

# android

~~8월~~ 6일 만에  
배워보기



<https://github.com/ye0jun/AndroidStudy>



## Android day #3

ye0jun@naver.com

### Introduce

### Learn

### Do it!

- Develop Language - JAVA
- Goal - 지도 기반 메모 어플리케이션 제작
- 수업 목표 교육 및 실습 / 어플리케이션에 적용
  
- #1 - 안드로이드 레이아웃의 이해 및 기본 컴포넌트 활용
- #2 - Custom View 제작
- #3 - 안드로이드 라이브러리 사용방법 / Activity 생성 및 전환 / +@Fragment
- #4 - 안드로이드 네트워크
- #5 - API 활용 및 데이터 처리
- #6 - 안드로이드 데이터베이스 활용



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# 안드로이드 라이브러리

라이브러리는 이미 만들어져있는 모듈을 가져와서  
어플리케이션에 적용함으로써 개발을 쉽게 할 수 있게 만들어준다.



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# 안드로이드 라이브러리

빌드 도구

Ant > Maven > **Gradle**

600명의 엔지니어가 1년동안 1분걸리는 빌드를 매주 42번 빌드를 진행할 때 들어가는 비용 ?

$600 \text{ engineers} * \$1.42/\text{minutes} * 42 \text{ builds/week} * 44 \text{ work weeks/year} = \$1,600,000/\text{year}$

이때 빌드 속도가 90% 빨라진다면 ?

Gradle은 Maven보다 최대 100배 빠르다.



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# 안드로이드 라이브러리

Butter Knife  
Picasso / Glide  
Google

- .
- .
- .

<https://android-arsenal.com/>

[https://github.com/  
ye0jun/AndroidStudy](https://github.com/ye0jun/AndroidStudy)



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# Butter Knife

```
dependencies {
    compile 'com.jakewharton:butterknife:8.8.1'
    annotationProcessor 'com.jakewharton:butterknife-compiler:8.8.1'
}
```

```
class ExampleActivity extends Activity {
    @BindView(R.id.user) EditText username;
    @BindView(R.id.pass) EditText password;

    @BindString(R.string.login_error) String loginErrorMessage;

    @OnClick(R.id.submit) void submit() {
        // TODO call server...
    }

    @Override public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.simple_activity);
        ButterKnife.bind(this);
        // TODO Use fields...
    }
}
```



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# Glide

```
dependencies {  
    implementation 'com.github.bumptech.glide:glide:4.5.0'  
    annotationProcessor 'com.github.bumptech.glide:compiler:4.5.0'  
}
```

```
FATAL EXCEPTION: main  
Process: com.example.yeojun.practice, PID: 32074  
java.lang.OutOfMemoryError: Failed to allocate a 1074258444 byte allocation  
    at dalvik.system.VMRuntime.newNonMovableArray(Native Method)  
    at android.graphics.BitmapFactory.nativeDecodeAsset(Native Method)  
    at android.graphics.BitmapFactory.decodeStream(BitmapFactory.java:700)  
    at android.graphics.BitmapFactory.decodeResourceStream(BitmapFactory.java:442)  
    at android.graphics.drawable.Drawable.createFromResourceStream(Drawable.  
    at android.content.res.ResourcesImpl.loadDrawableForCookie(ResourcesImpl.  
    at android.content.res.ResourcesImpl.loadDrawable(ResourcesImpl.java:621)  
    at android.content.res.Resources.getDrawable(Resources.java:611) (R...)
```



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# Glide

```
Glide.with().load().into();
```

```
Glide.with().load().apply().into();
```

```
RequestOptions options = new RequestOptions();
options.centerCrop();
options.circleCrop();
```

<http://bumptech.github.io/glide/javadocs/400/com/bumptech/glide/request/RequestOptions.html>



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# Glide

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# Google Maps for Android

android google map



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# Google Maps for Android

## 시작하기

"키 가져오기"를 클릭하여 Google API Console에 프로젝트를 만들고, Google Maps Android API를 활성화하고 API 키를 가져옵니다. 그런 다음 관련 [문서](#)를 읽고 개발을 시작합니다.

1

키 가져오기

2

개발 시작

## Enable Google Maps Android API

Select or create project

CANCEL

NEXT



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# Google Maps for Android

You're all set!

