**1.Spinner with Toast**

**a) Kotlin File:**

package com.pulkitshubham.gridlayout  
  
import android.annotation.SuppressLint  
import android.os.Bundle  
import android.view.View  
import android.widget.AdapterView  
import android.widget.ArrayAdapter  
import android.widget.Spinner  
import android.widget.Toast  
import androidx.activity.enableEdgeToEdge  
import androidx.appcompat.app.AppCompatActivity  
import androidx.core.view.ViewCompat  
import androidx.core.view.WindowInsetsCompat  
  
class MainActivity4 : AppCompatActivity() {  
 @SuppressLint("MissingInflatedId")  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 *enableEdgeToEdge*()  
 setContentView(R.layout.*activity\_main4*)  
 val spinnerlist = *listOf*("Jan ☺️","Feb 😁","March 😂","April 😒","May 😍","June 😎")  
 val spinner = findViewById<Spinner>(R.id.*spinner*)  
 val arrayAdapter = ArrayAdapter(this,android.R.layout.*simple\_spinner\_dropdown\_item*,spinnerlist)  
 spinner.*adapter* = arrayAdapter  
 spinner.*onItemSelectedListener*=object:AdapterView.OnItemSelectedListener {  
 override fun onItemSelected(  
 parent: AdapterView<\*>?,  
 view: View?,  
 position: Int,  
 id: Long  
 ) {  
 val selectedItem = spinnerlist[position]  
 Toast.makeText(this@MainActivity4,"Clicked : $selectedItem", Toast.*LENGTH\_SHORT*).show()  
 }  
  
 override fun onNothingSelected(parent: AdapterView<\*>?) {  
 Toast.makeText(this@MainActivity4,"Nothing Selected",Toast.*LENGTH\_SHORT*).show()  
 }  
 }  
 }  
}

**b) Layout File:**

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity4">  
  
 <Spinner  
 android:id="@+id/spinner"  
 android:layout\_width="409dp"  
 android:layout\_height="wrap\_content"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**2.Spinner With Snack Bar**

**a) Kotlin File**

package com.pulkitshubham.gridlayout  
  
import android.content.res.Configuration  
import android.os.Bundle  
import android.view.View  
import android.widget.AdapterView  
import android.widget.ArrayAdapter  
import android.widget.Spinner  
import androidx.activity.enableEdgeToEdge  
import androidx.appcompat.app.AppCompatActivity  
import com.google.android.material.snackbar.Snackbar  
import java.util.Locale  
  
class SnackBar : AppCompatActivity() {  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 *enableEdgeToEdge*()  
 setContentView(R.layout.*activity\_snack\_bar*)  
  
 val items = *listOf*("English", "Hindi")  
 val spinner = findViewById<Spinner>(R.id.*spinnerlanguage*)  
 val adapter2 = ArrayAdapter(this, android.R.layout.*simple\_list\_item\_1*, items)  
 spinner.*adapter* = adapter2  
  
 spinner.*onItemSelectedListener* = object : AdapterView.OnItemSelectedListener {  
 override fun onItemSelected(  
 parent: AdapterView<\*>?,  
 view: View?,  
 position: Int,  
 id: Long  
 ) {  
 val selectedItem = items[position]  
 *// Find the root view to display Snackbar* val rootView = findViewById<View>(android.R.id.*content*)  
  
 *// Replace Toast with Snackbar* Snackbar.make(rootView, "Clicked : $selectedItem", Snackbar.*LENGTH\_SHORT*).show()  
  
 when (selectedItem) {  
 "English" -> setLocale("en")  
 "Hindi" -> setLocale("hi")  
 }  
 }  
  
 override fun onNothingSelected(parent: AdapterView<\*>?) {  
 *// Do nothing* }  
 }  
 }  
  
 private fun setLocale(langCode: String) {  
 val currentLang = *resources*.*configuration*.*locales*.get(0).*language* if (langCode != currentLang) {  
 val locale = Locale(langCode)  
 Locale.setDefault(locale)  
 val config = Configuration(*resources*.*configuration*)  
 config.setLocale(locale)  
 *resources*.updateConfiguration(config, *resources*.*displayMetrics*)  
 recreate()  
 }  
 }  
}

**b) Layout File**

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".SnackBar"  
 android:background="@color/white"  
 android:orientation="vertical">  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="@string/select\_language"  
 android:fontFamily="@font/poppinsblack"  
 android:layout\_marginTop="50dp"  
 android:textSize="30sp"/>  
 <Spinner  
 android:id="@+id/spinnerlanguage"  
 android:layout\_marginTop="50dp"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"/>  
  
