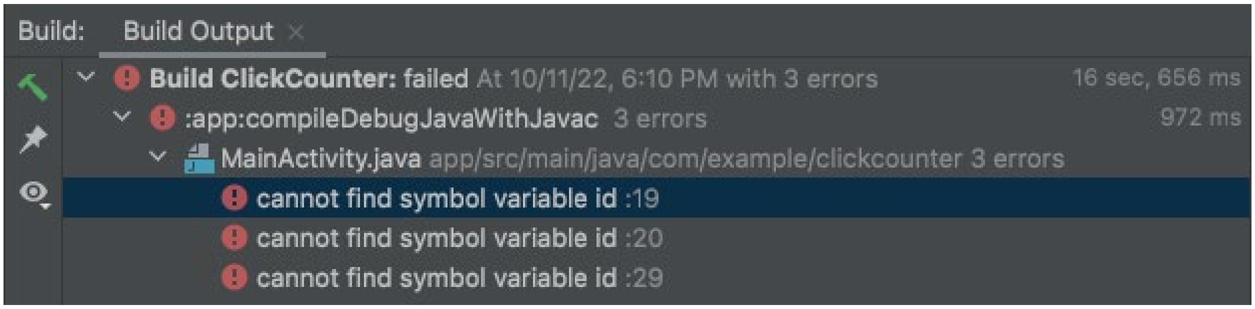
CLICK COUNTER LAB

For this lab, you will create the layout of an app that counts the number of times a button is pressed. Try and race your friends to see who can achieve the most clicks (or taps if played on an actual phone) in a minute!

PART 1: OPENING THE PROJECT

Open the provided project template and run the app (clicking on the "Run app" icon ▶ or "Debug app" icon 🐞 located in the menu near the top right-hand side of the Android Studio window).

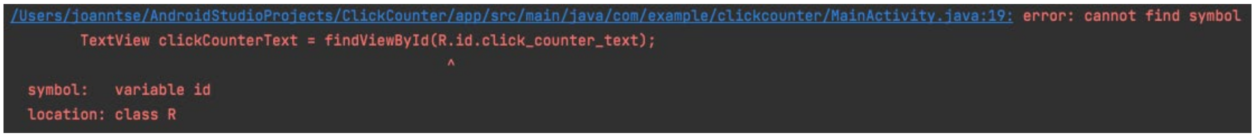
You will see that the app fails to build due to some errors in MainActivity.java:



```
Build:   Build Output ×
  ⌄ ! Build ClickCounter: failed At 10/11/22, 6:10 PM with 3 errors        16 sec, 656 ms
    ⌄ ! :app:compileDebugJavaWithJavac  3 errors                               972 ms
      ⌄ MainActivity.java app/src/main/java/com/example/clickcounter 3 errors
          ! cannot find symbol variable id :19
          ! cannot find symbol variable id :20
          ! cannot find symbol variable id :29
```

Click on the Build tab 🔨 Build in the menu located near the bottom of the Android Studio window if these errors do not automatically pop up.

Upon closer inspection, the errors are all similar, saying that the IDs "click_counter_text", "click_button", and "reset_button" the code in MainActivity.java is referring to are nonexistent.



```
/Users/joanntse/AndroidStudioProjects/ClickCounter/app/src/main/java/com/example/clickcounter/MainActivity.java:19: error: cannot find symbol
        TextView clickCounterText = findViewById(R.id.click_counter_text);
                                                   ^
  symbol:   variable id
  location: class R
```

