

## Practical :- 2

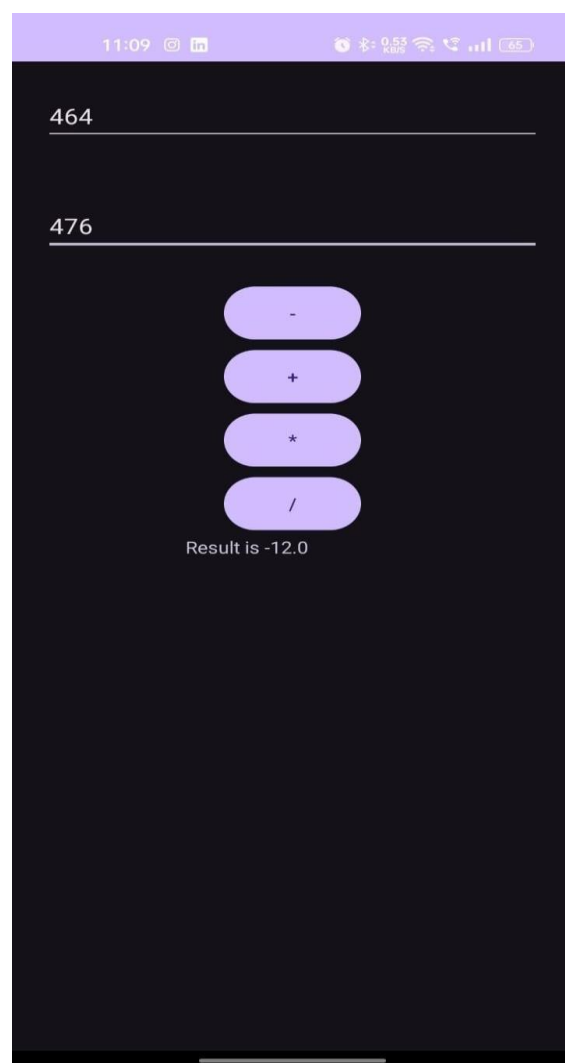
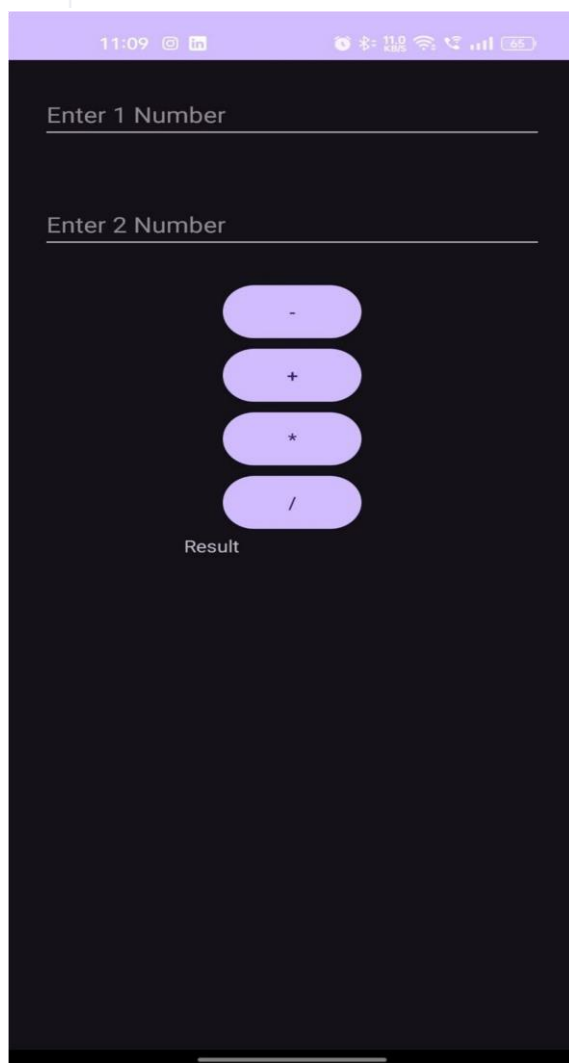
**Aim :-** Design a Calculator using kotlin in Android Studio.

```
</> activity_main.xml  MainActivity.kt  x
1  package com.example.bascalculator
2  import androidx.appcompat.app.AppCompatActivity
3  import android.os.Bundle
4  import android.view.View
5  import android.widget.Button
6  import android.widget.EditText
7  import android.widget.TextView
8  @Suppress( ...names: "UNREACHABLE_CODE")
9  class MainActivity : AppCompatActivity(), View.OnClickListener {
10
11      lateinit var btnadd: Button
12      lateinit var btnsub: Button
13      lateinit var btnmul: Button
14      lateinit var btndiv: Button
15      lateinit var eta: EditText
16      lateinit var etb: EditText
17      lateinit var rv: TextView
18      override fun onCreate(savedInstanceState: Bundle?) {
19          super.onCreate(savedInstanceState)
20          setContentView(R.layout.activity_main)
21
22          btnadd = findViewById(R.id.btnadd)
23          btnsub = findViewById(R.id.btnsub)
24          btnmul = findViewById(R.id.btnmul)
25          btndiv = findViewById(R.id.btndiv)
26          eta = findViewById(R.id.eta)
27          etb = findViewById(R.id.etb)
28          rv = findViewById(R.id.rv)
29
30          btnadd.setOnClickListener(this)
31          btnsub.setOnClickListener(this)
32          btnmul.setOnClickListener(this)
33          btndiv.setOnClickListener(this)
34      }
35      override fun onClick(v: View?) {
36          TODO( reason: "Not yet implemented")
37          var a : Double = eta.text.toString().toDouble()
38          var b : Double = etb.text.toString().toDouble()
39          var result = 0.0
40          when(v?.id){
41              R.id.btnadd ->{
42                  result = a + b }
43              R.id.btnsub ->{
44                  result = a - b }
45              R.id.btnmul ->{
46                  result = a * b }
47              R.id.btndiv ->{
48                  result = a / b }
49          }
50          rv.text = "Result is $result"
51      }
52  }
```

