

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Favorites

Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = (View.OnClickListener) new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19
20                // Create an Intent for the Recipe screen
21
22                Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
23
24                // Start a new Recipe Activity with the recipeIntent
25
26                startActivity(recipeIntent);
27
28            }
29
30            // set the btnRecipeListener as the btnRecipe's event handler
31
32            btnRecipe.setOnClickListener(btnRecipeListener);
33
34        }
35    }
36
37
38
39
40
41
42
43 }
```

MainActivity > onCreate() > new OnClickListener > onClick()

When you hover your mouse over this 'V' in parentheses, it shows the collapsed listener/handler code.  
If you click on this 'V', ...

Logcat TODO Terminal Build Event Log

Gradle sync finished in 937 ms (from cached state) (moments ago)

26:61 CRLF UTF-8 4 spaces

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Favorites

Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Create an Intent for the Recipe screen
20
21                Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
22
23                // Start a new Recipe Activity with the recipeIntent
24
25                startActivity(recipeIntent);
26            }
27        };
28
29        // set the btnRecipeListener as the btnRecipe's event handler
30
31        btnRecipe.setOnClickListener(btnRecipeListener);
32    }
33
34}
35
36}
37
38}
39}
```

MainActivity > onCreate()

... it will expand the collapsed code.

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Favorites

Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Create an Intent for the Recipe screen
20
21                Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
22
23                // Start a new Recipe Activity with the recipeIntent
24
25                startActivity(recipeIntent);
26
27            }
28
29        };
30
31        // set the btnRecipeListener as the btnRecipe's event handler
32
33        btnRecipe.setOnClickListener(btnRecipeListener);
34
35    }
36
37
38}
```

Place your mouse cursor here (just inside the handler's statement block), ...

MainActivity > onCreate() > new OnClickListener > onClick()

Logcat TODO Terminal Build

Gradle sync finished in 1 s 156 ms (from cached state) (a minute ago)

22:42 CRLF UTF-8 4 spaces

Event Log

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures Z: Structure Favorites Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                // Create an Intent for the Recipe Activity
22                Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
23
24                // Start a new Recipe Activity with the recipeIntent
25                startActivity(recipeIntent);
26
27            }
28
29        };
30
31        // set the btnRecipeListener as the btnRecipe's event handler
32
33        btnRecipe.setOnClickListener(btnRecipeListener);
34
35    }
36
37
38
39
40
41
42 }
```

... and add this comment line followed by 2 blank lines  
Then, type 'Loa' here ...

MainActivity > onCreate() > new OnClickListener > onClick()

Logcat TODO Terminal Build Event Log

Gradle sync finished in 1 s 156 ms (from cached state) (2 minutes ago) 25:17 CRLF UTF-8 4 spaces

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Favorites Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                Log.d("Log", "Button Clicked");
22            }
23        };
24
25        btnRecipe.setOnClickListener(btnRecipeListener);
26
27    }
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42 }
```

... and select the android.util.Log class from this code completion menu

Remember that using this code completion also adds the required import statement for the Log class

MainActivity > onCreate() > new OnClickListener > onClick()

Logcat TODO Terminal Build

Gradle sync finished in 1 s 156 ms (from cached state) (2 minutes ago)

25:20 CRLF UTF-8 4 spaces

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

Favorites

Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                Log.[ Type a period(.) here, ...
22
23                m println(int priority
24                m d(String tag, String msg)
25                m d(String tag, String msg, Throwable tr)
26                m e(String tag, String msg)
27                m e(String tag, String msg, Throwable tr)
28                m getStackTraceString(Throwable tr)
29                m i(String tag, String msg)
30                m i(String tag, String msg, Throwable tr)
31                m isLoggable(String tag, int level)
32                m v(String tag, String msg)
33                m v(String tag, String msg, Throwable tr)
34
35            };
36        }
37
38        // set
39
40        btnRecipe.setOnClickListener(btnRecipeListener);
41    }
42
43}
```

MainActivity > onCreate() > new OnClickListener > onClick()

Logcat TODO Terminal Build Event Log

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Structure Favorites

Build Variants

Logcat TODO Terminal Build

Event Log

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                Log.d("MyApp", "Button Clicked!");
22            }
23        };
24
25        btnRecipe.setOnClickListener(btnRecipeListener);
26    }
27}
```

... and select the Log method 'd' from this code completion menu

Note that the call to the Log.d method requires at least 2 String arguments:

1. the message tag
2. the message text itself

Note: the method name 'd' refers to 'Debug'.  
You can view the Log class API documentation (including the meanings of the other method names) at:  
<https://developer.android.com/reference/android/util/Log>

MainActivity > onCreate() > new OnClickListener > onClick()

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Favorites

Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                Log.d("btnRecipe", "Button click occurred");
22
23                // Create an Intent for the Recipe screen
24
25                Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
26
27                // Start a new Recipe screen
28
29                startActivity(recipeIntent);
30
31            }
32
33        };
34
35        btnRecipe.setOnClickListener(btnRecipeListener);
36
37    }
38
39    btnRecipe.setOnClickListener(btnRecipeListener);
40
41
42
43}
```

