

# android

~~8월~~ 6일 만에  
배워보기





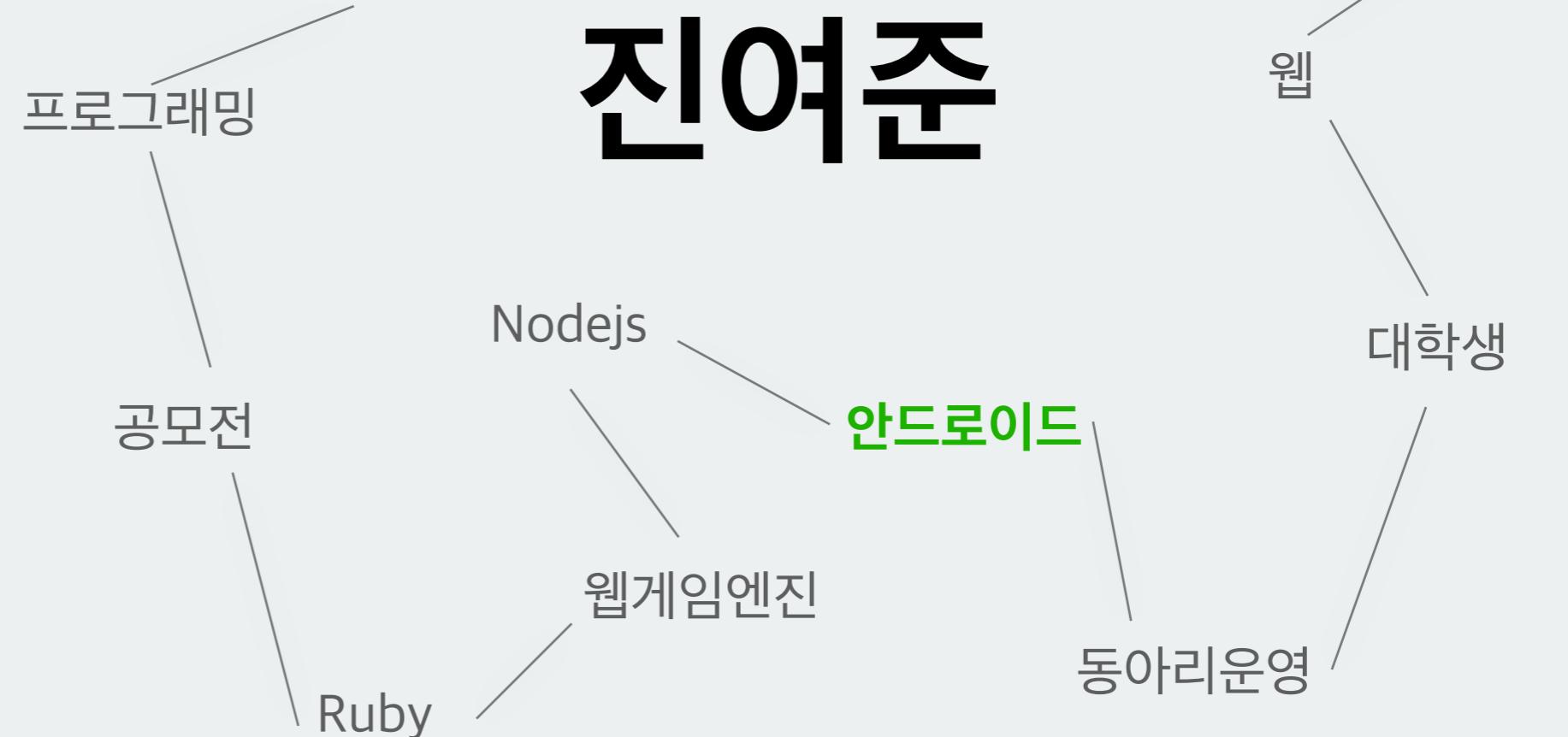
## Android day #1

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Introduce

Learn

Do it!





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### 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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안드로이드에서 화면을 구성하는 요소

레이아웃 ( Layout )

위젯 ( Widget )



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# 위젯이란?