You're ready to start developing with Google Maps Android API

YOUR API KEY

AlzaSyBAYHxETZ57DfEBY6utzpqW-s747H2At70



*i* To improve your app's security, restrict this key's usage in the [API Console](#).

DONE



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# Google Maps for Android

manifests에 발급받은 API키 추가

```
<meta-data  
    android:name="com.google.android.geo.API_KEY"  
    android:value="발급받은 KEY 값" />
```

gradle dependencies에 추가

```
implementation 'com.google.android.gms:play-services-maps:+'
```



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# Google Maps for Android

```
<fragment 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:id="@+id/map"  
          tools:context=".MapsActivity"  
          android:name="com.google.android.gms.maps.SupportMapFragment" />
```



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# Google Maps for Android

```
public class MainActivity extends FragmentActivity implements OnMapReadyCallback {  
  
    private GoogleMap mMap;  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
  
        SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()  
            .findFragmentById(R.id.map);  
        mapFragment.getMapAsync(this);  
  
    }  
  
    @Override  
    public void onMapReady(GoogleMap googleMap) {  
        mMap = googleMap;  
  
        // Add a marker in Sydney, Australia, and move the camera.  
        LatLng sydney = new LatLng(-34, 151);  
        mMap.addMarker(new MarkerOptions().position(sydney).title("Marker in Sydney"));  
        mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney));  
  
    }  
}
```



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# Google Maps for Android

## LatLng

### Field Summary

public final double `latitude`      Latitude, in degrees.

public final double `longitude`      Longitude, in degrees.



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# Google Maps for Android

## addMarker : 새로운 마커를 추가



```
mMap.addMarker(new MarkerOptions().position(sydney).title("Marker in Sydney"));
```

```
MarkerOptions.icon(BitmapDescriptorFactory.fromResource(리소스ID))
    .position(latLng)
    .title("문자열")
    .snippet("문자열")
```

## moveCamera : 카메라를 지정한 위치로 이동



```
mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney));
```



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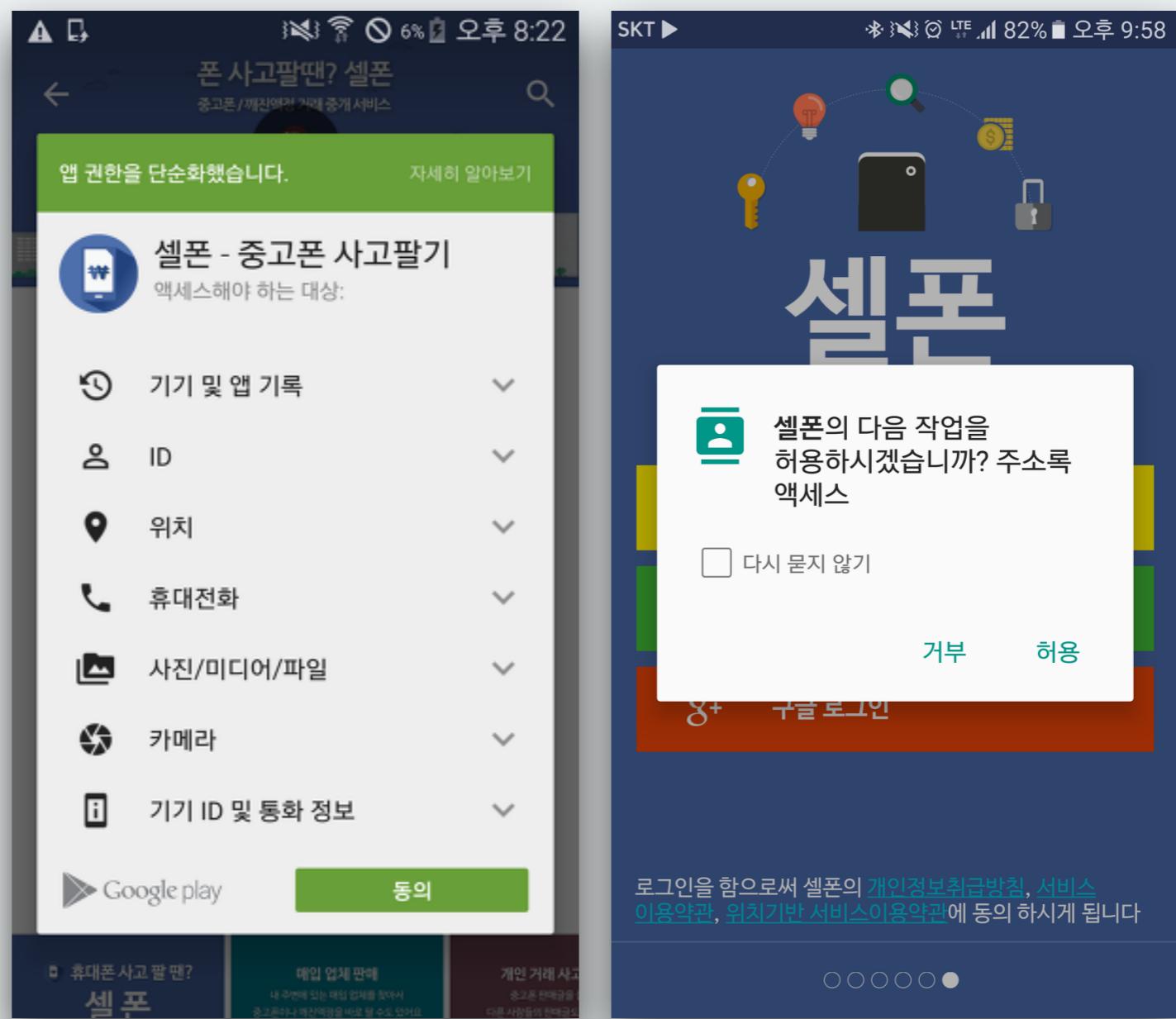
Do it!