MainActivity > onCreate() > new OnClickListener > onClick()

We can now add 2 String arguments for this call to Log.d

Logcat TODO Terminal Build

Gradle sync finished in 1 s 156 ms (from cached state) (3 minutes ago)

26:51 CRLF UTF-8 4 spaces

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Re-build the project

Make Project (Ctrl+F9)

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                Log.d("btnRecipe", "Button click occurred");
22
23            }
24
25        };
26
27        // Create an Intent for the Recipe screen
28
29        Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
30
31        // Start a new Recipe Activity with the recipeIntent
32
33        startActivity(recipeIntent);
34    }
35
36
37    // set the btnRecipeListener as the btnRecipe's event handler
38
39    btnRecipe.setOnClickListener(btnRecipeListener);
40
41
42
43}
```

MainActivity > onCreate() > new OnClickListener > onClick()

Logcat TODO Terminal Build

Gradle sync finished in 1 s 156 ms (from cached state) (3 minutes ago)

26:51 CRLF UTF-8 4 spaces

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...\\app\\src\\main\\java\\edu\\udayton\\healthyrecipes\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Launch the AVD Manager

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

activity\_main.xml recipe.xml Recipe.java MainActivity.java

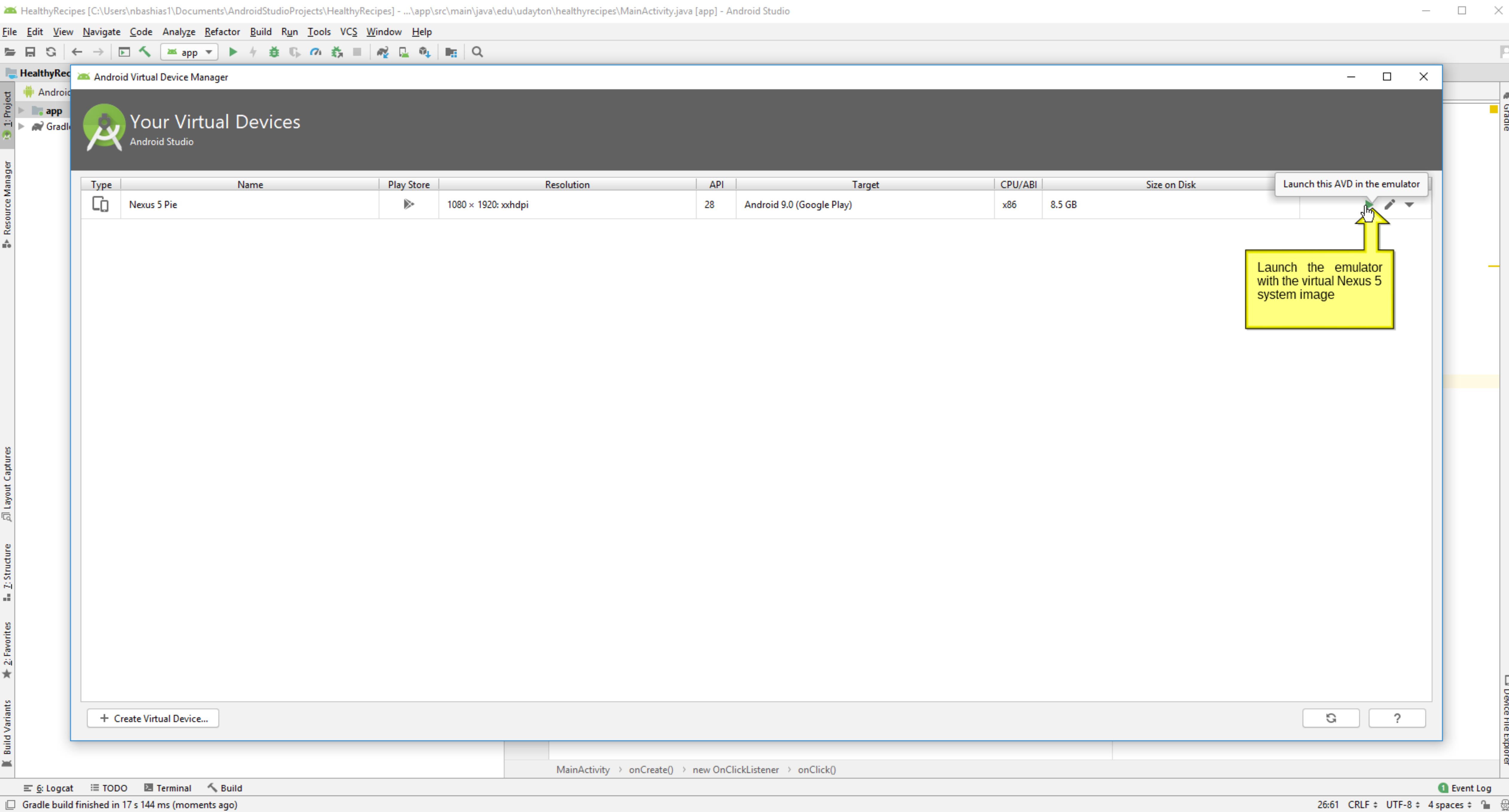
```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                Log.d("btnRecipe", "Button click occurred");
22
23            }
24
25        };
26
27        // Create an Intent for the Recipe screen
28
29        Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
30
31        // Start a new Recipe Activity with the recipeIntent
32
33        startActivity(recipeIntent);
34    }
35
36    // set the btnRecipeListener as the btnRecipe's event handler
37
38    btnRecipe.setOnClickListener(btnRecipeListener);
39}
40
41
42
43}
```

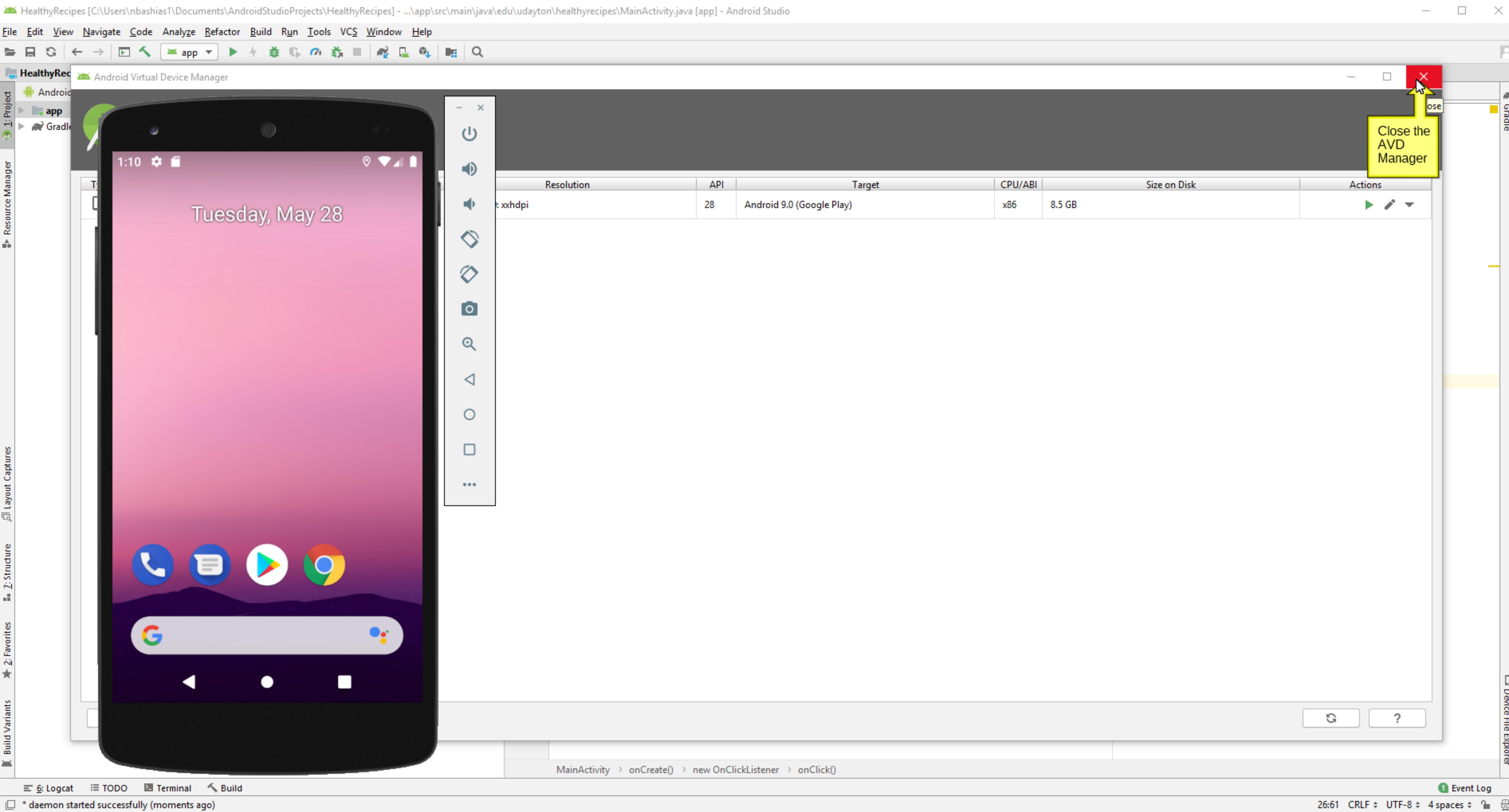
MainActivity > onCreate() > new OnClickListener > onClick()

Logcat TODO Terminal Build