사용자의 입력을 받거나 화면에 데이터를 표시해주는 것들



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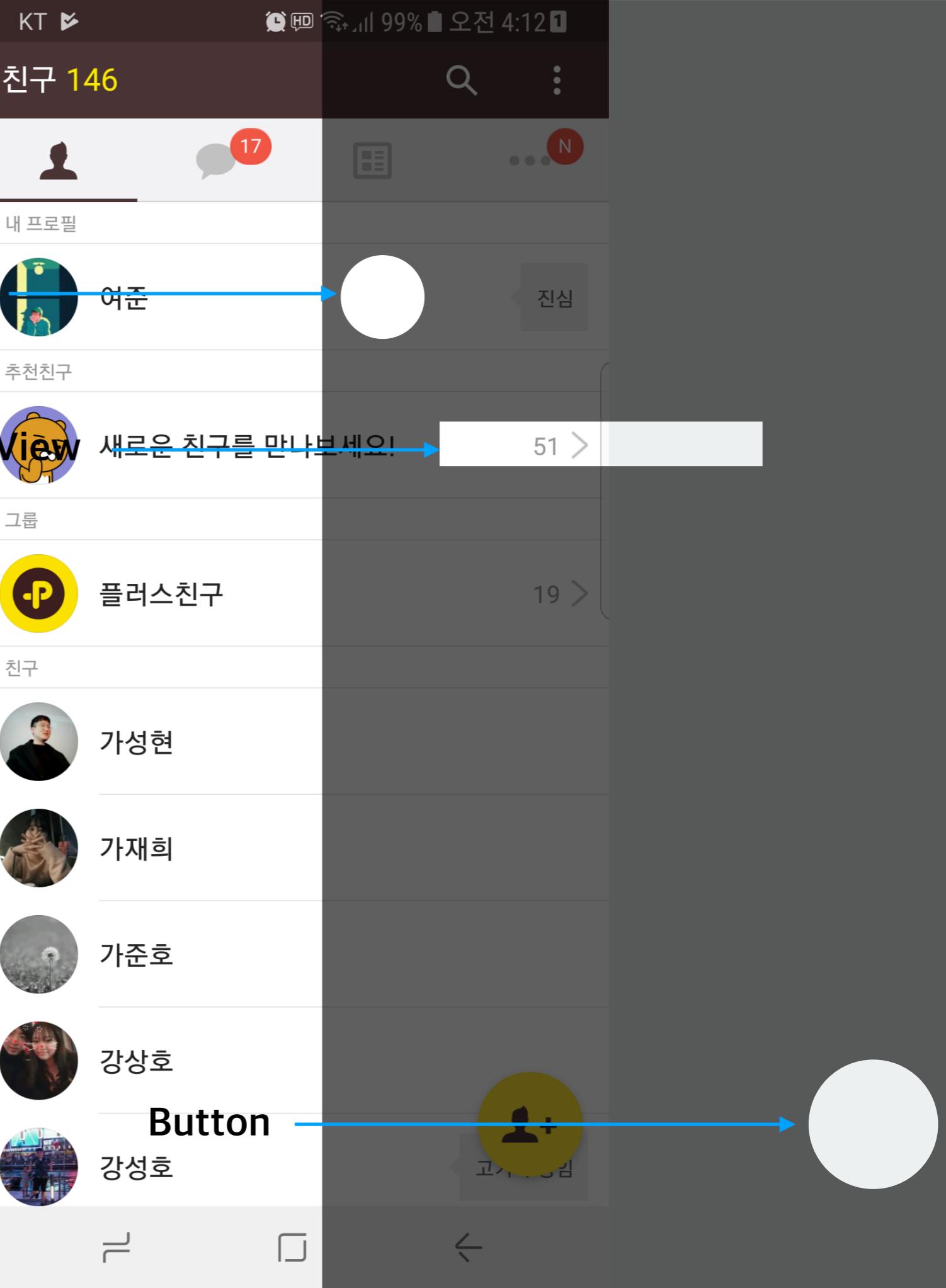
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ImageView





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## 레이아웃이란?

위젯들을 어떠한 방식으로 화면에 배치해줄지를 결정해주는  
‘컨테이너’ 역할을 함



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### 뷰의 기초 속성

UI 구성을 할 때 다양한 속성을 지정할 수 있으며,  
속성들은 뷰에 따라 다름

모든 뷰에 공통으로 지정할 수 있는 중요 속성들을 알아보자



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## 뷰의 기초 속성 - ID 속성

```
<TextView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="hello" />
```

```
<TextView  
    android:id="@+id/myText"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="hello" />
```



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# 뷰의 기초 속성 - layout\_width/height

```
<TextView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="hello" />
```

- match\_parent
- fill\_parent
- wrap\_content
- 100dp



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# 뷰의 기초 속성 - margin / padding

Margin : 뷰와 뷰 사이의 간격

Padding : 내용과 뷰의 테두리 간의 간격



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# 뷰의 기초 속성 - margin / padding

```
<Button  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="button1"  
    android:padding="24dp"  
/>  
  
<Button  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="button2"  
    android:layout_marginLeft="16dp"  
/>
```



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### 뷰의 기초 속성 - clickable

clickable의 기본값은 ‘true’

TextView, ImageView는 ‘false’