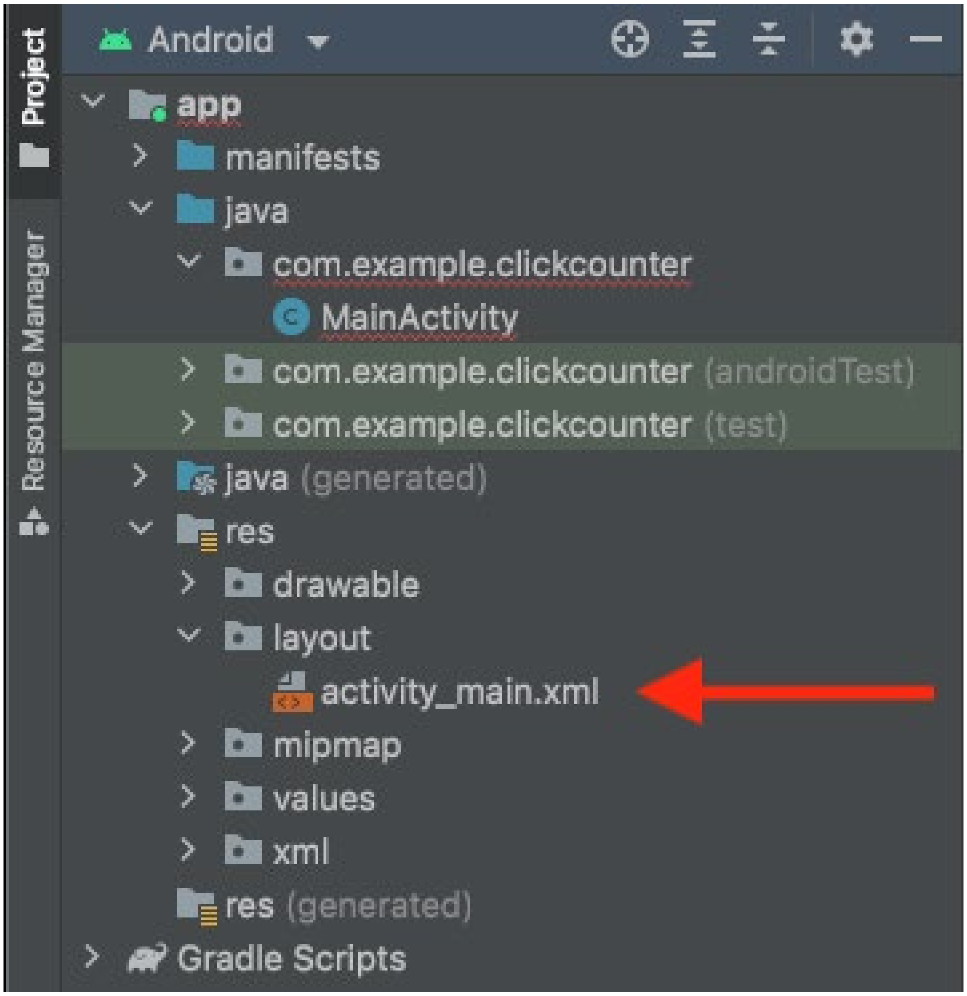
Why is this happening?

PART 2: CREATING THE LAYOUT

The IDs mentioned in the errors are nonexistent because they were never defined in any of the layout files. The code in MainActivity.java is referring to these IDs to dynamically set attributes for the various views associated with these IDs, but that cannot be possible if the views themselves do not exist.

***Note**: You will learn about programmatically setting attributes for views in a few weeks, but for now, just know that IDs are a useful resource in identifying views and modifying them.*

To address these errors, you will need to add UI components in the app and associate them with the IDs mentioned. Click on the "Project" tab on the left side of the Android Studio window to open up the Android project structure, then open the layout file "activity_main.xml" under app/res/layout folder.