Gradle build finished in 17 s 144 ms (moments ago)

26:51 CRLF UTF-8 4 spaces





HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Favorites

Build Variants

Logcat TODO Terminal Build

\* daemon started successfully (moments ago)

26:1 CRLF UTF-8 4 spaces

Activity.java

activity\_main.xml recipe.xml

package edu.udayton.healthyrecipes;

import ...

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity\_main);

    }

    Button btnRecipe = (Button)findViewById(R.id.btnRecipe);

    // add event handler for Button btnRecipe

    View.OnClickListener btnRecipeListener = new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            // Display a log message that the button has been clicked

            Log.d("btnRecipe", "Button click occurred");

            // Create an Intent for the Recipe screen

            Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);

            // Start a new Recipe Activity with the recipeIntent

            startActivity(recipeIntent);

        }

    };

    // set the btnRecipeListener as the btnRecipe's event handler

    btnRecipe.setOnClickListener(btnRecipeListener);

}

Bring Android Studio back to the foreground

MainActivity > onCreate() > new OnClickListener > onClick()

Event Log

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...\\app\\src\\main\\java\\edu\\udayton\\healthyrecipes\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Run the app

Run 'app' (Shift+F10)

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                // Display a log message that the button has been clicked
20
21                Log.d("btnRecipe", "Button click occurred");
22
23            }
24
25        };
26
27        // Create an Intent for the Recipe screen
28
29        Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
30
31        // Start a new Recipe Activity with the recipeIntent
32
33        startActivity(recipeIntent);
34    }
35
36    // set the btnRecipeListener as the btnRecipe's event handler
37
38    btnRecipe.setOnClickListener(btnRecipeListener);
39}
40
41
42
43}
```