</LinearLayout>

**3.List View and Spinner Combined**

**a) Kotlin File**

package com.pulkitshubham.gridlayout  
  
import android.annotation.SuppressLint  
import android.os.Bundle  
import android.view.View  
import android.widget.AdapterView  
import android.widget.ArrayAdapter  
import android.widget.ListView  
import android.widget.Spinner  
import android.widget.Toast  
import androidx.activity.enableEdgeToEdge  
import androidx.appcompat.app.AppCompatActivity  
import androidx.core.view.ViewCompat  
import androidx.core.view.WindowInsetsCompat  
  
class MainActivity3 : AppCompatActivity() {  
 @SuppressLint("MissingInflatedId")  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 *enableEdgeToEdge*()  
 setContentView(R.layout.*activity\_main3*)  
 val items = *listOf*("Jan ☺️","Feb 😁","March 😂","April 😒","May 😍","June 😎")  
 val listView = findViewById<ListView>(R.id.*mylistview*)  
 val adapter = ArrayAdapter(this,android.R.layout.*simple\_list\_item\_1*,items)  
 listView.*adapter* = adapter  
 listView.setOnItemClickListener **{** parent, view, position, id **->** val selectedItem = items[position]  
 Toast.makeText(this,"Clicked : $selectedItem",Toast.*LENGTH\_SHORT*).show()  
 **}** val spinner = findViewById<Spinner>(R.id.*spinner2*)  
 val adapter2 = ArrayAdapter(this,android.R.layout.*simple\_list\_item\_1*,items)  
 spinner.*adapter* = adapter2  
 spinner.*onItemSelectedListener*=object: AdapterView.OnItemSelectedListener{  
 override fun onItemSelected(  
 parent: AdapterView<\*>?,  
 view: View?,  
 position: Int,  
 id: Long  
 ) {  
 val selectedItem = items[position]  
 Toast.makeText(this@MainActivity3,"Clicked : $selectedItem",Toast.*LENGTH\_SHORT*).show()  
 }  
  
 override fun onNothingSelected(parent: AdapterView<\*>?) {  
 Toast.makeText(this@MainActivity3,"Nothing Selected",Toast.*LENGTH\_SHORT*).show()  
 }  
 }  
 }  
}

**b) Layout File**

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity3"  
 android:layout\_marginTop="20dp">  
 <ListView  
 android:id="@+id/mylistview"  
 android:layout\_width="409dp"  
 android:layout\_height="400dp"  
 tools:layout\_editor\_absoluteX="1dp"  
 tools:layout\_editor\_absoluteY="1dp"  
 tools:ignore="MissingConstraints" />  
  
 <Spinner  
 android:id="@+id/spinner2"  
 android:layout\_width="409dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="24dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@+id/mylistview"  
 app:layout\_constraintVertical\_bias="0.694" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**4.App Localization**

**a) Kotlin file**

package com.pulkitshubham.gridlayout  
  
import android.content.res.Configuration  
import android.os.Bundle  
import android.view.View  
import android.widget.Button  
import androidx.activity.enableEdgeToEdge  
import androidx.appcompat.app.AppCompatActivity  
import java.util.Locale  
import com.google.android.material.snackbar.Snackbar  
  
class AppLocalization : AppCompatActivity() {  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 *enableEdgeToEdge*()  
 setContentView(R.layout.*activity\_app\_localization*)  
 val rootView: View = findViewById<View>(android.R.id.*content*)  
 val snackBar = Snackbar.make(rootView, "Logged in Successfully", Snackbar.*LENGTH\_SHORT*)  
 snackBar.setAction("Undo") **{** val undo = Snackbar.make(rootView, "Log in Cancelled", Snackbar.*LENGTH\_SHORT*)  
 undo.setBackgroundTint(*resources*.getColor(R.color.*Red*))  
 undo.setTextColor(*resources*.getColor(R.color.*white*))  
 undo.show()  
  