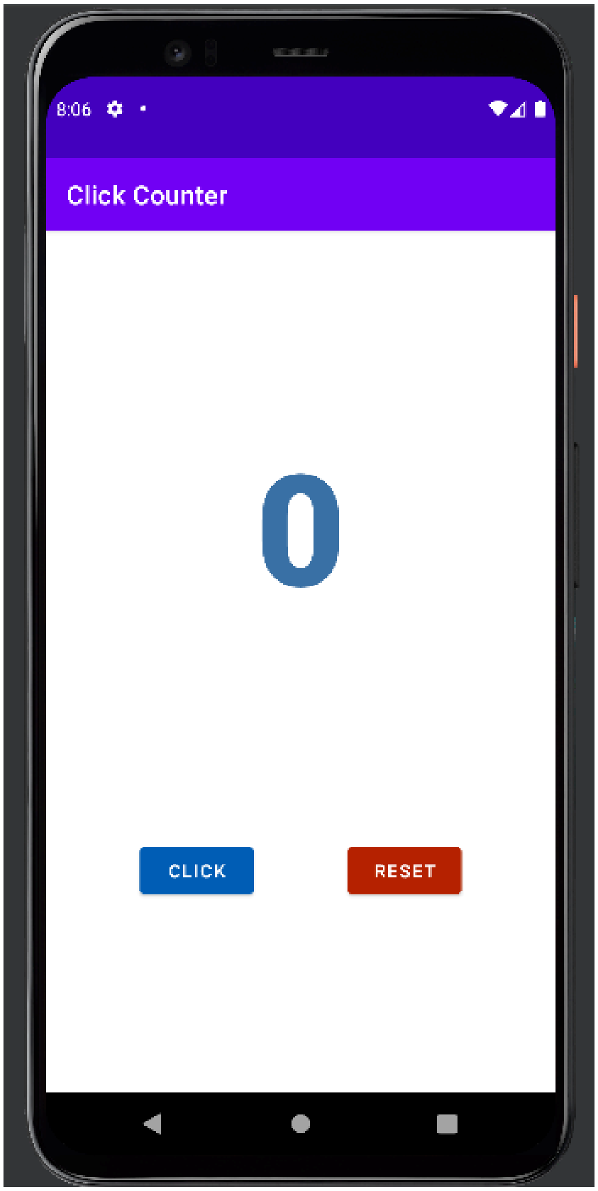


Here in “activity_main.xml”, define the layout of the Click Counter app. The layout should include:

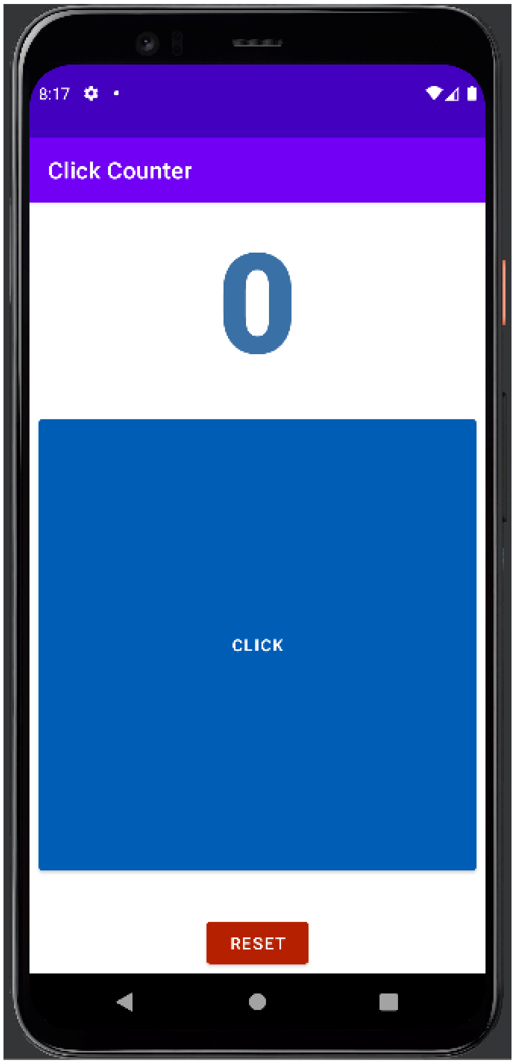
1. **A TextView with ID “click_counter_text”** – this will keep track of the number of times the “click_button” was pressed.
2. **A Button with ID “click_button”** – pressing this button will increase the number of clicks shown by “click_counter_text” by 1.
3. **A Button with ID “reset_button”** – pressing this button will reset the number of clicks on the “click_button” to 0, which will be reflected by “click_counter_text”.

Don’t forget to label the Buttons to differentiate them!