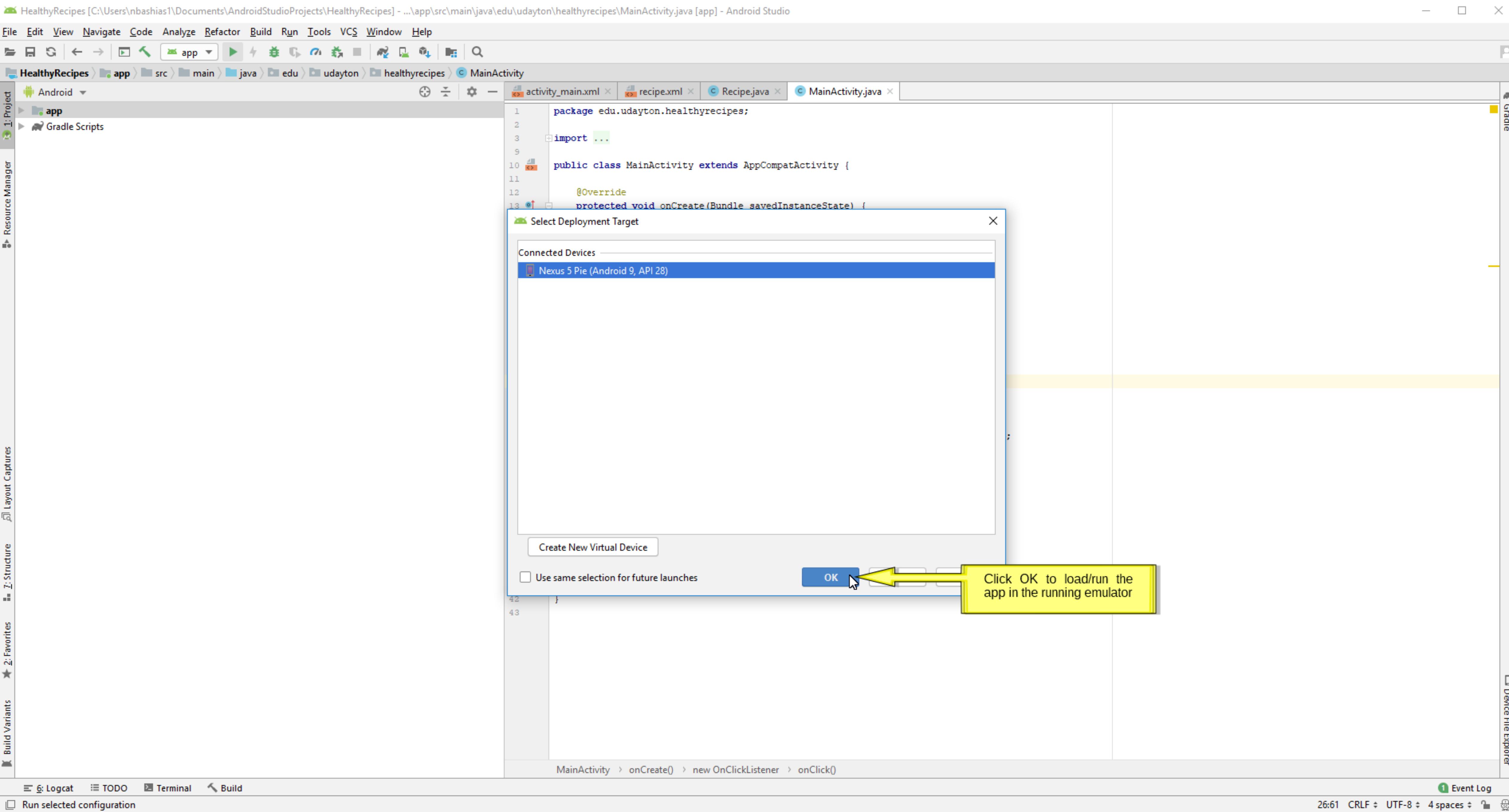
MainActivity > onCreate() > new OnClickListener > onClick()