  
 **}** snackBar.setBackgroundTint(*resources*.getColor(R.color.*yellow*))  
*// snackBar.view.setBackgroundColor(resources.getColor(R.color.yellow))* snackBar.setTextColor(*resources*.getColor(R.color.*black*))  
 snackBar.setActionTextColor(*resources*.getColor(R.color.*Red*))  
 snackBar.show()  
  
 val buttonEnglish = findViewById<Button>(R.id.*mybutton*)  
 val buttonHindi = findViewById<Button>(R.id.*mybutton2*)  
 buttonEnglish.setOnClickListener **{** setLocale("en")  
 **}** buttonHindi.setOnClickListener **{** setLocale("hi")  
 **}** }  
  
 private fun setLocale(langCode: String) {  
 val currentLang = *resources*.*configuration*.*locales*.get(0).*language* if (langCode != currentLang) {  
 val locale = Locale(langCode)  
 Locale.setDefault(locale)  
 val config = Configuration(*resources*.*configuration*)  
 config.setLocale(locale)  
 *resources*.updateConfiguration(config, *resources*.*displayMetrics*)  
 recreate()  
 }  
 }  
}

**b) Layout File**

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".AppLocalization"  
 tools:layout\_editor\_absoluteX="0dp"  
 tools:layout\_editor\_absoluteY="-28dp"  
 android:background="@color/white">  
  
 <Button  
 android:id="@+id/mybutton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:backgroundTint="#57C7D5"  
 android:text="@string/login"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.738"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.865"  
 android:clickable="true"/>  
  
 <TextView  
 android:id="@+id/tv1"  
 android:layout\_width="290dp"  
 android:layout\_height="45dp"  
 android:text="@string/first\_name"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.322"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.367" />  
  
 <TextView  
 android:id="@+id/tv2"  
 android:layout\_width="290dp"  
 android:layout\_height="45dp"  
 android:text="@string/last\_name"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.322"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.45" />  
  
 <TextView  
 android:id="@+id/tv3"  
 android:layout\_width="333dp"  
 android:layout\_height="51dp"  
 android:text="@string/email"  
 android:textSize="19sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.632" />  
  
 <ImageView  
 android:id="@+id/imageView2"  
 android:layout\_width="100dp"  
 android:layout\_height="100dp"  
 android:src="@drawable/programmer"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.498"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.142" />  
  
 <TextView  
 android:id="@+id/tv4"  
 android:layout\_width="290dp"  
 android:layout\_height="45dp"  
 android:text="@string/reg\_no"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.322"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.533" />  
  
 <Button  
 android:id="@+id/mybutton2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="76dp"  
 android:backgroundTint="#57C7D5"  
 android:text="@string/signup"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toStartOf="@+id/mybutton"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.865"  
 android:clickable="true"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

**c)String Resource Files**

<resources xmlns:tools="http://schemas.android.com/tools">  
 <string name="first\_name">First Name : Pulkit</string>  
 <string name="last\_name">Last Name : Shubham</string>  
 <string name="email">Email : pulkitshubham11@gmail.com</string>  
 <string name="reg\_no">Registration No : 12215956</string>  
 <string name="login">English</string>  
 <string name="signup">Hindi</string>  
 <string name="select\_language">Select Language</string>  
</resources>

**For Hindi:**

*<?*xml version="1.0" encoding="utf-8"*?>*<resources>  
 <string name="first\_name">पहला नाम: पुलकित</string>  
 <string name="last\_name">अंतिम नाम: शुभम्</string>  
 <string name="email">ईमेल: pulkitshubham11@gmail.com</string>  
 <string name="reg\_no">पंजीकरण संख्या : 12215956</string>  
 <string name="login">अंग्रेज़ी</string>  
 <string name="signup">हिंदी</string>  
 <string name="select\_language">भाषा चुनें</string>  
</resources>

**5.Intent: (Using Binding)**

**Implicit Intent:**

**a) Kotlin File:**

package com.pulkitshubham.intent  
  
import android.content.Intent  
import android.net.Uri  
import android.os.Bundle  
import android.provider.MediaStore  
import android.widget.EditText  
import androidx.activity.enableEdgeToEdge  
import androidx.appcompat.app.AppCompatActivity  
import androidx.core.view.ViewCompat  
import androidx.core.view.WindowInsetsCompat  
import com.pulkitshubham.intent.databinding.ActivityMainBinding  
  
