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Introduction to the Layout Editor

The Layout Editor enables you to quickly build View-based layouts by dragging UI elements into a visual design editor instead of writing layout XML. The design editor can preview your layout on different Android devices and versions, and you can dynamically resize the layout to be sure it works properly on different screen sizes.

The Layout Editor is especially powerful when building a layout with `ConstraintLayout`.

This page provides an overview of the Layout Editor. To learn more about layout fundamentals, see [Layouts](#).



Introduction to the Layout Editor

The Layout Editor appears when you open an XML layout file.

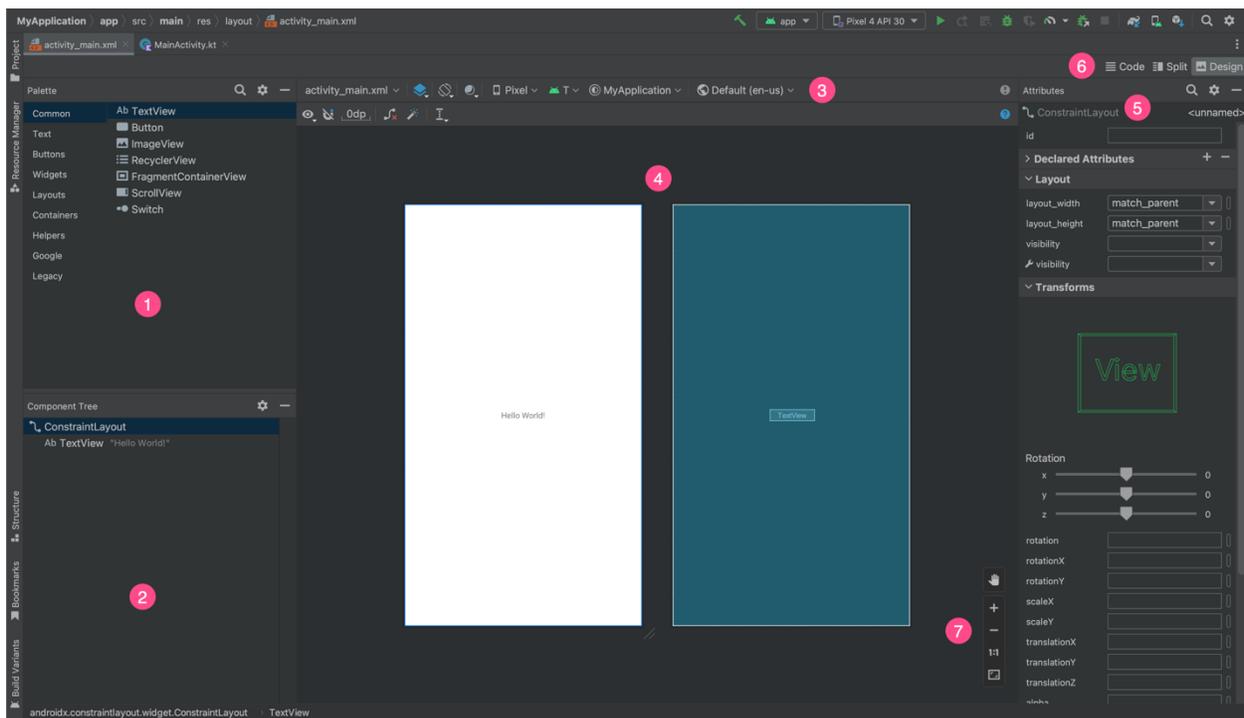


Figure 1. The Layout Editor.

1. **Palette:** contains various views and view groups that you can drag into your layout.
2. **Component Tree:** shows the hierarchy of components in your layout.
3. **Toolbar:** has buttons that configure your layout appearance in the editor and change layout attributes.



4. **Design editor:** lets you edit your layout in Design view, Blueprint view, or both.
5. **Attributes:** has controls for the selected view's attributes.
6. **View mode:** lets you view your layout in either **Code** , **Split** , or **Design**  modes. **Split** mode shows the **Code** and **Design** windows at the same time.
7. **Zoom and pan controls:** control the preview size and position within the editor.

When you open an XML layout file, the design editor opens by default, as shown in figure 1. To edit the layout XML in the text editor, click the **Code**  button in the top-right corner of the window. Note that the **Palette**, **Component Tree**, and **Attributes** panels are not available while editing your layout in **Code** view.

Tip: To switch between design and text editors, press Alt (Control on macOS) plus Shift and the right or left arrow key.



Change the preview appearance

The buttons in the top row of the design editor let you configure the appearance of your layout in the editor.