 activity\_main.xml ×  MainActivity.kt

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     xmlns:tools="http://schemas.android.com/tools"
5     android:layout_width="match_parent"
6     android:layout_height="match_parent"
7     tools:context=".MainActivity">
8     <Button
9         android:id="@+id/btnmul"
10        android:layout_width="wrap_content"
11        android:layout_height="wrap_content"
12        android:text="Multiply"
13        tools:layout_editor_absoluteX="218dp"
14        tools:layout_editor_absoluteY="170dp"
15        tools:ignore="MissingConstraints" />
16    <EditText
17        android:id="@+id/eta"
18        android:layout_width="163dp"
19        android:layout_height="60dp"
20        android:text="Enter first number"
21        android:textSize="16sp"
22        tools:layout_editor_absoluteX="16dp"
23        tools:layout_editor_absoluteY="40dp"
24        tools:ignore="MissingConstraints" />
25    <EditText
26        android:id="@+id/etb"
27        android:layout_width="170dp"
28        android:layout_height="56dp"
29        android:text="Enter second number"
30        android:textSize="16sp"
31        tools:layout_editor_absoluteX="225dp"
32        tools:layout_editor_absoluteY="41dp"
33        tools:ignore="MissingConstraints" />
34    <Button
35        android:id="@+id/btnadd"
36        android:layout_width="wrap_content"
37        android:layout_height="wrap_content"
38        android:text="Add"
39        tools:layout_editor_absoluteX="3dp"
40        tools:layout_editor_absoluteY="170dp"
41        tools:ignore="MissingConstraints" />
42    <Button
43        android:id="@+id/btnsub"
44        android:layout_width="wrap_content"
45        android:layout_height="wrap_content"
46        android:text="Subtract"
47        tools:layout_editor_absoluteX="107dp"
48        tools:layout_editor_absoluteY="170dp"
49        tools:ignore="MissingConstraints" />
```

```
50     <Button
51         android:id="@+id/btndiv"
52         android:layout_width="wrap_content"
53         android:layout_height="wrap_content"
54         android:text="Divide"
55         tools:layout_editor_absoluteX="317dp"
56         tools:layout_editor_absoluteY="170dp"
57         tools:ignore="MissingConstraints" />
58     <TextView
59         android:id="@+id/rv"
60         android:layout_width="116dp"
61         android:layout_height="57dp"
62         android:text="Result"
63         android:textSize="20sp"
64         tools:layout_editor_absoluteX="147dp"
65         tools:layout_editor_absoluteY="372dp"
66         tools:ignore="MissingConstraints" />
67 </androidx.constraintlayout.widget.ConstraintLayout>
```



## Practical :- 3

Aim :- Design Login Form using Toast.