Logcat TODO Terminal Build

Run selected configuration

26:61 CRLF UTF-8 4 spaces

Event Log



HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager

Layout Captures

Structure

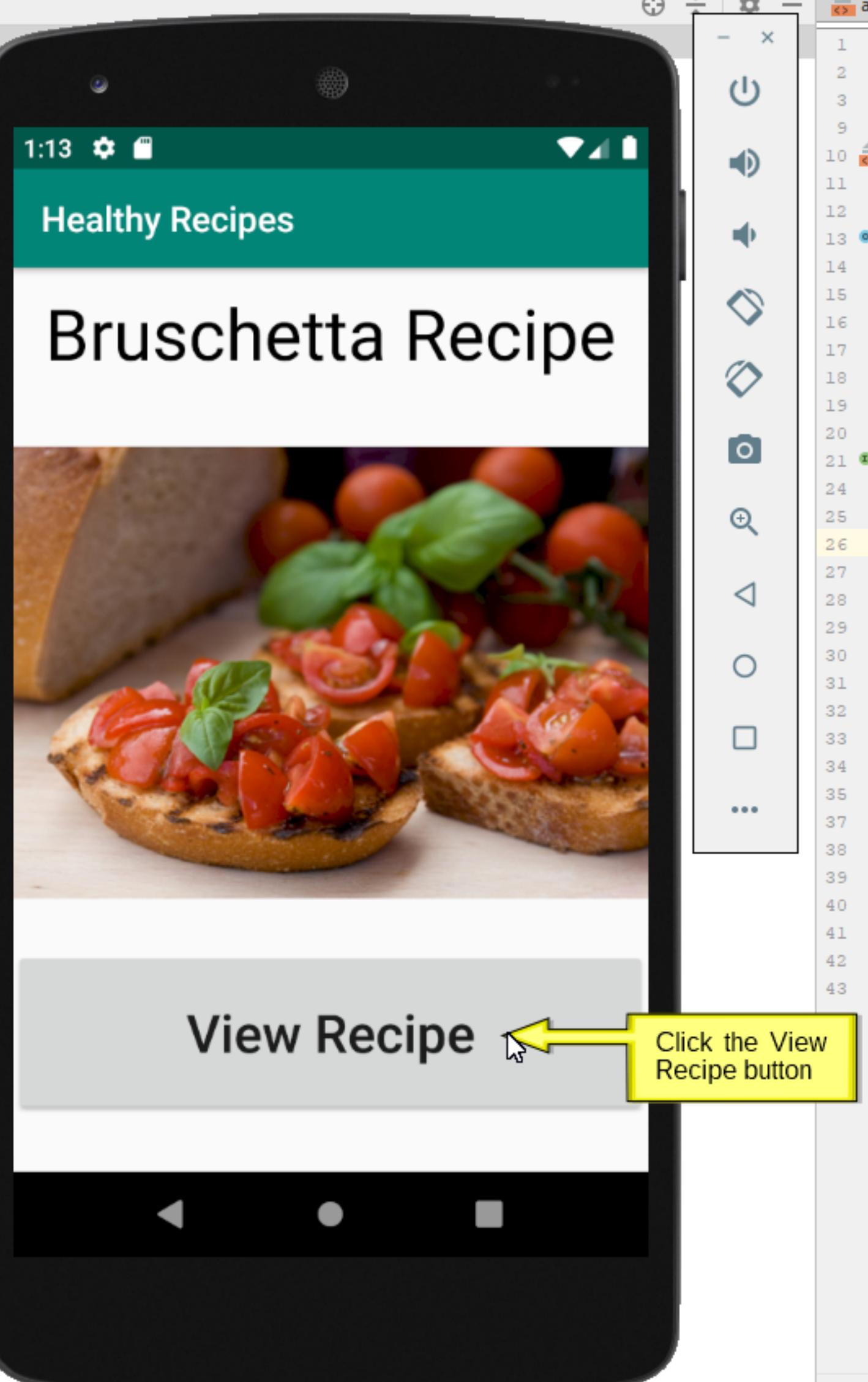
Favorites