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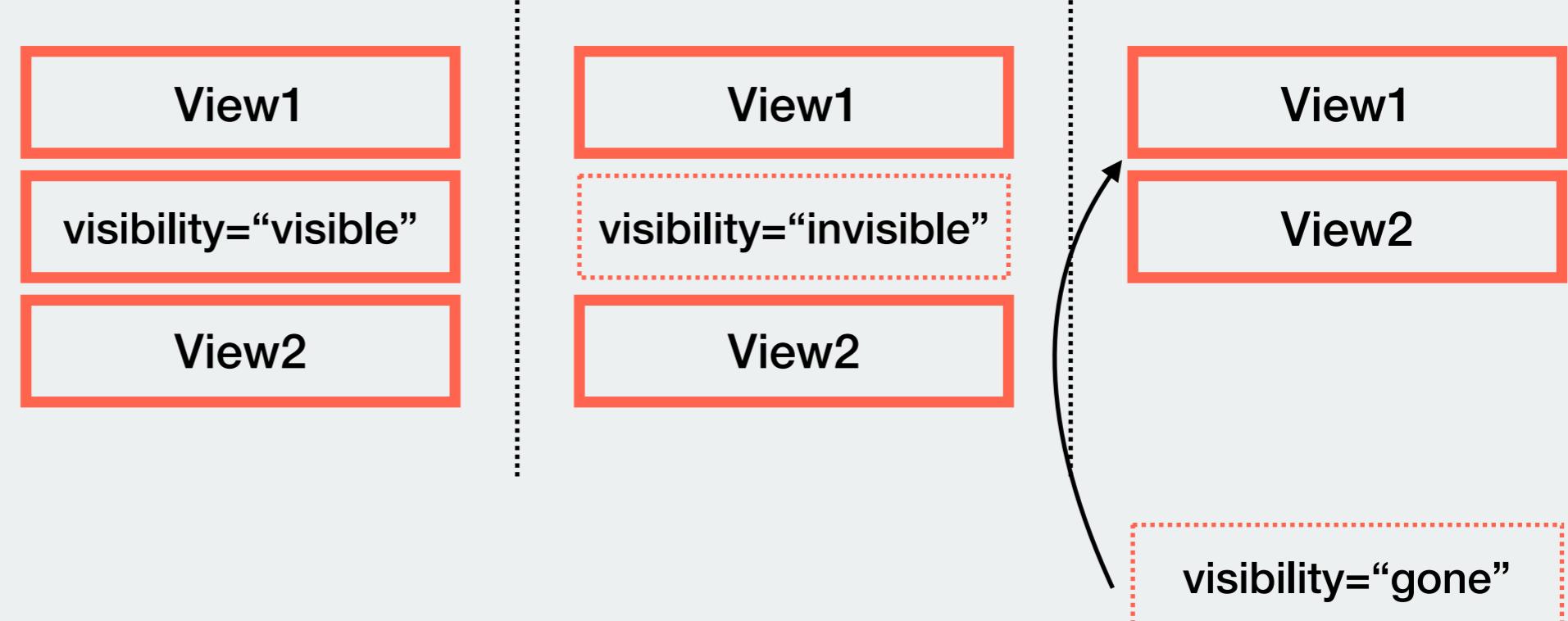
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## 뷰의 기초 속성 - visibility

- visible
- invisible
- gone





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- **LinearLayout (vertical, horizontal)**
- **RelativeLayout**
- **TableLayout**
- **FrameLayout**
- **ListView / GridLayout**
- **ConstraintLayout (new)**



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# 안드로이드의 View는 XML로 만들어진다

```
<?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"
    android:orientation="vertical" >
    <TextView android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello, I am a TextView" />
    <Button android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello, I am a Button" />
</LinearLayout>
```



