase-auth:17.0.0'
33     implementation 'com.google.android.gms:play-services-auth:16.0.1'
34 }

```

12. Untuk membuat Activity Login dan Register, silahkan buat 2 activity baru dengan nama **RegisterActivity** dan **LoginActivity**. Selanjutnya pada layout **activity\_register.xml** edit seperti dibawah ini

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <androidx.constraintlayout.widget.ConstraintLayout
3     xmlns:android="http://schemas.android.com/apk/res/android"
4     xmlns:app="http://schemas.android.com/apk/res-auto"
5     xmlns:tools="http://schemas.android.com/tools"
6     android:layout_width="match_parent"
7     android:layout_height="match_parent"
8     tools:context=".RegisterActivity">
9
10    <EditText
11        android:id="@+id/edt_email_register"
12        android:layout_width="match_parent"
13        android:layout_height="wrap_content"
14        android:layout_margin="8dp"
15        android:layout_marginBottom="8dp"
16        android:hint="email"
17        android:importantForAutofill="no"
18        android:inputType="textEmailAddress"
19        app:layout_constraintBottom_toTopOf="@+id/edt_password_register"
20        app:layout_constraintEnd_toEndOf="parent"
21        app:layout_constraintHorizontal_bias="0.5"
22        app:layout_constraintStart_toStartOf="parent"
23        app:layout_constraintTop_toTopOf="parent"
24        app:layout_constraintVertical_chainStyle="packed"
25        tools:targetApi="o" />

```

```

27 <EditText
28     android:id="@+id/edt_password_register"
29     android:layout_width="match_parent"
30     android:layout_height="wrap_content"
31     android:layout_margin="8dp"
32     android:hint="password"
33     android:inputType="textPassword"
34     app:layout_constraintBottom_toTopOf="@+id/btn_register"
35     app:layout_constraintEnd_toEndOf="parent"
36     app:layout_constraintHorizontal_bias="0.5"
37     app:layout_constraintStart_toStartOf="parent"
38     app:layout_constraintTop_toBottomOf="@+id/edt_email_register"
39     android:importantForAutofill="no"
40     tools:targetApi="o" />

42 <Button
43     android:id="@+id/btn_register"
44     android:layout_width="match_parent"
45     android:layout_height="wrap_content"
46     android:layout_margin="16dp"
47     android:layout_marginTop="8dp"
48     android:background="@color/colorPrimary"
49     android:text="register"
50     android:textColor="@android:color/white"
51     app:layout_constraintBottom_toBottomOf="parent"
52     app:layout_constraintEnd_toEndOf="parent"
53     app:layout_constraintHorizontal_bias="0.5"
54     app:layout_constraintStart_toStartOf="parent"
55     app:layout_constraintTop_toBottomOf="@+id/edt_password_register" />
56
57 </androidx.constraintlayout.widget.ConstraintLayout>

```

13. Jika sudah buka **RegisterActivity.java** lalu edit seperti dibawah ini

```

1  package com.odhitya.loginregisterapps;
2
3  import ...
18
19  public class RegisterActivity extends AppCompatActivity {
20
21      private EditText edtEmail, edtPassword;
22      private Button btnRegister;
23      private FirebaseAuth auth;
24
25      @Override
26      protected void onCreate(Bundle savedInstanceState) {
27          super.onCreate(savedInstanceState);
28          setContentView(R.layout.activity_register);
29
30          initView();
31          registerUser();
32      }
33
34      private void initView() {
35          edtEmail = findViewById(R.id.edt_email_register);
36          edtPassword = findViewById(R.id.edt_password_register);
37          btnRegister = findViewById(R.id.btn_register);
38          auth = FirebaseAuth.getInstance();
39      }

```

```

41 private void registerUser() {
42     btnRegister.setOnClickListener((view) -> {
43         //menampung inputan user
44         String emailUser = edtEmail.getText().toString().trim();
45         String passwordUser = edtPassword.getText().toString().trim();
46
47         //validasi email dan password
48         //jika email kosong
49         if (emailUser.isEmpty()){
50             edtEmail.setError("Email harus diisi !!!");
51         }
52         //jika email not valid
53         else if (!Patterns.EMAIL_ADDRESS.matcher(emailUser).matches()){
54             edtEmail.setError("Email tidak valid !!!");
55         }
56         //jika password kosong
57         else if (passwordUser.isEmpty()){
58             edtPassword.setError("Password harus diisi !!!");
59         }
60         //jika password kurang dari 8 karakter
61         else if (passwordUser.length() < 8){
62             edtPassword.setError("Password minimal terdiri dari 8 karakter");
63         }
64     }
65 }
66
67 else {
68     //create user dengan firebase auth
69     auth.createUserWithEmailAndPassword(emailUser,passwordUser)
70     .addOnCompleteListener( activity: RegisterActivity.this, (task) -> {
71         //jika gagal register
72         if (!task.isSuccessful()){
73             Toast.makeText( context: RegisterActivity.this, text: "Register gagal karena"
74                 + task.getException().getMessage(), Toast.LENGTH_LONG).show();
75         }
76         else {
77             //jika sukses akan menuju ke login activity
78             startActivity(new Intent( packageContext: RegisterActivity.this, LoginActivity.class));
79         }
80     });
81 }
82 }
83 }
84 }
85 }
86 }
87 }