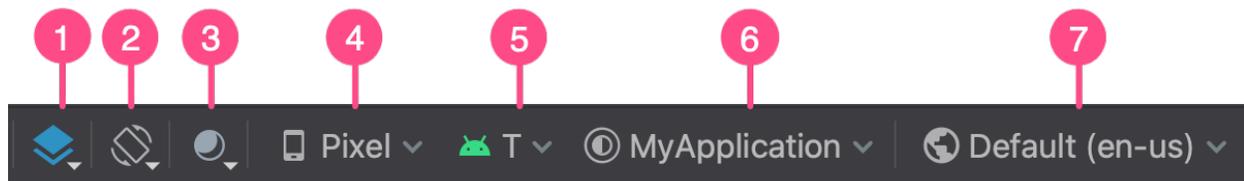


Figure 2. Buttons in the Layout Editor toolbar that configure the layout appearance.

1-Design and Blueprint: Select how you want to view your layout in the editor. You can also press B to cycle through these view types.

- Choose **Design** to see a rendered preview of your layout.
- Choose **Blueprint** to see only outlines for each view.
- Choose **Design + Blueprint** to see both views side by side.

2-Screen orientation and layout variants: Choose between landscape or portrait screen orientation or choose other screen modes that your app provides alternative layouts for, such as night mode. This menu also contains commands for creating a new layout variant, as described in a section on this page. You can also press the letter O on your keyboard to change orientation.

3-System UI Mode: If you've enabled dynamic color in your app, switch wallpapers and see how your layouts react to different users chosen wallpaper. Note that you must first change the theme to a Material dynamic color theme, then change the wallpaper.



4-Device type and size: Select the device type (phone/tablet, Android TV, or Wear OS) and screen configuration (size and density). You can select from several pre-configured device types and your own AVD definitions, and you can create a new AVD by selecting **Add Device Definition** from the list, as shown in figure 3.

- To resize the device, drag the bottom-right corner of the layout.
- Press D to cycle through the device list.

Testing your layout against the **Reference Devices** in this menu helps your app scale well to layout states on real devices.

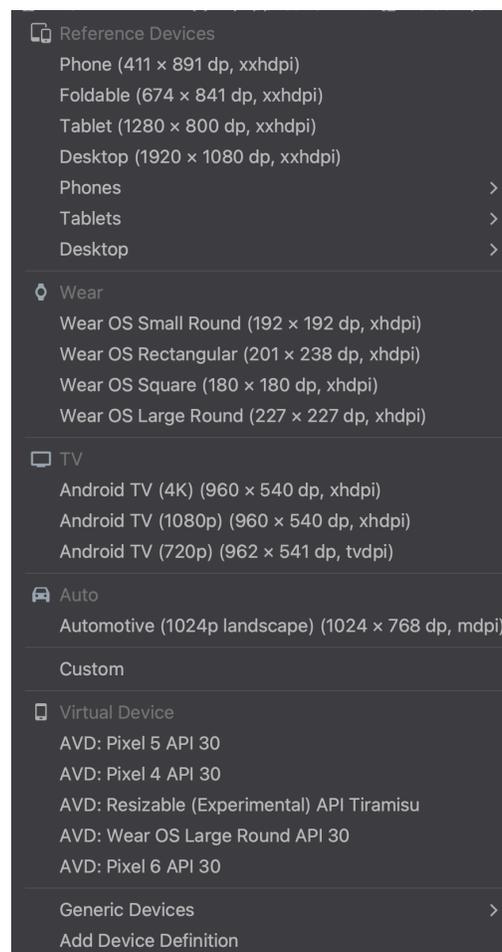


Figure 3. The device list showing Reference Devices.



5-API version: Select the version of Android to preview your layout. The list of available Android versions depends on which SDK platform versions you have installed using SDK Manager.

6-App theme: Select which UI theme to apply to the preview. This works only for supported layout styles, so many themes in this list result in an error.

7-Language: Select the language to show for your UI strings. This list displays only the languages available in your string resources. If you'd like to edit your translations, click **Edit Translations** from the menu. For more information on working with translations, see Localize the UI with Translations Editor.

Create a new layout

When adding a new layout for your app, first create a default layout file in your project's default layout/ directory so that it applies to all device configurations. Once you have a default layout, you can create layout variations, as described in a section on this page, for specific device configurations, such as for large screens.

You can create a new layout in one of the following ways:

Use Android Studio's main menu:

1. In the Project window, click the module you want to add a layout to.
2. In the main menu, select File > New > XML > Layout XML File.
3. In the dialog that appears, provide the filename, the root layout tag, and the source set where the layout belongs.
4. Click Finish to create the layout.