```
package com.example.loginpage1

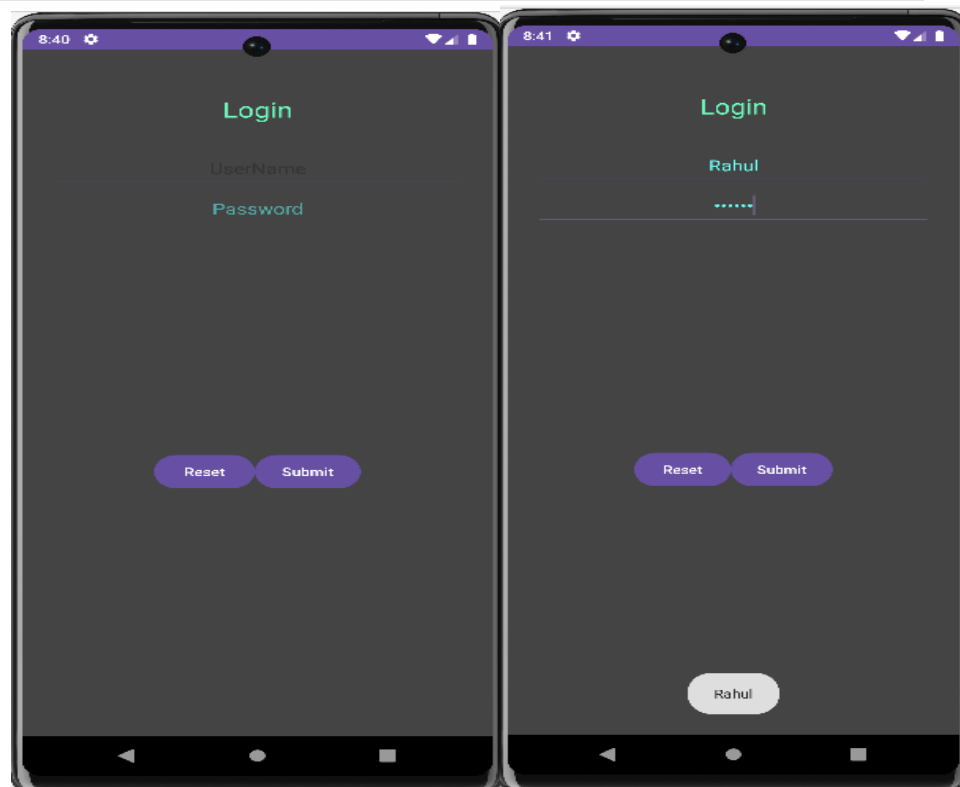
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        var et_user_name = findViewById(R.id.et_username) as EditText
        var et_passeord = findViewById(R.id.et_password) as EditText
        var btn_reset = findViewById(R.id.btn_reset) as Button
        var btn_submit = findViewById(R.id.btn_submit) as Button

        btn_reset.setOnClickListener { it: View!
            et_user_name.setText("")
            et_passeord.setText("")
        }

        btn_submit.setOnClickListener { it: View!
            val user_name = et_user_name.text;
            val password = et_passeord.text;
            Toast.makeText(context: this@MainActivity, user_name, Toast.LENGTH_LONG).
        }
    }
}
```



```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <LinearLayout
        android:id="@+id/l1_main_layout"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:gravity="center"
        android:background="#444444"
        android:padding="25dp"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <TextView
            android:id="@+id/textView5"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textSize="25dp"
            android:textColor="#6dffb7"
            android:padding="30dp"
            android:text="Login" />

        <EditText
            android:id="@+id/et_username"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="UserName"
            android:minHeight="48dp"
            android:textAlignment="center"
            android:textColor="#6bfff7"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent" />

        <EditText
            android:id="@+id/et_password"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Password"
            android:inputType="textPassword"
            android:minHeight="48dp"
            android:textAlignment="center"
            android:textColor="#6bfff7"
            android:textColorHint="#52afaa"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent" />