[https://github.com/  
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# Google Maps for Android

현재 자신의 위치 찾기

안드로이드 권한 요청 : 6.0(Marshmallow)





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# Google Maps for Android

현재 자신의 위치 찾기

## Normal Permission / Dangerous Permission

권한 그룹	권한
CALENDAR	<ul style="list-style-type: none"><li>• READ_CALENDAR</li><li>• WRITE_CALENDAR</li></ul>
CAMERA	<ul style="list-style-type: none"><li>• CAMERA</li></ul>
CONTACTS	<ul style="list-style-type: none"><li>• READ_CONTACTS</li><li>• WRITE_CONTACTS</li><li>• GET_ACCOUNTS</li></ul>
LOCATION	<ul style="list-style-type: none"><li>• ACCESS_FINE_LOCATION</li><li>• ACCESS_COARSE_LOCATION</li></ul>
MICROPHONE	<ul style="list-style-type: none"><li>• RECORD_AUDIO</li></ul>
PHONE	<ul style="list-style-type: none"><li>• READ_PHONE_STATE</li><li>• CALL_PHONE</li><li>• READ_CALL_LOG</li><li>• WRITE_CALL_LOG</li><li>• ADD_VOICEMAIL</li><li>• USE_SIP</li><li>• PROCESS_OUTGOING_CALLS</li></ul>
SENSORS	<ul style="list-style-type: none"><li>• BODY_SENSORS</li></ul>
SMS	<ul style="list-style-type: none"><li>• SEND_SMS</li><li>• RECEIVE_SMS</li></ul>

<https://developer.android.com/guide/topics/security/permissions.html?hl=ko#normal-dangerous>



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# Google Maps for Android

현재 자신의 위치 찾기

```
<uses-permission android:name="android.permission.권한(퍼미션)이름" />
```

```
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
```

```
ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION)
```

PackageManager.PERMISSION\_GRANTED  
PackageManager.PERMISSION\_DENIED



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# Google Maps for Android

현재 자신의 위치 찾기

```
ActivityCompat.requestPermissions(this,  
        new String[]{android.Manifest.permission.ACCESS_FINE_LOCATION}, 1);
```

```
private void setPermission(){  
    if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION)  
        != PackageManager.PERMISSION_GRANTED &&  
        ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_COARSE_LOCATION)  
        != PackageManager.PERMISSION_GRANTED) {  
  
        ActivityCompat.requestPermissions(this,  
                new String[]{android.Manifest.permission.ACCESS_FINE_LOCATION}, 1);  
        ActivityCompat.requestPermissions(this,  
                new String[]{Manifest.permission.ACCESS_COARSE_LOCATION}, 1);  
        return;  
    }  
}
```