```

14. Lalu pada layout **activity\_login.xml** lakukan edit seperti dibawah ini

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <androidx.constraintlayout.widget.ConstraintLayout
3     xmlns:android="http://schemas.android.com/apk/res/android"
4     xmlns:app="http://schemas.android.com/apk/res-auto"
5     xmlns:tools="http://schemas.android.com/tools"
6     android:layout_width="match_parent"
7     android:layout_height="match_parent"
8     tools:context=".LoginActivity">
9
10    <EditText
11        android:id="@+id/edt_email"
12        android:layout_width="match_parent"
13        android:layout_height="wrap_content"
14        android:layout_margin="8dp"
15        android:layout_marginEnd="8dp"
16        android:layout_marginRight="8dp"
17        android:layout_marginBottom="8dp"
18        android:hint="email"
19        android:importantForAutofill="no"
20        android:inputType="textEmailAddress"
21        app:layout_constraintBottom_toTopOf="@+id/edt_password"
22        app:layout_constraintEnd_toEndOf="parent"
23        app:layout_constraintHorizontal_bias="0.5"
24        app:layout_constraintStart_toStartOf="parent"
25        app:layout_constraintTop_toTopOf="parent"
26        app:layout_constraintVertical_chainStyle="packed"
27        tools:targetApi="o" />

```

```

28 <EditText
29     android:id="@+id/edt_password"
30     android:layout_width="match_parent"
31     android:layout_height="wrap_content"
32     android:layout_margin="8dp"
33     android:hint="password"
34     android:importantForAutofill="no"
35     android:inputType="textPassword"
36     app:layout_constraintBottom_toTopOf="@+id/btn_login"
37     app:layout_constraintEnd_toEndOf="parent"
38     app:layout_constraintHorizontal_bias="0.5"
39     app:layout_constraintStart_toStartOf="parent"
40     app:layout_constraintTop_toBottomOf="@+id/edt_email"
41     tools:targetApi="o" />

```

```

43 <Button
44     android:id="@+id/btn_login"
45     android:layout_width="match_parent"
46     android:layout_height="wrap_content"
47     android:layout_marginLeft="16dp"
48     android:layout_marginTop="8dp"
49     android:layout_marginRight="16dp"
50     android:layout_marginBottom="8dp"
51     android:background="@color/colorPrimary"
52     android:text="login"
53     android:textColor="@android:color/white"
54     app:layout_constraintBottom_toTopOf="@+id/btn_register"
55     app:layout_constraintEnd_toEndOf="parent"
56     app:layout_constraintHorizontal_bias="0.5"
57     app:layout_constraintStart_toStartOf="parent"
58     app:layout_constraintTop_toBottomOf="@+id/edt_password" />

```

```

60 <Button
61     android:id="@+id/btn_register"
62     android:layout_width="match_parent"
63     android:layout_height="wrap_content"
64     android:layout_marginLeft="16dp"
65     android:layout_marginRight="16dp"
66     android:background="@color/colorPrimaryDark"
67     android:text="register"
68     android:textColor="@android:color/white"
69     app:layout_constraintBottom_toBottomOf="parent"
70     app:layout_constraintEnd_toEndOf="parent"
71     app:layout_constraintHorizontal_bias="0.5"
72     app:layout_constraintStart_toStartOf="parent"
73     app:layout_constraintTop_toBottomOf="@+id/btn_login" />
74
75 </androidx.constraintlayout.widget.ConstraintLayout>

```

15. Jika sudah buka **LoginActivity.java** lalu edit seperti dibawah ini

```

1 package com.odhitya.loginregisterapps;
2
3 import ...
4
18
19 public class LoginActivity extends AppCompatActivity {
20
21     private EditText edtEmail, edtPassword;
22     private Button btnLogin, btnRegister;
23     private FirebaseAuth auth;
24
25     @Override
26     protected void onCreate(Bundle savedInstanceState) {
27         super.onCreate(savedInstanceState);
28         setContentView(R.layout.activity_login);
29
30         initView();
31         login();
32     }
33
34     private void initView() {
35         edtEmail = findViewById(R.id.edt_email);
36         edtPassword = findViewById(R.id.edt_password);
37         btnLogin = findViewById(R.id.btn_login);
38         btnRegister = findViewById(R.id.btn_register);
39         auth = FirebaseAuth.getInstance();
40     }

```