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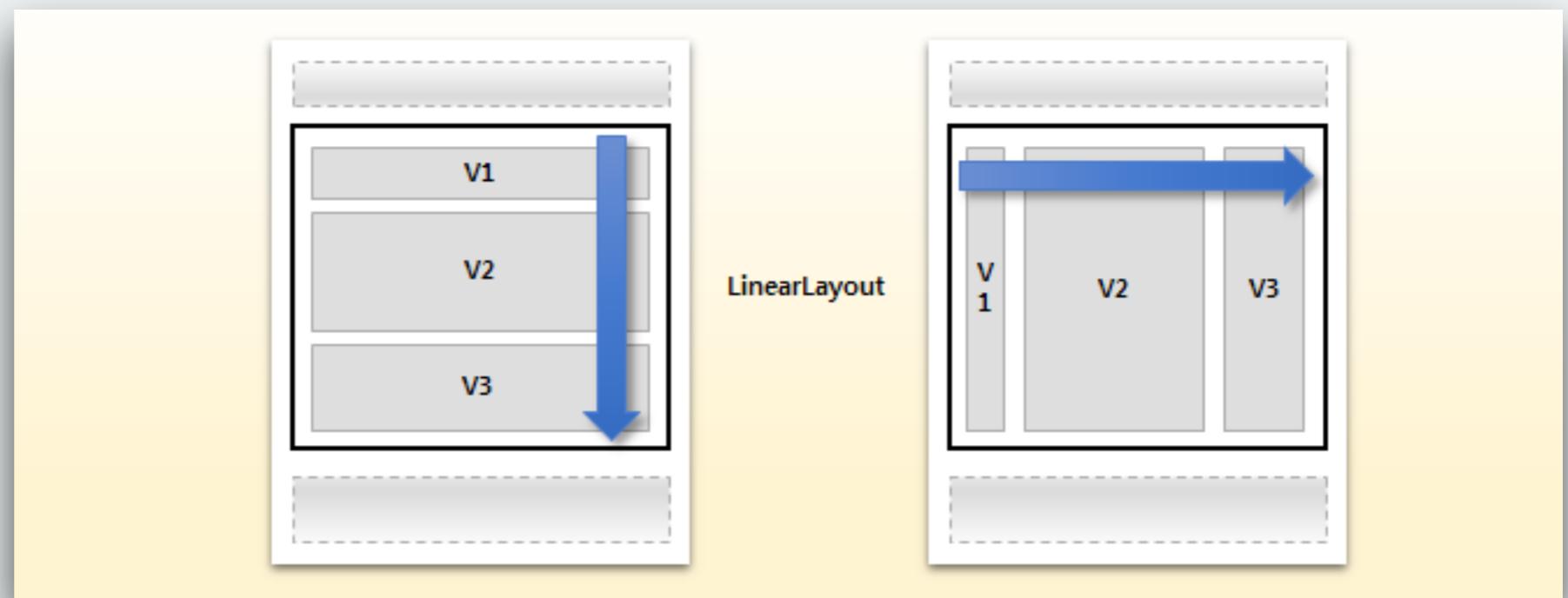
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# LinearLayout

여러 위젯들을 가로 또는 세로 방향으로 나열



android:orientation = “vertical” | “horizontal”  
android:layout\_weight = “1,2,3···N”



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# RelativeLayout

위젯들이 서로 상대적으로 배치된다





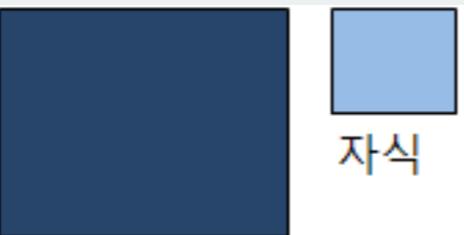
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android:layout\_alignParentTop



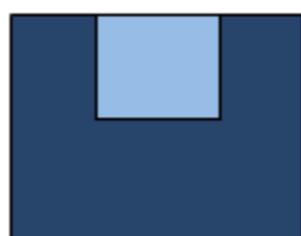
android:layout\_alignParentBottom



android:layout\_alignParentLeft



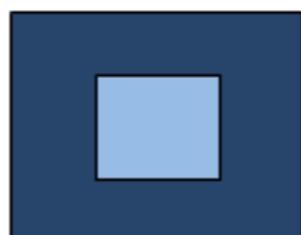
android:layout\_alignParentRight



android:layout\_centerHorizontal



android:layout\_centerVertical



android:layout\_centerInParent



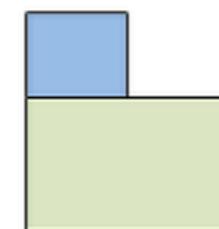
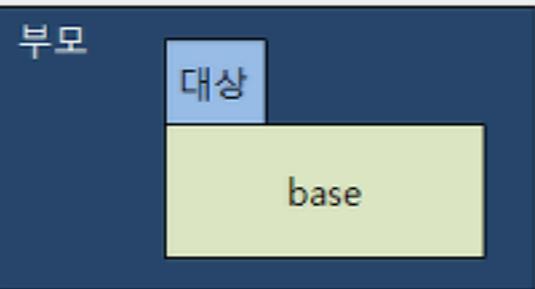
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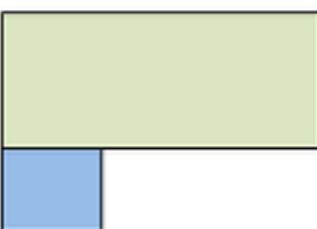
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`android:layout_above="base"`



