4.1 Buttons and clickable images

Contents

- User interaction
- Buttons
- Clickable images
- Floating action button
- Common gestures

User interaction

Users expect to interact with apps

- Tapping or clicking, typing, using gestures, and talking
- Buttons perform actions
- Other UI elements enable data input and navigation

User interaction design

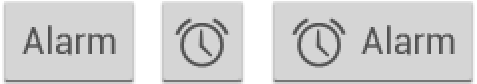
Important to be obvious, easy, and consistent:

- Think about how users will use your app
- Minimize steps
- Use UI elements that are easy to access, understand, use
- Follow Android best practices
- Meet user's expectations

Buttons

Button

- View that responds to tapping (clicking) or pressing
- Usually text or visuals indicate what will happen when tapped
- State: normal, focused, disabled, pressed, on/off



Responding to button taps

- *In your code*: Use `OnClickListener` event listener.
- *In XML*: use `android:onClick` attribute in the XML layout:

```
<Button
    android:id="@+id/button_send"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/button_send"
    android:onClick="sendMessage" />
```

android:onClick

Setting listener with onClick callback

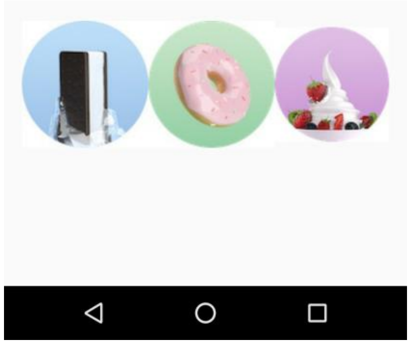
```
Button button = findViewById(R.id.button);

button.setOnClickListener(new View.OnClickListener() {
    public void onClick(View v) {
        // Do something in response to button click
    }
});
```

Clickable images

ImageView

- `ImageView` with `android:onClick` attribute
- Image for `ImageView` in **app>src>main>res>drawable** folder in project



Responding to ImageView taps

- *In your code*: Use `OnClickListener` event listener.
- *In XML*: use `android:onClick` attribute in the XML layout:

```
<ImageView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:src="@drawable/donut_circle"
      android:onClick="orderDonut"/>
```

android:onClick

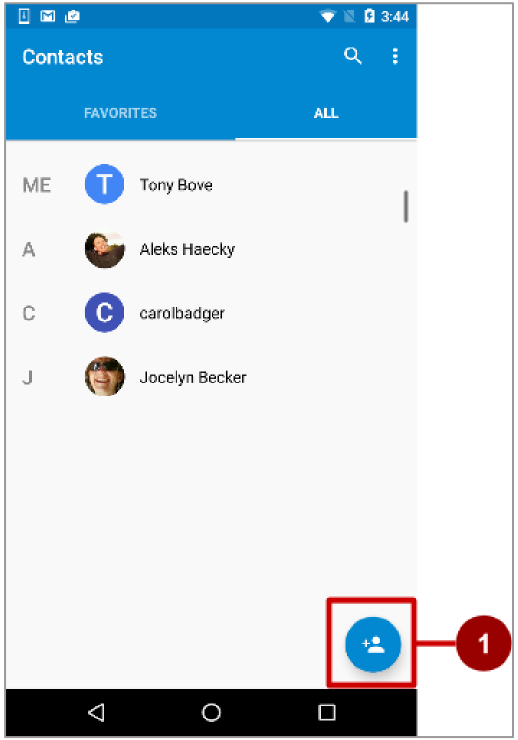
Floating action button

Floating Action Buttons (FAB)

- Raised, circular, floats above layout
- Primary or "promoted" action for a screen
- One per screen

For example:

Add Contact button in Contacts app



Using FABs

- Start with Basic Activity template
- Layout:

```
<android.support.design.widget.FloatingActionButton
        android:id="@+id/fab"
        android:layout_gravity="bottom|end"
        android:layout_margin="@dimen/fab_margin"
        android:src="@drawable/ic_fab_chat_button_white"

        .../>
```

FAB size

- 56 x 56 dp by default
- Set mini size (30 x 40 dp) with `app:fabSize` attribute:
  - `app:fabSize="mini"`
- Set to 56 x 56 dp (default):
  - `app:fabSize="normal"`

Common Gestures

Touch Gestures

Touch gestures include:

- long touch
- double-tap
- fling
- drag
- scroll
- pinch

Don’t depend on touch gestures for app's basic behavior!

Detect gestures

Classes and methods are available to help you handle gestures.

- GestureDetectorCompat class for common gestures
- MotionEvent class for motion events

Learn more

- Input Controls
- Drawable Resources
- Floating Action Button
- Radio Buttons
- Specifying the Input Method Type
- Handling Keyboard Input
- Text Fields
- Buttons
- Spinners
- Dialogs
- Fragments
- Input Events
- Pickers
- Using Touch Gestures
- Gestures design guide

What's Next?

- Concept Chapter: 4.1 Buttons and clickable images
- Practical: 4.1 Clickable images