Your layout may look something like this:



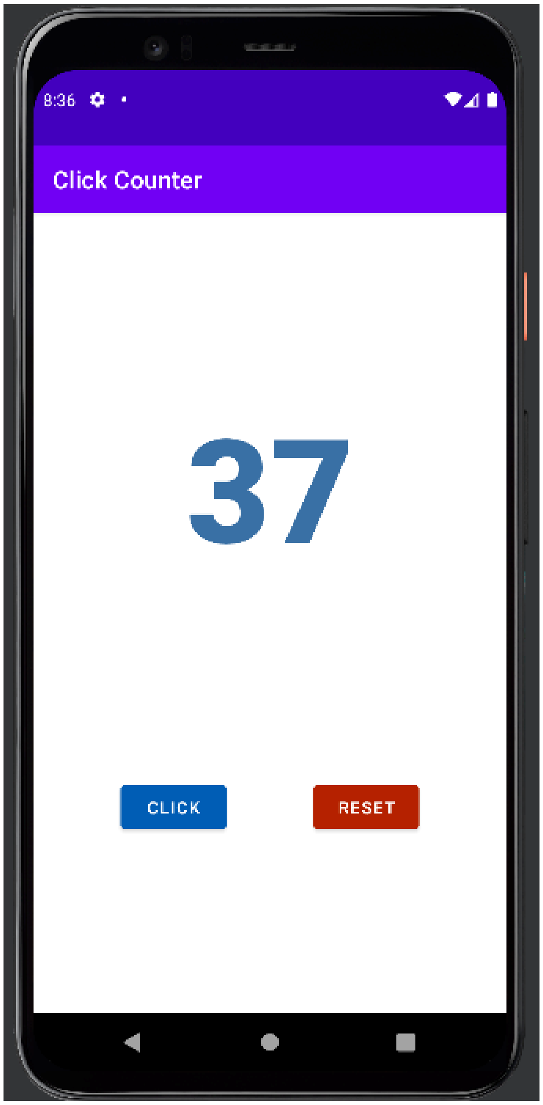
Or perhaps to give yourself an advantage over your friends, you might create a layout like this:

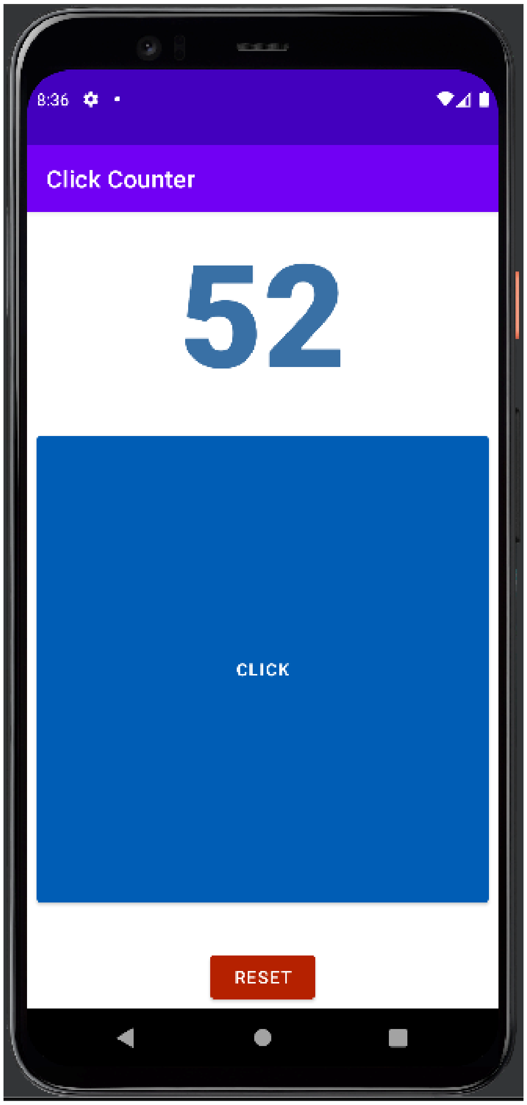


Feel free to experiment with various ways to arrange the TextView and Buttons.

PART 3: TESTING THE APP

Run the app again. With the 3 UI components defined, there should not be any more build errors, and the application successfully launches on the emulator. The “click_counter_text” TextView should increment by 1 every time the “click_button” is pressed, and reset to 0 when the “reset_button” is pressed.





Happy clicking!