`android:layout_below="base"`



`android:layout_alignTop="base"`



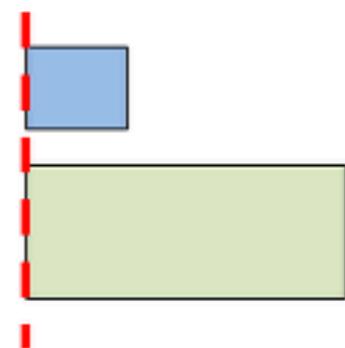
`android:layout_toLeftOf="base"`



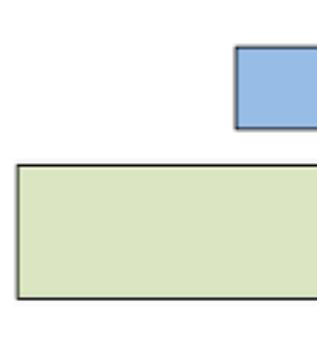
`android:layout_toRightOf="base"`



`android:layout_alignBottom="base"`



`android:layout_alignLeft="base"`



`android:layout_alignRight="base"`



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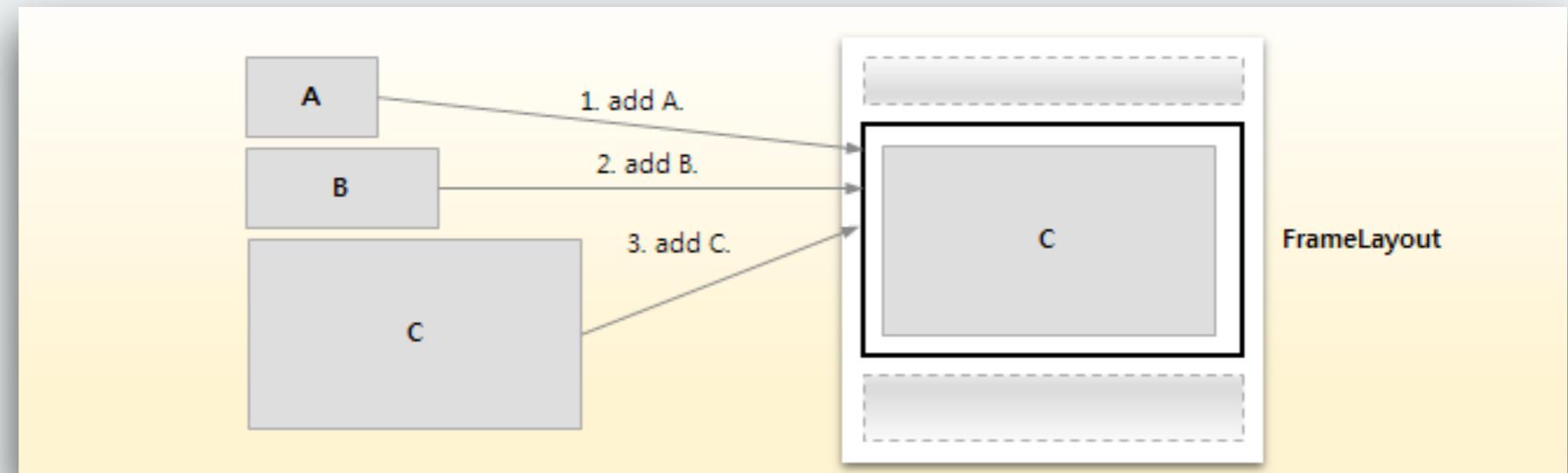
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# FrameLayout

자식들을 겹쳐서 표현이 가능함





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# ConstraintLayout

안드로이드 View가 화면에 나타나는 과정

측정 (Measurement)  
레이아웃(Layout)  
그리기(Draw)

```
<RelativeLayout>
    <ImageView/>
    <ImageView/>
    <RelativeLayout>
        <TextView/>
        <LinearLayout>
            <TextView/>
            <RelativeLayout>
                <EditText/>
            </RelativeLayout>
        </LinearLayout>
        <LinearLayout>
            <TextView/>
            <RelativeLayout>
                <EditText/>
            </RelativeLayout>
        </LinearLayout>
        <TextV
```

VS.

```
<ConstraintLayout>
    <ImageView/>
    <ImageView/>
    <RelativeLayout>
        <TextView/>
        <LinearLayout>
            <TextView/>
            <RelativeLayout>
                <EditText/>
            </RelativeLayout>
        </LinearLayout>
        <LinearLayout>
            <TextView/>
            <RelativeLayout>
                <EditText/>
            </RelativeLayout>
        </LinearLayout>
        <TextV
```



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Do it!