Build Variants

Device File Explorer

4: Run 6: Logcat 8: TODO 10: Terminal 12: Build 14: Profiler Event Log

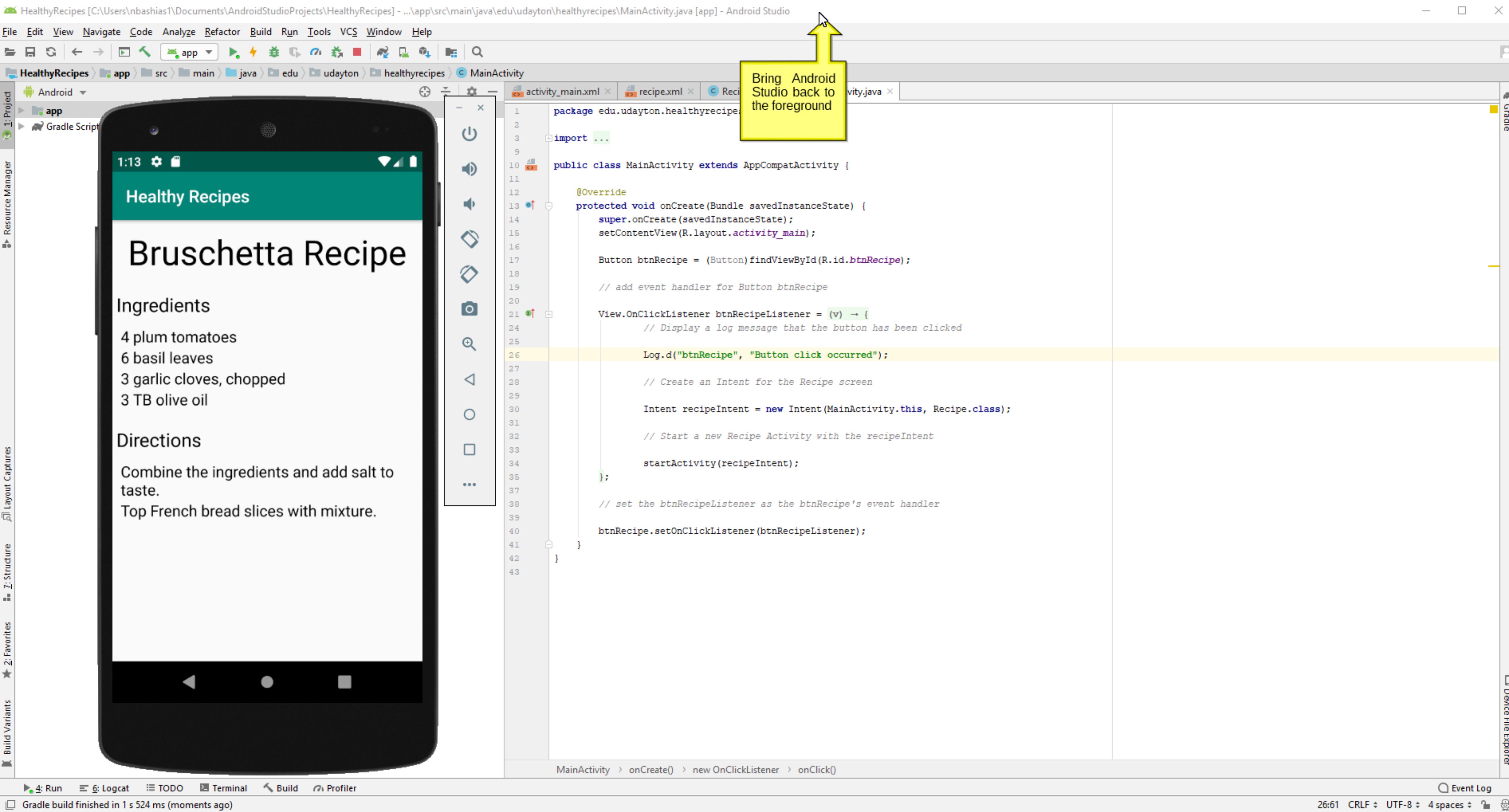
Gradle build finished in 1 s 524 ms (moments ago) 26:61 CRLF UTF-8 4 spaces



activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = (v) -> {
17            // Display a log message that the button has been clicked
18
19            Log.d("btnRecipe", "Button click occurred");
20
21            // Create an Intent for the Recipe screen
22
23            Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
24
25            // Start a new Recipe Activity with the recipeIntent
26
27            startActivity(recipeIntent);
28
29        };
29
30        // set the btnRecipeListener as the btnRecipe's event handler
31
32        btnRecipe.setOnClickListener(btnRecipeListener);
33
34    }
35
36}
```

MainActivity > onCreate() > new OnClickListener > onClick()



HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...\\app\\src\\main\\java\\edu\\udayton\\healthyrecipes\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

Click to expand the Logcat pane

MainActivity > onCreate() > new OnClickListener > onClick()

Run Logcat TODO Terminal Build Profiler Event Log

Gradle build finished in 45 ms (moments ago) 26:51 CRLF UTF-8 4 spaces

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = (v) -> {
17            // Display a log message that the button has been clicked
18
19            Log.d("btnRecipe", "Button click occurred");
20
21        };
22
23        // Create an Intent for the Recipe screen
24
25        Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
26
27        // Start a new Recipe Activity with the recipeIntent
28
29        startActivity(recipeIntent);
30
31    }
32
33    // set the btnRecipeListener as the btnRecipe's event handler
34
35    btnRecipe.setOnClickListener(btnRecipeListener);
36
37}
```

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...\\app\\src\\main\\java\\edu\\udayton\\healthyrecipes\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Structure Favorites Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = (v) -> {
17            // Display a log message that the button has been clicked
18
19            Log.d("btnRecipe", "Button click occurred");
20
21            // Create an Intent for the Recipe screen
22
23            Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
24
25            // Start a new Recipe Activity with the recipeIntent
26
27            startActivity(recipeIntent);
28
29        };
30
31        // set the btnRecipeListener as the btnRecipe's event handler
32    }
33
34
35
36
37
38
39
```

MainActivity > onCreate() > new OnClickListener > onClick()

Logcat

Emulator Nexus\_5\_Pie Android 9 edu.udayton.healthyrecipes (6812) Verbose Regex Show only selected application

2019-05-28 13:13:35.078 6812-6852/edu.udayton.healthyrecipes I/OpenGLOnly: Initialized EGL, version 1.4  
2019-05-28 13:13:35.079 6812-6852/edu.udayton.healthyrecipes D/OpenGLOnly: Swap behavior 1  
2019-05-28 13:13:35.079 6812-6852/edu.udayton.healthyrecipes W/OpenGLOnly: Failed to choose config with EGL\_SWAP\_BEHAVIOR\_PRESERVED, retrying without...  
2019-05-28 13:13:35.079 6812-6852/edu.udayton.healthyrecipes D/OpenGLOnly: Swap behavior 0  
2019-05-28 13:13:35.098 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglCreateContext: 0xeecdffca0: maj 2 min 0 rcv 2  
2019-05-28 13:13:35.158 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglGetCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)  
2019-05-28 13:13:35.254 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglGetCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xeecdffca0)  
2019-05-28 13:13:41.305 6812-6812/edu.udayton.healthyrecipes D/btnRecipe: Button click occurred  
2019-05-28 13:13:41.385 6812-6812/edu.udayton.healthyrecipes W/ActivityThread: handleWindowVisibility: no activity for token  
2019-05-28 13:13:41.659 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglGetCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xeecdffca0)  
2019-05-28 13:13:41.703 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglGetCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xeecdffca0)  
2019-05-28 13:13:41.747 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglGetCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)

Here is the output produced by the call to Log.d (it has been highlighted here for demo purposes)

Run Logcat TODO Terminal Build Profiler Event Log

Gradle build finished in 1 s 524 ms (moments ago) 95 chars 19:1 CRLF 4 spaces

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager

1: Project

Layout Captures

2: Structure

Logcat

Emulator Nexus

2: Favorites

Build Variants

Device File Explorer

Run Logcat TODO Terminal Build Profiler Event Log

Gradle build finished in 1 s 524 ms (moments ago) 95 chars 19:1 CRLF + UTF-8 + 4 spaces

```
package edu.udayton.healthyrecipes;

import ...