```

42 private void login(){
43     btnRegister.setOnClickListener((view) -> {
44         startActivity(new Intent( packageContext: LoginActivity.this, RegisterActivity.class));
45     });
46     btnLogin.setOnClickListener((view) -> {
47         //menampung inputan user
48         final String emailUser = edtEmail.getText().toString().trim();
49         final String passwordUser = edtPassword.getText().toString().trim();
50
51         //validasi email dan password
52         //jika email kosong
53         if (emailUser.isEmpty()){
54             edtEmail.setError("Email harus diisi !!!");
55         }
56         //jika email not valid
57         else if (!Patterns.EMAIL_ADDRESS.matcher(emailUser).matches()){
58             edtEmail.setError("Email tidak valid");
59         }
60         //jika password kurang dari 8 karakter
61         else if (passwordUser.length() < 8){
62             edtPassword.setError("Password minimal terdiri dari 8 karakter");
63         }
64         //jika email not valid
65         else if (!Patterns.EMAIL_ADDRESS.matcher(emailUser).matches()){
66             edtEmail.setError("Email tidak valid");
67         }
68         //jika password kurang dari 8 karakter
69         else if (passwordUser.length() < 8){
70             edtPassword.setError("Password minimal terdiri dari 8 karakter");
71         }
72         else {
73             auth.signInWithEmailAndPassword(emailUser, passwordUser)
74                 .addOnCompleteListener( activity: LoginActivity.this, (task) -> {
75                 //ketika gagal login
76                 if (!task.isSuccessful()){
77                     Toast.makeText( context: LoginActivity.this, text: "Gagal login karena"
78                         + task.getException().getMessage(), Toast.LENGTH_LONG).show();
79                 }
80                 else {
81                     Bundle bundle = new Bundle();
82                     bundle.putString("email", emailUser);
83                     bundle.putString("pass", passwordUser);
84                     startActivity(new Intent( packageContext: LoginActivity.this,
85                         MainActivity.class).putExtra( name: "emailpass", bundle));
86                     finish();
87                 }
88             });
89         }
90     });
91 }
92 }
93 }

```

16. Selanjutnya kita melakukan edit pada **activity\_main.xml** seperti dibawah ini

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <androidx.constraintlayout.widget.ConstraintLayout
3      xmlns:android="http://schemas.android.com/apk/res/android"
4      xmlns:app="http://schemas.android.com/apk/res-auto"
5      xmlns:tools="http://schemas.android.com/tools"
6      android:layout_width="match_parent"
7      android:layout_height="match_parent"
8      tools:context=".MainActivity">
9
10     <TextView
11         android:id="@+id/tv_user"
12         android:layout_width="wrap_content"
13         android:layout_height="wrap_content"
14         android:text="Hello World!"
15         app:layout_constraintBottom_toBottomOf="parent"
16         app:layout_constraintLeft_toLeftOf="parent"
17         app:layout_constraintRight_toRightOf="parent"
18         app:layout_constraintTop_toTopOf="parent" />
19
20 </androidx.constraintlayout.widget.ConstraintLayout>

```

17. Jika sudah buka **MainActivity.java** lalu edit seperti dibawah ini

```

1 package com.odhitya.loginregisterapps;
2
3 import ...
4
5
6
7
8
9
10 public class MainActivity extends AppCompatActivity {
11
12     private FirebaseAuth auth;
13
14     @Override
15     protected void onCreate(Bundle savedInstanceState) {
16         super.onCreate(savedInstanceState);
17         setContentView(R.layout.activity_main);
18
19         Bundle bundle = getIntent().getBundleExtra( name: "emailpass");
20         String email = bundle.getString( key: "email");
21         String password = bundle.getString( key: "pass");
22
23         auth = FirebaseAuth.getInstance();
24         TextView tvUser = findViewById(R.id.tv_user);
25         tvUser.setText(email+" "+password);
26     }
27
28     @Override
29     protected void onPause() {
30         super.onPause();
31         auth.signOut();
32     }
33
34 }

```

18. Buka **AndroidManifest.xml** lalu lakukan edit seperti dibawah ini

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3     package="com.odhitya.loginregisterapps">
4
5     <uses-permission android:name="android.permission.INTERNET"/>
6
7     <application
8         android:allowBackup="true"
9         android:icon="@mipmap/ic_launcher"
10        android:label="@string/app_name"
11        android:roundIcon="@mipmap/ic_launcher_round"
12        android:supportRtl="true"
13        android:theme="@style/AppTheme">
14         <activity android:name=".LoginActivity">
15             <intent-filter>
16                 <action android:name="android.intent.action.MAIN" />
17
18                 <category android:name="android.intent.category.LAUNCHER" />
19             </intent-filter>
20         </activity>
21         <activity android:name=".MainActivity" />
22         <activity android:name=".RegisterActivity"/>
23     </application>
24
25 </manifest>

```

19. Jalankan aplikasi serta lihat pada halaman firebase maka akan terlihat user yang telah melakukan authentication.

## TUGAS

1. Buatlah aplikasi firebase authentication dimana setelah melakukan register dan login, masuk ke halaman isi biodata dan setelah mengisi biodata masuk ke halaman selanjutnya yang berisi seluruh informasi biodata yang telah dimasukkan (intent dengan data).

\*\*\* Selamat Mengerjakan \*\*\*

\*\*\* Tetap Semangat \*\*\*