- **TextView**
- **EditText**
- **ImageView**
- **Button**
- **RadioButton**
- **CheckBox**



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# TextView

**text : 화면에 출력할 문자열을 지정하는 속성**

- android:text="hello world"
- android:text="@string/hello"

**textStyle : normal(default),bold italic**

**textColor : 문자열 색상을 16진수 RGB포맷 #FF0000**

**textSize : 화면에 출력할 문자열 크기 지정**

**maxLines : 특정 줄까지만 출력**

**ellipsize : maxLines로 지정한 줄이 넘어갔을때 ... 표시**



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# EditText

**lines** : 처음 화면에 보일 때부터 특정 줄만큼 보이게 할 때 사용

**maxLines** : 최대 늘어나는 줄 수 지정

**inputType** :

Constant	Value	Description
date	14	For entering a date. Corresponds to <a href="#">TYPE_CLASS_DATETIME   TYPE_DATETIME_VARIATION_DATE</a> .
datetime	4	For entering a date and time. Corresponds to <a href="#">TYPE_CLASS_DATETIME   TYPE_DATETIME_VARIATION_NORMAL</a> .
none	0	There is no content type. The text is not editable.
number	2	A numeric only field. Corresponds to <a href="#">TYPE_CLASS_NUMBER   TYPE_NUMBER_VARIATION_NORMAL</a> .
numberDecimal	2002	Can be combined with <a href="#">number</a> and its other options to allow a decimal (fractional) number. Corresponds to <a href="#">TYPE_CLASS_NUMBER   TYPE_NUMBER_FLAG_DECIMAL</a> .
numberPassword	12	A numeric password field. Corresponds to <a href="#">TYPE_CLASS_NUMBER   TYPE_NUMBER_VARIATION_PASSWORD</a> .
numberSigned	1002	Can be combined with <a href="#">number</a> and its other options to allow a signed number. Corresponds to <a href="#">TYPE_CLASS_NUMBER   TYPE_NUMBER_FLAG_SIGNED</a> .
phone	3	For entering a phone number. Corresponds to <a href="#">TYPE_CLASS_PHONE</a> .
text	1	Just plain old text. Corresponds to <a href="#">TYPE_CLASS_TEXT   TYPE_TEXT_VARIATION_NORMAL</a> .

[https://developer.android.com/reference/android/widget/TextView.html#attr\\_android:inputType](https://developer.android.com/reference/android/widget/TextView.html#attr_android:inputType)



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# ImageView

**src : 화면에 출력할 이미지를 지정하는 속성**

**maxWidth, maxHeight : 이미지의 최대 크기를 지정하는 속성**

**tint : 이미지 위에 다른 색상을 입힐 때 사용하는 속성**



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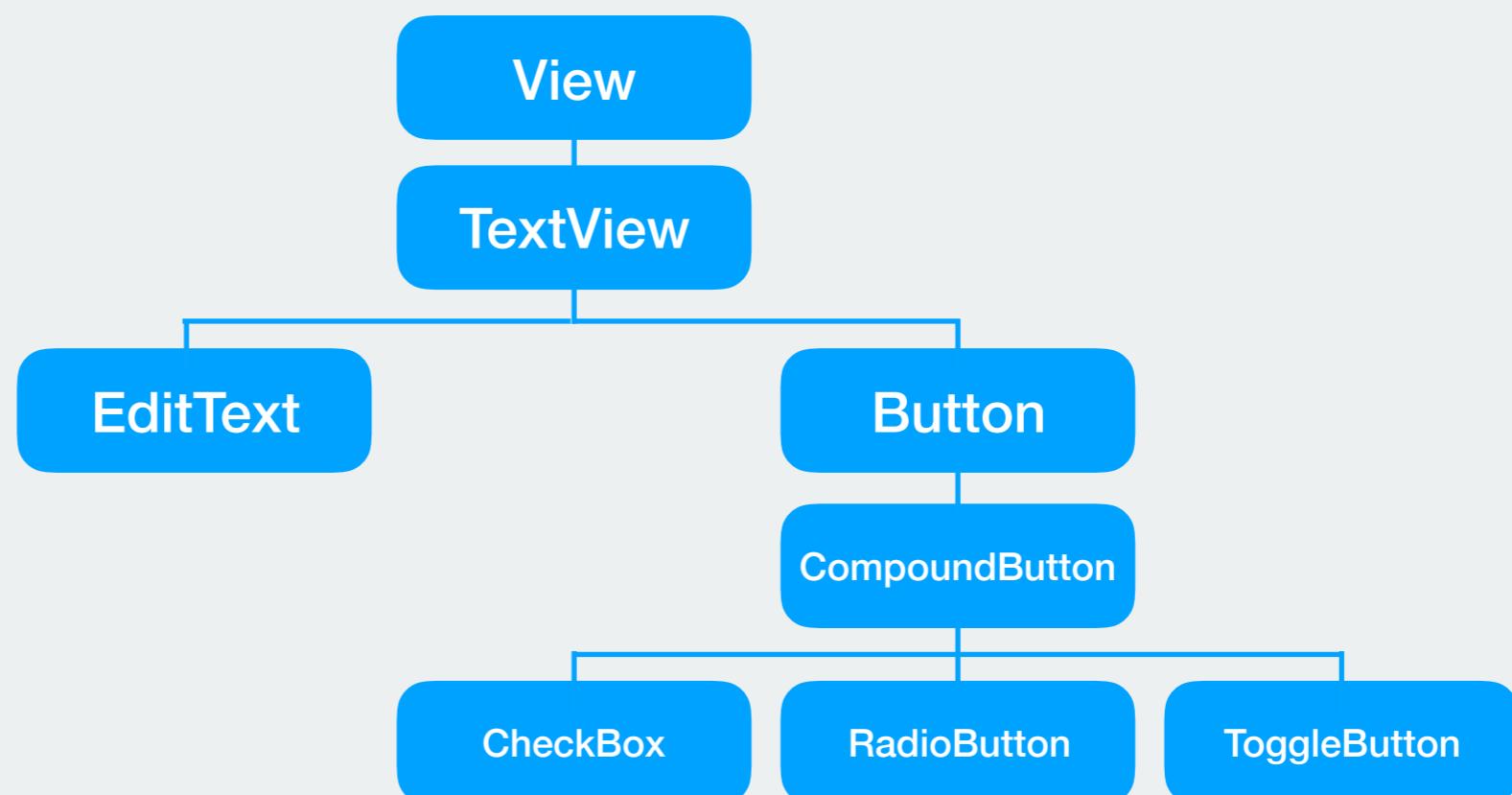
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# Button / CheckBox