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:gravity="center"
            android:padding="25dp"
            android:orientation="horizontal">

            <Button
                android:id="@+id/btn_reset"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Reset"
                android:textAllCaps="false" />

            <Button
                android:id="@+id/btn_submit"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Submit" />

        </LinearLayout>
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

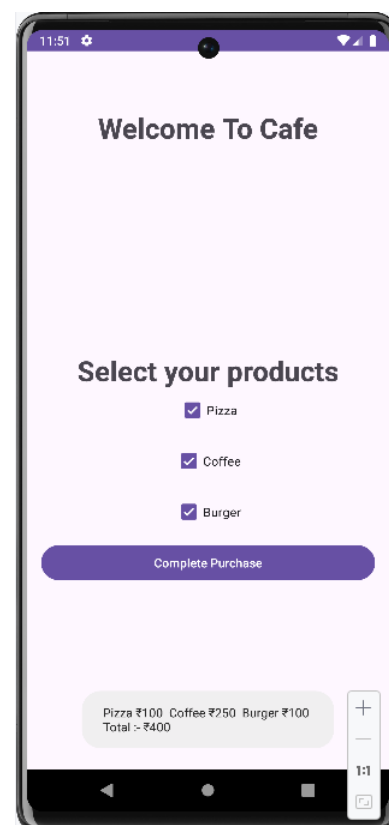
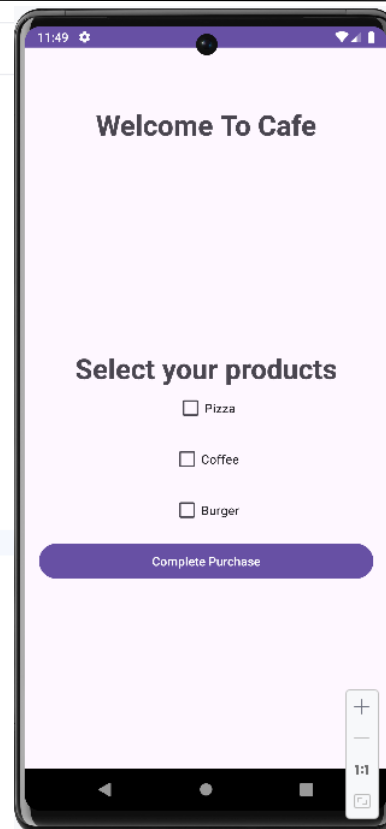
## Practical :- 4