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# Google Maps for Android

현재 자신의 위치 찾기

```
googleMap.setMyLocationEnabled(true);  
googleMap.getUiSettings().setMyLocationButtonEnabled(true);
```



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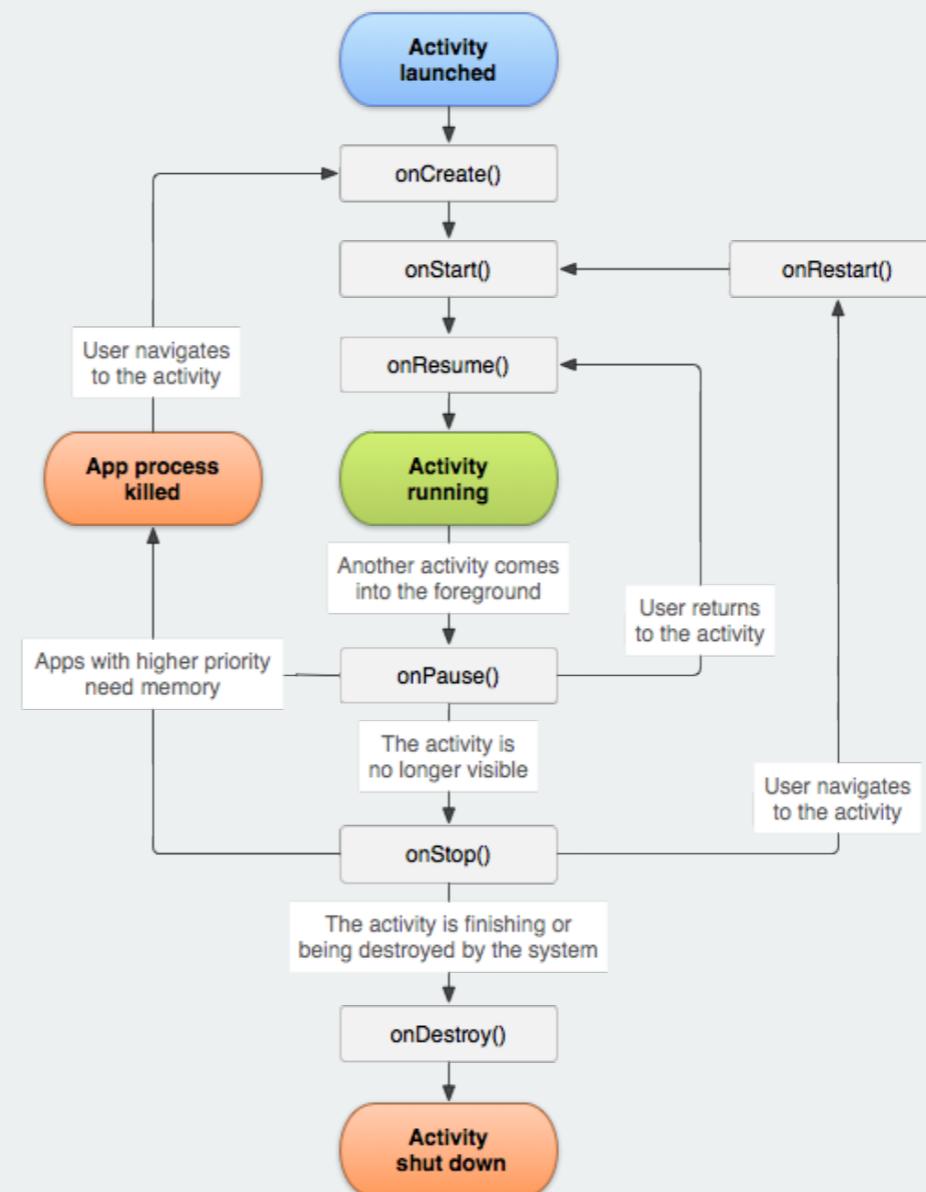
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# Android Activity