TextView와 거의 동일





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# RadioButton

```
<RadioGroup  
    android:id="@+id/radioGround"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content">  
  
<RadioButton  
    android:id="@+id/radio1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="radio 1"/>  
  
<RadioButton  
    android:id="@+id/radio2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="radio 1"/>  
</RadioGroup>
```



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# 뷰 이벤트 처리

The image shows two side-by-side screenshots of the KakaoTalk contact list screen. Both screens have a dark theme and show a list of contacts. A yellow callout bubble with a person icon and a plus sign is overlaid on the bottom right of the left screen, indicating an event like a long press or tap. On the right screen, several circular icons are overlaid on specific contact entries: a QR code icon, a person icon, a square ID icon, a plus icon, and a red X icon. The top status bar on both screens shows signal strength, battery level (89%), and the time (2:13).

친구 149

친구 149

여준

여준

새로운 친구를 만나보세요! 48 >

새로운 친구를 만나보세요! 48 >

플러스친구 19 >

친구

가성현

가재희

가준호

강민석

강상호

QR코드

연락처로 추가

카카오톡 ID로 추가

추천친구

친구

가성현

가재희

가준호

강민석

강상호

X



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# 뷰 이벤트 처리 ?

방법 1 : 익명(Anonymous) 클래스를 생성해서 이벤트 리스너로 사용

방법 2 : 생성해 놓은 익명(Anonymous) 클래스를 이벤트 리스너로 사용



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# 뷰 이벤트 처리 ? - XML파일

```
<Button  
    android:id="@+id/myButton"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="hello" />
```



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# 뷰 이벤트 처리 ? - JAVA파일

```
Button myButton = (Button) findViewById(R.id.myButton);
```



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# 익명 클래스를 생성해서 이벤트 리스너로 사용

```
Button myButton = (Button) findViewById(R.id.myButton);  
  
myButton.setOnClickListener(new Button.OnClickListener() {  
    @Override  
    public void onClick(View view) {  
        //원하는 작업 코딩!  
    }  
});
```



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# 생성해 놓은 익명 클래스를 이벤트 리스너로 사용

```
Button.OnClickListener onClickListener = new Button.OnClickListener() {  
    @Override  
    public void onClick(View view) {  
        //원하는 작업 코딩!  
    }  
};  
  
myButton.setOnClickListener(onClickListener);
```