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);

        // add event handler for Button btnRecipe

        View.OnClickListener btnRecipeListener = (v) -> {
            // Display a log message that the button has been clicked

            Log.d("btnRecipe", "Button click occurred");

            // Create an Intent for the Recipe screen

            Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);

            // Start a new Recipe Activity with the recipeIntent

            startActivity(recipeIntent);
        };

        // set the btnRecipeListener as the btnRecipe's event handler
    }
}
```

MainActivity > onCreate() > new OnClickListener > onClick()

enderer: Initialized EGL, version 1.4  
enderer: Swap behavior 1  
enderer: Failed to choose config with EGL\_SWAP\_BEHAVIOR\_PRESERVED, retrying without...  
enderer: Swap behavior 0  
lation: eglCreateContext: 0xecdfcca0: maj 2 min 0 rcv 2  
lation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)  
lation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)  
pe: Button click occurred  
yThread: handleWindowVisibility: no activity for token android.os.BinderProxy@b6b7565  
lation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)  
ilation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)  
imulation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager

Layout Captures

2: Structure

Logcat Emulator Nexus 2019-05-20 13:14:10.000

3: Favorites

Build Variants

4: Run Logcat TODO Terminal Build Profiler

Gradle build finished in 1 s 524 ms (a minute ago) 95 chars 19:1 CRLF + UTF-8 + 4 spaces

Healthy Recipes

# Bruschetta Recipe



View Recipe

Click the View Recipe button again

```
package edu.udayton.healthyrecipes;

import ...

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);

        // add event handler for Button btnRecipe

        View.OnClickListener btnRecipeListener = (v) -> {
            // Display a log message that the button has been clicked

            Log.d("btnRecipe", "Button click occurred");

            // Create an Intent for the Recipe screen

            Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);

            // Start a new Recipe Activity with the recipeIntent

            startActivity(recipeIntent);
        };

        // set the btnRecipeListener as the btnRecipe's event handler
    }
}
```

MainActivity > onCreate() > new OnClickListener > onClick()

Click the View Recipe button again

2019-05-20 13:14:10.000

renderer: Failed to choose config with EGL\_SWAP\_BEHAVIOR\_PRESERVED, retrying without...

renderer: Swap behavior 0

lation: eglCreateContext: 0xecdfcca0: maj 2 min 0 rcv 2

lation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)

lation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)

pe: Button click occurred

yThread: handleWindowVisibility: no activity for token android.os.BinderProxy@b6b7565

lation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)

D/EGL\_emulation: eglGetCurrent: 0xecdfcca0: ver 2 0 (tinfo 0xec3c0d10)

HealthyRecipes [C:\Users\nbashias1\Documents\AndroidStudioProjects\HealthyRecipes] - ...app\src\main\java\edu\udayton\healthyrecipes\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

HealthyRecipes app src main java edu udayton healthyrecipes MainActivity

1: Project app Gradle Scripts

Resource Manager Layout Captures

2: Structure Favorites Build Variants

activity\_main.xml recipe.xml Recipe.java MainActivity.java

```
1 package edu.udayton.healthyrecipes;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11
12        Button btnRecipe = (Button)findViewById(R.id.btnRecipe);
13
14        // add event handler for Button btnRecipe
15
16        View.OnClickListener btnRecipeListener = (v) -> {
17            // Display a toast message when the button has been clicked
18            Log.d("bt", "d");
19
20            // Create an Intent to start the Recipe activity
21            Intent recipeIntent = new Intent(MainActivity.this, Recipe.class);
22
23            // Start the Recipe activity
24            startActivity(recipeIntent);
25
26        };
27
28        // set the btnRecipeListener as the btnRecipe's event handler
29        btnRecipe.setOnClickListener(btnRecipeListener);
30    }
31
32
33
34
35
36
37
38
39 }
```

This ends this demo.  
In this way, you can now add output messages in your app code to help trace execution and debug your code.

MainActivity > onCreate() > new OnClickListener > onClick()

Logcat

Emulator Nexus\_5\_Pie Android 9 edu.udayton.healthyrecipes (6812) Verbose Regex Show only selected application

2019-05-28 13:13:35.254 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)
2019-05-28 13:13:41.305 6812-6812/edu.udayton.healthyrecipes D/btnRecipe: Button click occurred
2019-05-28 13:13:41.385 6812-6812/edu.udayton.healthyrecipes W/ActivityThread: handleWindowVisibility: no activity for token android.os.BinderProxy@b6b7565
2019-05-28 13:13:41.659 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)
2019-05-28 13:13:41.703 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)
2019-05-28 13:13:41.747 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)
2019-05-28 13:14:10.886 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)
2019-05-28 13:14:14.986 6812-6812/edu.udayton.healthyrecipes D/btnRecipe: Button click occurred
2019-05-28 13:14:15.041 6812-6812/edu.udayton.healthyrecipes W/ActivityThread: handleWindowVisibility: no activity for token and
2019-05-28 13:14:15.349 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)
2019-05-28 13:14:15.390 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)
2019-05-28 13:14:15.423 6812-6852/edu.udayton.healthyrecipes D/EGL\_emulation: eglMakeCurrent: 0xeecdffca0: ver 2 0 (tinfo 0xec3c0d10)

Here is the second output message  
(again, highlighted for demo purposes)

Run Logcat TODO Terminal Build Profiler Event Log

Gradle build finished in 1 s 524 ms (a minute ago) 95 chars 25:96 CRLF + UTF-8 + 4 spaces