**Aim :-** Design a Menu for a café and print its Invoice.

```
MainActivity.kt  x  </> activity_main.xml

1  package com.example.myapplication
2
3  import androidx.appcompat.app.AppCompatActivity
4  import android.os.Bundle
5  import android.widget.Button
6  import android.widget.CheckBox
7  import android.widget.Toast
8  import kotlin.text.StringBuilder
9
10 </> class MainActivity : AppCompatActivity() {
11
12     lateinit var pizza: CheckBox
13     lateinit var coffee: CheckBox
14     lateinit var burger: CheckBox
15     lateinit var button: Button
16
17     override fun onCreate(savedInstanceState: Bundle?) {
18         super.onCreate(savedInstanceState)
19         setContentView(R.layout.activity_main)
20
21         pizza = findViewById(R.id.checkBox1)
22         coffee = findViewById(R.id.checkBox2)
23         burger = findViewById(R.id.checkBox3)
24         button = findViewById(R.id.button)
25
26         button.setOnClickListener { it: View!
27             var totalAmount: Int = 0
28             var result = StringBuilder()
29             if (pizza.isChecked) {
30                 result.append("Pizza ₹100 ")
31                 totalAmount += 100
32             }
33             if (coffee.isChecked) {
34                 result.append("Coffee ₹250 ")
35                 totalAmount += 250
36             }
37             if (burger.isChecked) {
38                 result.append("Burger ₹100\n")
39                 totalAmount += 50
40             }
41             result.append("Total :- ₹" + totalAmount)
42             Toast.makeText(applicationContext, result.toString(), Toast.LENGTH_SHORT).show()
43         }
44     }
45 }
```

```
MainActivity.kt  activity_main.xml x
1  <?xml version="1.0" encoding="utf-8"?>
2  <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      xmlns:app="http://schemas.android.com/apk/res-auto"
4      xmlns:tools="http://schemas.android.com/tools"
5      android:layout_width="match_parent"
6      android:layout_height="match_parent"
7      android:padding="16dp"
8      tools:context=".MainActivity">
9
10     <TextView
11         android:layout_height="wrap_content"
12         android:layout_width="wrap_content"
13         android:layout_centerHorizontal="true"
14         android:layout_marginTop="50dp"
15         android:text="Welcome To Cafe"
16         android:textAlignment="center"
17         android:textSize="32dp"
18         android:textStyle="bold" />
19
20     <TextView
21         android:layout_above="@id/checkbox1"
22         android:layout_width="wrap_content"
23         android:layout_height="wrap_content"
24         android:layout_centerHorizontal="true"
25         android:layout_marginTop="50dp"
26         android:text="Select your products"
27         android:textAlignment="center"
28         android:textSize="32sp"
29         android:textStyle="bold" />
30
31     <CheckBox
32         android:id="@+id/checkbox1"
33         android:layout_width="wrap_content"
34         android:layout_height="wrap_content"
35         android:layout_centerInParent="true"
36         android:text="Pizza" />
37
38     <CheckBox
39         android:id="@+id/checkbox2"
40         android:layout_width="wrap_content"
41         android:layout_height="wrap_content"
42         android:layout_below="@+id/checkbox1"
43         android:layout_centerInParent="true"
44         android:layout_marginTop="10dp"
45         android:text="Coffee" />
46
47     <CheckBox
48         android:id="@+id/checkbox3"
49         android:layout_width="wrap_content"
50         android:layout_height="wrap_content"
51         android:layout_below="@+id/checkbox2"
52         android:layout_centerInParent="true"
53         android:text="Burger"
54         android:layout_marginTop="10dp" />
55
56     <Button
57         android:id="@+id/button"
58         android:layout_width="match_parent"
59         android:layout_height="wrap_content"
60         android:layout_below="@+id/checkbox3"
61         android:layout_marginTop="10dp"
62         android:text="Complete Purchase" />
63 </RelativeLayout>
```



## Practical :- 5

**Aim :- Design a Menu Tree to change background color.**

```
MainActivity.kt x activity_main.xml x
1 package com.example.myapplication
2 > import ...
18 class MainActivity : AppCompatActivity() {
11     lateinit var textView: TextView
12     lateinit var RelativeLayout: RelativeLayout
13 override fun onCreate(savedInstanceState: Bundle?) {
14     super.onCreate(savedInstanceState)
15     setContentView(R.layout.activity_main)
16     textView = findViewById(R.id.textView)
17     RelativeLayout = findViewById(R.id.RelativeLayout)
18     registerForContextMenu(textView)
19 }
20 override fun onCreateContextMenu(
21     menu: ContextMenu?,
22     v: View?,
23     menuInfo: ContextMenu.ContextMenuInfo?) {
24     super.onCreateContextMenu(menu, v, menuInfo)
25     menu!!.setHeaderTitle("Choose a color")
26     menu.add( groupid: 0, v!!.id, order: 0, title: "Yellow")
27     menu.add( groupid: 0, v.id, order: 0, title: "Gray")
28     menu.add( groupid: 0, v.id, order: 0, title: "Cyan")
29 }
30 override fun onContextItemSelected(item: MenuItem): Boolean {
31     if (item.title == "Yellow") {
32         RelativeLayout.setBackgroundColor(Color.YELLOW)
33     } else if (item.title == "Gray") {
34         RelativeLayout.setBackgroundColor(Color.GRAY)
35     } else if (item.title == "Cyan") {
36         RelativeLayout.setBackgroundColor(Color.CYAN)
37     }
38     return true
39 }
40 }
```

```
<?xml version="1.0" encoding="utf-8"?>
2 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     xmlns:tools="http://schemas.android.com/tools"
5     android:id="@+id/relLayout"
6     android:layout_width="match_parent"
7     android:layout_height="match_parent"
8     android:background="#fff"
9     android:padding="16dp"
10     tools:context=".MainActivity">
11
12     <TextView
13         android:id="@+id/textView"
14         android:layout_width="wrap_content"
15         android:layout_height="wrap_content"
16         android:text="Long Press Me!"
17         android:layout_centerHorizontal="true"
18         android:layout_marginTop="28dp"
19         android:textColor="#000"
20         android:textSize="20sp"
21         android:textStyle="bold" />
22
23 </RelativeLayout>
```