class MainActivity : AppCompatActivity() {  
 private val binding: ActivityMainBinding by *lazy***{** ActivityMainBinding.inflate(*layoutInflater*)  
 **}** override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(binding.*root*)  
 binding.openWeb.setOnClickListener **{** val intent = Intent(Intent.*ACTION\_VIEW*)  
 intent.*data* = Uri.parse("https://www.google.com")  
 startActivity(intent)  
 finish()  
 **}** binding.openPhone.setOnClickListener **{** val dialIntent = Intent(Intent.*ACTION\_DIAL*, Uri.parse("tel:1234567890"))  
 startActivity(dialIntent)  
 finish()  
 **}** binding.openCamera.setOnClickListener**{** val camIntent = Intent(MediaStore.*ACTION\_IMAGE\_CAPTURE*)  
 startActivity(camIntent)  
 finish()  
 **}** binding.shareButton.setOnClickListener **{** val text = findViewById<EditText>(R.id.*editText*).*text*.toString()  
 val shareIntent = Intent(Intent.*ACTION\_SEND*)  
 shareIntent.*type* = "text/plain"  
 shareIntent.putExtra(Intent.*EXTRA\_TEXT*, text)  
 startActivity(Intent.createChooser(shareIntent,"share"))  
 **}** }  
}

**b) Layout File**

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity"  
 android:orientation="vertical"  
 android:background="@color/white">  
  
*<!-- <Button-->  
<!-- android:id="@+id/openWeb"-->  
<!-- android:layout\_width="wrap\_content"-->  
<!-- android:layout\_height="wrap\_content"-->  
<!-- android:layout\_gravity="center"-->  
<!-- android:layout\_margin="50dp"-->  
<!-- android:text="@string/open\_web\_page"-->  
<!-- android:clickable="true"/>-->* <ImageButton  
 android:id="@+id/openWeb"  
 android:layout\_width="50dp"  
 android:layout\_height="50dp"  
 android:layout\_gravity="center"  
 android:background="@drawable/chrome"  
 android:clickable="true"  
 android:focusable="true"  
 android:layout\_marginTop="70dp"/>  
  
 <ImageButton  
 android:id="@+id/openPhone"  
 android:layout\_width="50dp"  
 android:layout\_height="50dp"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="70dp"  
 android:focusable="true"  
 android:background="@drawable/phone"  
 android:text="@string/open\_phone\_call"  
 android:clickable="true"/>  
  
 <ImageButton  
 android:id="@+id/openCamera"  
 android:layout\_width="50dp"  
 android:layout\_height="50dp"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="70dp"  
 android:focusable="true"  
 android:background="@drawable/camera"  
 android:clickable="true"/>  
 <EditText  
 android:id="@+id/editText"  
 android:layout\_width="200dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="70dp"  
 android:hint="@string/message"  
 />  
 <ImageButton  
 android:id="@+id/shareButton"  
 android:layout\_width="50dp"  
 android:layout\_height="50dp"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="70dp"  
 android:focusable="true"  
 android:background="@drawable/share"  
 android:clickable="true"/>  
  
  
  
  
</LinearLayout>

**2. Explicit Intent**

**a) Main Activity**

package com.pulkitshubham.demo  
  
import android.annotation.SuppressLint  
import android.app.Activity  
import android.content.Intent  
import android.os.Bundle  
import android.widget.Button  
import android.widget.EditText  
import android.widget.ImageButton  
import android.widget.TextView  
import android.widget.Toast  
import androidx.activity.enableEdgeToEdge  
import androidx.appcompat.app.AppCompatActivity  
import androidx.core.view.ViewCompat  
import androidx.core.view.WindowInsetsCompat  
import com.pulkitshubham.demo.databinding.ActivityMainBinding  
  
class MainActivity : AppCompatActivity() {  
 private val binding: ActivityMainBinding by *lazy***{** ActivityMainBinding.inflate(*layoutInflater*)  
 **}** override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(binding.*root*)  
 binding.button1.setOnClickListener **{** val name = binding.username.*text*.toString()  
 val intent = Intent(this, MainActivity3::class.*java*)  
 intent.putExtra("USER\_NAME", name)  
 startActivity(intent)  
 **}** }  
}

**b) Main Activity 3**

package com.pulkitshubham.demo  
  
import android.content.Intent  
import android.os.Bundle  
import androidx.activity.enableEdgeToEdge  
import androidx.appcompat.app.AppCompatActivity  
import androidx.core.view.ViewCompat  
import androidx.core.view.WindowInsetsCompat  
import com.pulkitshubham.demo.databinding.ActivityMain3Binding  
import com.pulkitshubham.demo.databinding.ActivityMainBinding  
  
class MainActivity3 : AppCompatActivity() {  
 private val binding: ActivityMain3Binding by *lazy***{** ActivityMain3Binding.inflate(*layoutInflater*)  
 **}** override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 *enableEdgeToEdge*()  
 setContentView(binding.*root*)  
 val name = *intent*.getStringExtra("USER\_NAME")  
 binding.displayName.*text* = name  
  
 }  
}