Use the Project view

1. Choose the **Project** view from within the **Project** window.
2. Right-click the layout directory where you'd like to add the layout.
3. In the context menu that appears, click **New > Layout Resource File**.

Use the Android view

1. Choose the **Android** view from within the **Project** window.
2. Right-click the layout folder.
3. In the context menu that appears, select **New > Layout Resource File**.

Use the Resource Manager

1. In the Resource Manager, select the **Layout** tab.
2. Click the + button, and then click **Layout Resource File**.

Use layout variants to optimize for different screens

A *layout variant* is an alternative version of an existing layout that is optimized for a certain screen size or orientation.

Use a suggested layout variant

Android Studio includes common layout variants that you can use in your project. To use a suggested layout variant, do the following:

1. Open your default layout file.
2. Click the **Design** icon in the top-right corner of the window.
3. The name of the layout file appears in the **Action to switch and create qualifiers for layout files** drop-down. Select the drop-down.



4. In the drop-down list, select a variant such as **Create Landscape Qualifier** or **Create Tablet Qualifier**.

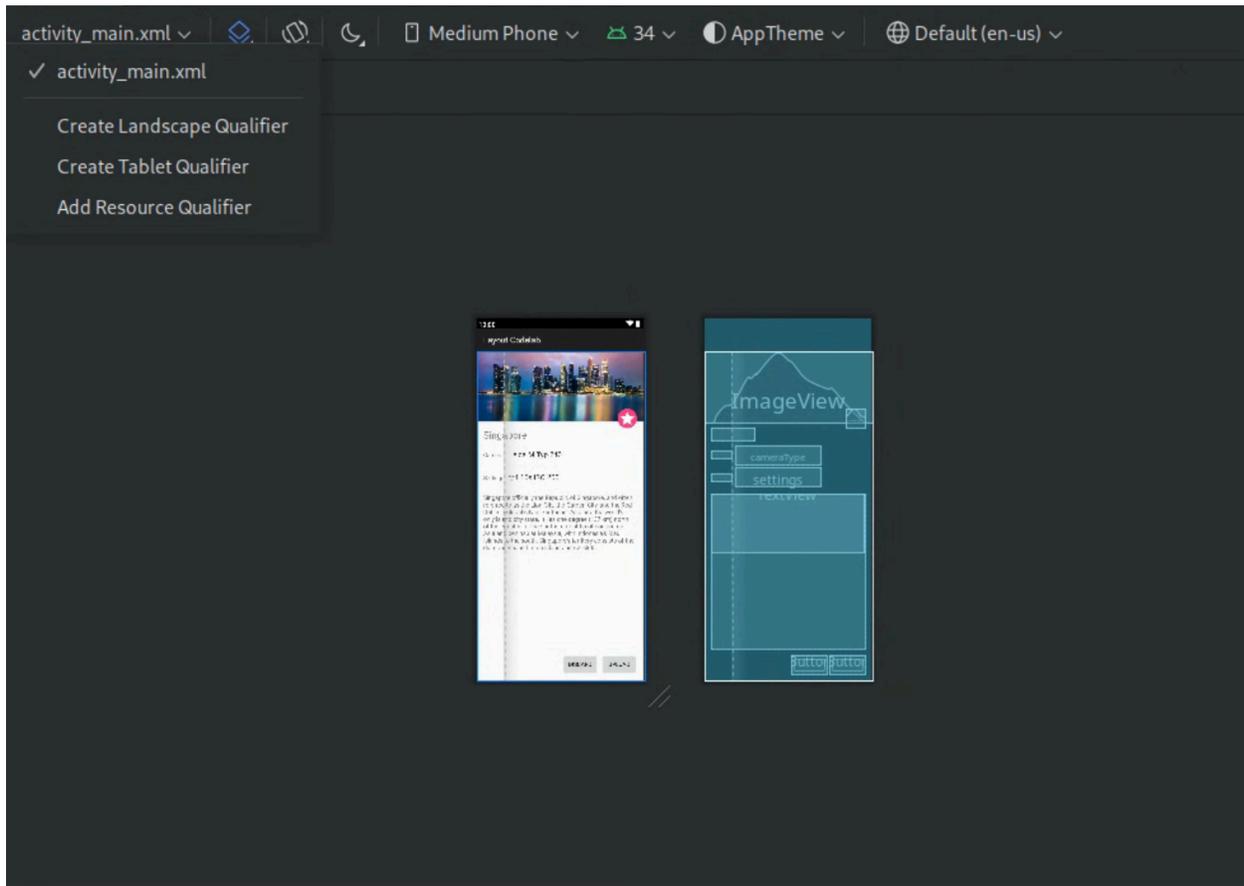


Figure 4. Drop-down list of layout qualifiers.

A new layout directory is created.