## Practical :- 6

**Aim :-** Add Image of your choice / adding Logo to your Project.

MainActivity.kt x &lt;/&gt; activity\_main.xml

```
1 package com.example.myapplication
2
3 import androidx.appcompat.app.AppCompatActivity
4 import android.os.Bundle
5
6 </> class MainActivity : AppCompatActivity() {
7     override fun onCreate(savedInstanceState: Bundle?) {
8         super.onCreate(savedInstanceState)
9         setContentView(R.layout.activity_main)
10    }
11 }
```



MainActivity.kt &lt;/&gt; activity\_main.xml x

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <include xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     xmlns:tools="http://schemas.android.com/tools"
5     android:layout_width="match_parent"
6     android:layout_height="match_parent"
7     android:context=".MainActivity">
8
9     <ImageView
10         android:id="@+id/imageView"
11         android:layout_width="242dp"
12         android:layout_height="262dp"
13         app:layout_constraintBottom_toBottomOf="parent"
14         app:layout_constraintEnd_toEndOf="parent"
15         app:layout_constraintHorizontal_bias="0.644"
16         app:layout_constraintStart_toStartOf="parent"
17         app:layout_constraintTop_toTopOf="parent"
18         app:layout_constraintVertical_bias="0.528"
19         app:srcCompat="@drawable/ioslogo"
20         tools:ignore="MissingConstraints" />
21 </include>
```

## Practical :- 7

**Aim :-** Starting Camera Module and taking Picture.

```
</> activity_main.xml  MainActivity.kt x
1  package com.example.camera_module
2
3  import android.content.Intent
4  import android.graphics.Bitmap
5  import androidx.appcompat.app.AppCompatActivity
6  import android.os.Bundle
7  import android.provider.MediaStore
8  import android.view.View
9  import android.widget.Button
10 import android.widget.ImageView
11
12 </> class MainActivity : AppCompatActivity() {
13     private lateinit var cameraOpenId: Button
14     lateinit var clickImageId: ImageView
15
16     override fun onCreate(savedInstanceState: Bundle?) {
17         super.onCreate(savedInstanceState)
18         setContentView(R.layout.activity_main)
19
20         cameraOpenId = findViewById(R.id.camera_button)
21         clickImageId = findViewById(R.id.click_image)
22         cameraOpenId.setOnClickListener(View.OnClickListener { v: View? ->
23             val cameraIntent = Intent(MediaStore.ACTION_IMAGE_CAPTURE)
24             startActivityForResult(cameraIntent, pic_id)
25         })
26     }
27     override fun onActivityResult(requestCode: Int, resultCode: Int, data: Intent?) {
28         super.onActivityResult(requestCode, resultCode, data)
29
30         if (requestCode == pic_id) {
31             val photo = data!!.extras!!["data"] as Bitmap?
32             clickImageId.setImageBitmap(photo)
33         }
34     }
35     companion object{
36         private const val pic_id = 123
37     }
38 }
```

activity\_main.xml x MainActivity.kt

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3   xmlns:app="http://schemas.android.com/apk/res-auto"
4   xmlns:tools="http://schemas.android.com/tools"
5   android:layout_width="match_parent"
6   android:layout_height="match_parent"
7   tools:context=".MainActivity">
8
9   <Button
10    android:id="@+id/camera_button"
11    android:layout_width="100dp"
12    android:layout_height="50dp"
13    android:layout_marginStart="150dp"
14    android:layout_marginTop="29dp"
15    android:text="Camera" />
16
17   <ImageView
18    android:id="@+id/click_image"
19    android:layout_width="350dp"
20    android:layout_height="450dp"
21    android:layout_marginTop="70dp"
22    android:layout_marginStart="30dp"
23    android:layout_marginBottom="10dp"/>
24 </RelativeLayout>
```