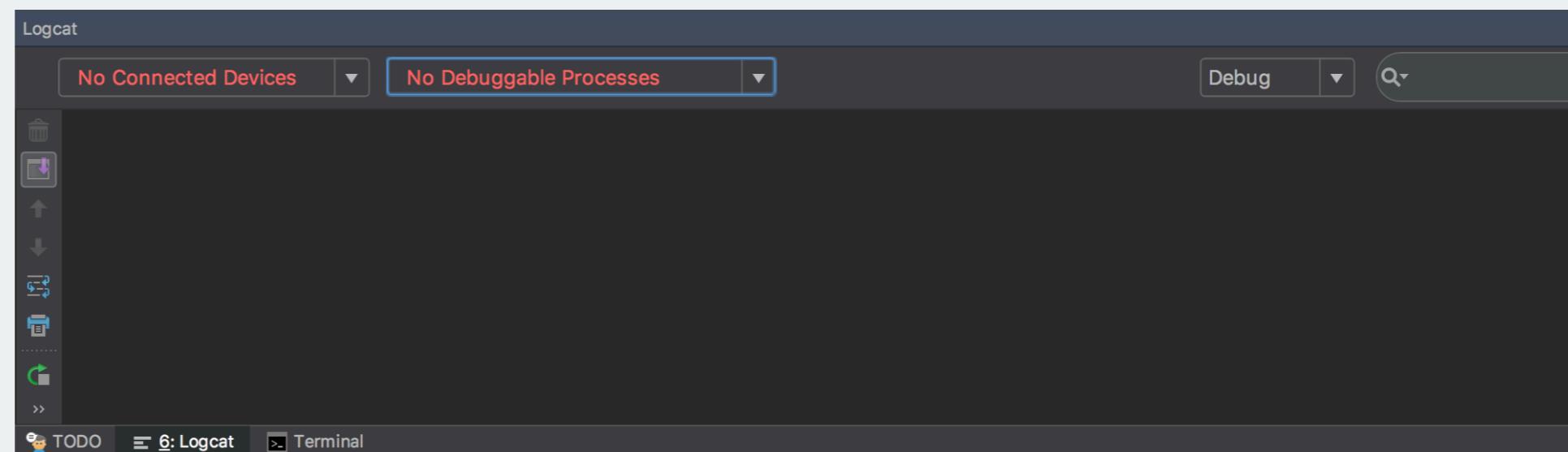
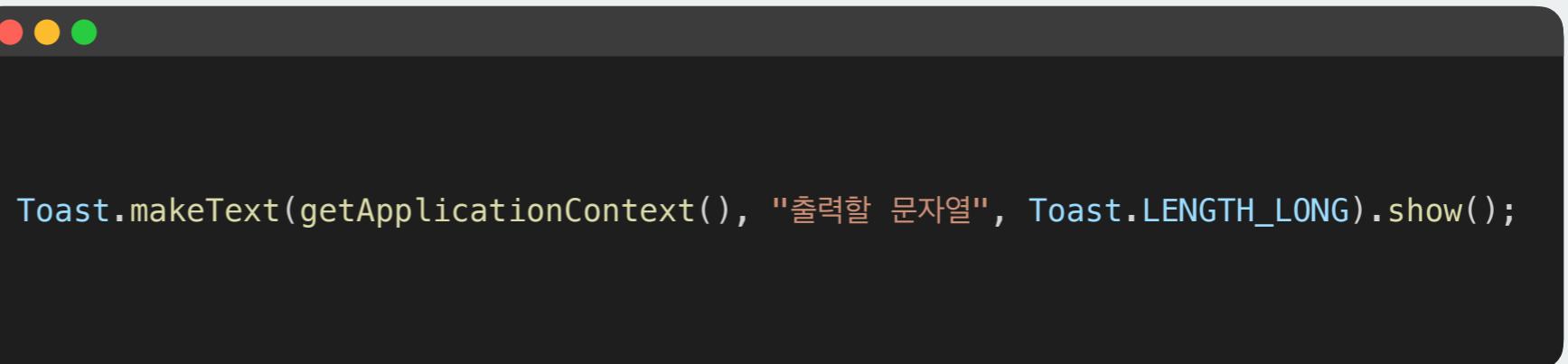
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The image shows a smartphone screen displaying a list of contacts. The top status bar shows signal strength, battery level (89%), and the time (2:13). The title bar says "친구 149". Below the title bar are icons for profile, message, and more. A red notification bubble with the letter "N" is visible on the more icon. The main list starts with "여준" (Yeo Jun) with a profile picture of a person in a green jacket. Below it is "추천친구" (Recommended Friend). The next item is "새로운 친구를 만나보세요!" (Meet new friends!) with a count of 48 and a right arrow. This is followed by "그룹" (Group). Then there is a section for "플러스친구" (Plus Friends) with a yellow circular icon containing a minus sign and a count of 19 with a right arrow. Below this is "친구" (Friends) with a list of three people: "가성현" (Gashenghyun) with a profile picture of a man, "가재희" (Gajaehee) with a profile picture of a glass of beer, and "가준호" (Gajunho) with a profile picture of a dandelion. At the bottom of the list is "강민석" (Kangminseok) with a blue profile picture of a person's head silhouette. The final item is "강상호" (Kang Sangho) with a profile picture of two people. A large yellow circular button with a black profile icon and a plus sign is located at the bottom right. The bottom navigation bar has three icons: a square, a rectangle, and a left arrow.

친구	프로필
여준	여준 (Profile picture)
추천친구	
새로운 친구를 만나보세요!	48 >
그룹	
플러스친구	19 >
친구	
가성현	가성현 (Profile picture)
가재희	가재희 (Profile picture)
가준호	가준호 (Profile picture)
강민석	강민석 (Profile picture)
강상호	강상호 (Profile picture)