## **Activity Service Content Provider Broadcast Receiver**





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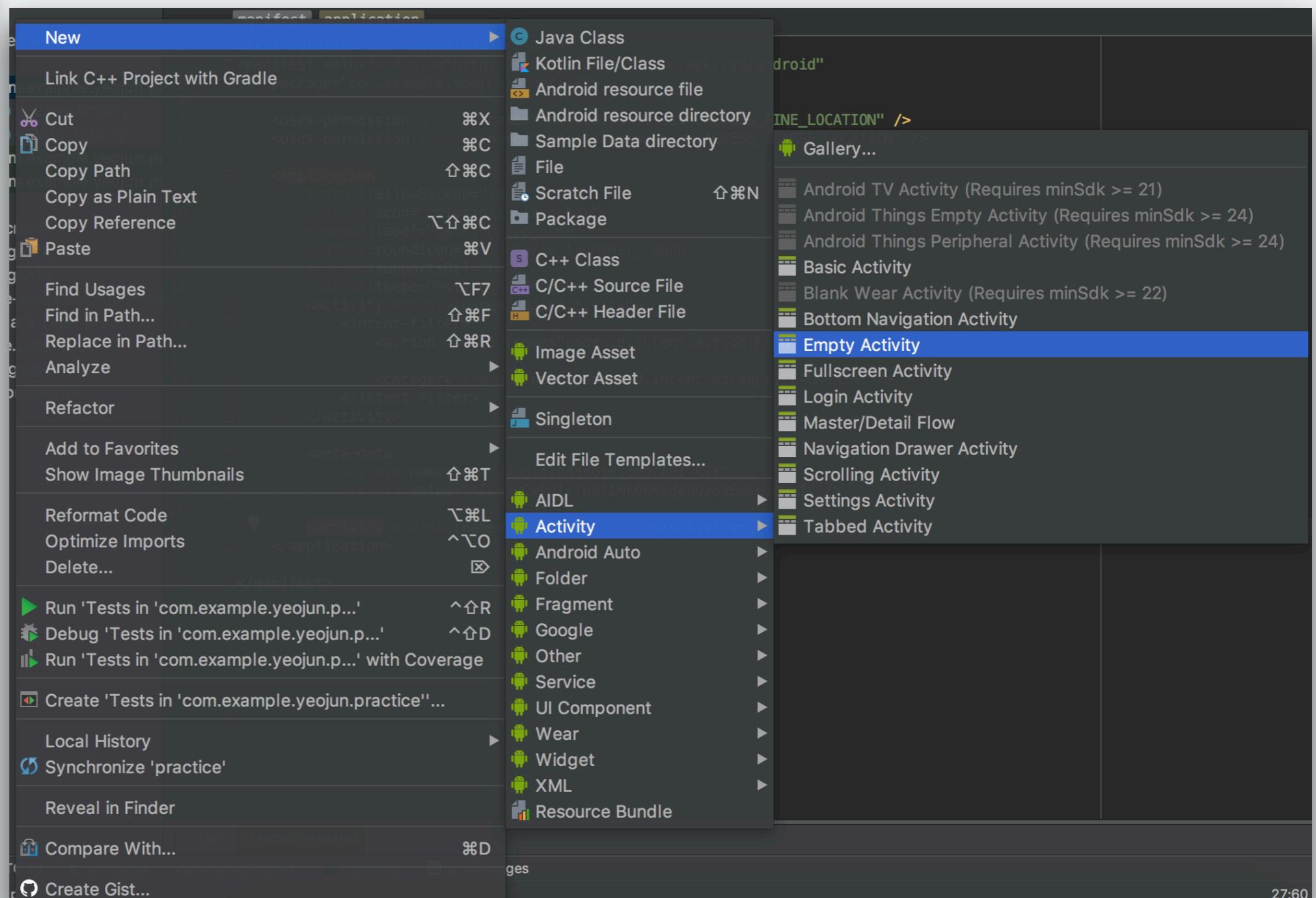
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# Android Activity



27:60



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# Android Activity 전환

```
Intent intent = new Intent(this,ExtraActivity.class);  
startActivity(intent);
```

```
intent.putExtra("key",value);  
intent.putExtra("user_id","ye0jun");  
intent.putExtra("user_level",200);
```

```
Intent intent = getIntent();  
String username = intent.getStringExtra("user_id");  
int birthday = intent.getIntExtra("user_level",0);
```



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# Timer

```
TimerTask mTask;
Timer mTimer;

mTask = new TimerTask() {
    @Override
    public void run() {
        Intent intent = new Intent(getApplicationContext(), MainActivity.class);
        startActivity(intent);
    }
};

mTimer = new Timer();
mTimer.schedule(mTask, 2000);
```



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