**DATA STORE**

**I. Build.gradle (Module :app)**

buildFeatures **{** viewBinding true  
**}**

dependencies **{**   
 implementation("androidx.datastore:datastore-preferences:1.0.0")  
**}**

**II. Java**

1. **MainActivity**

package com.example.datastoren01  
  
import android.content.Context  
import androidx.appcompat.app.AppCompatActivity  
import android.os.Bundle  
import android.view.View  
import android.widget.AdapterView  
import android.widget.ArrayAdapter  
import android.widget.Toast  
import androidx.datastore.core.DataStore  
import androidx.datastore.preferences.core.Preferences  
import androidx.datastore.preferences.core.edit  
import androidx.datastore.preferences.core.stringPreferencesKey  
import androidx.datastore.preferences.preferencesDataStore  
import androidx.recyclerview.widget.LinearLayoutManager  
import androidx.recyclerview.widget.RecyclerView  
import com.example.datastoren01.databinding.ActivityMainBinding  
import kotlinx.coroutines.CoroutineScope  
import kotlinx.coroutines.Dispatchers  
import kotlinx.coroutines.flow.Flow  
import kotlinx.coroutines.flow.first  
import kotlinx.coroutines.flow.map  
import kotlinx.coroutines.launch  
  
val Context.*dataStore*: DataStore<Preferences> by *preferencesDataStore*(name = "settings")  
  
class MainActivity : AppCompatActivity() {  
 lateinit var binding: ActivityMainBinding  
 val items = ArrayList<MyAndroid>()  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 binding = ActivityMainBinding.inflate(*layoutInflater*)  
 setContentView(binding.*root*)  
 addEvents()  
 binding.rvListAndroid.*layoutManager* = LinearLayoutManager(this, RecyclerView.*VERTICAL*, false)  
 binding.rvListAndroid.*adapter* = MyAndroidRVAdapter(items)  
 }  
  
 fun addEvents() {  
 val options = *arrayOf*("Option1", "Option2", "Option3")  
 val adapter = ArrayAdapter(this, android.R.layout.*simple\_spinner\_item*, options)  
 adapter.setDropDownViewResource(android.R.layout.*simple\_spinner\_dropdown\_item*)  
 binding.mySpinner.*adapter* = adapter  
 binding.mySpinner.*onItemSelectedListener* = object:AdapterView.OnItemSelectedListener {  
 override fun onItemSelected(parent: AdapterView<\*>?, p1: View?, p2: Int, p3: Long) {  
 Toast.makeText(this@MainActivity,  
 "Your selected ${options[p2]}", Toast.*LENGTH\_SHORT*).show()  
 }  
  
 override fun onNothingSelected(parent: AdapterView<\*>?) {  
 *TODO*("Not yet implemented")  
 }  
 }  
  
 items.add(MyAndroid(1, R.drawable.*cupcake*, "Cupcake", "API level 4"))  
 items.add(MyAndroid(2, R.drawable.*donut*, "Donut", "API level 4"))  
 items.add(MyAndroid(3, R.drawable.*eclairs*, "Eclairs", "API level 5"))  
 items.add(MyAndroid(4, R.drawable.*froyo*, "Froyo", "API level 8"))  
 items.add(MyAndroid(5, R.drawable.*gingerbread*, "Ginger Bread", "API level 9"))  
 items.add(MyAndroid(6, R.drawable.*honeycomb*, "Honey comb", "API level 11"))  
 items.add(MyAndroid(7, R.drawable.*jellybean*, "Jelly bean", "API level 16"))  
 items.add(MyAndroid(8, R.drawable.*kitkat*, "KitKat", "API level 19"))  
 items.add(MyAndroid(9, R.drawable.*lolipop*, "Lolipop", "API level 21"))  
 items.add(MyAndroid(10, R.drawable.*oreo*, "Oreo", "API level 26"))  
  
 binding.myCustomSpinner.*adapter* = MyAndroidAdapter(this, items)  
 binding.btnSave.setOnClickListener **{** *CoroutineScope*(Dispatchers.IO).*launch* **{** save(binding.etKey.*text*.toString(), binding.etValue.*text*.toString())  
 **}  
 }** binding.btnRead.setOnClickListener **{** *CoroutineScope*(Dispatchers.IO).*launch* **{** val value = read(binding.etReadingKey.*text*.toString())  
 binding.tvResult.setText(value)  
 **}  
 }** }  
  
 suspend fun read(key:String): String {  
 val \_key = *stringPreferencesKey*(key)  
 val \_value: Flow<String> = *dataStore*.data.*map* **{** settings **->** settings[\_key] ?: "No value"  
 **}** return \_value.first().toString()  
 }  
  
 suspend fun save(key:String, value: String) {  
 val \_key = *stringPreferencesKey*(key)  
 *dataStore*.edit **{** settings **->** settings[\_key] = value  
 **}** }  
}

1. **MyAndroid**

package com.example.datastoren01  
  
data class MyAndroid(  
 val id: Int,  
 val image: Int,  
 val name: String,  
 val description: String  
)

1. **MyAndroidAdapter**

package com.example.datastoren01  
  
import android.content.Context  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import android.widget.BaseAdapter  
import android.widget.ImageView  
import android.widget.TextView  
  
class MyAndroidAdapter(val context: Context, val items: ArrayList<MyAndroid>) : BaseAdapter() {  
 override fun getCount(): Int {  
 return items.size  
 }  
  
 override fun getItem(p0: Int): Any {  
 *TODO*("Not yet implemented")  
 }  
  
 override fun getItemId(p0: Int): Long {  
 return 0  
 }  
  
 override fun getView(p0: Int, p1: View?, p2: ViewGroup?): View {  
 val view = LayoutInflater.from(context).inflate(R.layout.*custom\_spinner\_item*, null)  
 val icon = view.findViewById<ImageView>(R.id.*iv\_spinner*)  
 val name = view.findViewById<TextView>(R.id.*tv\_spinner*)  
 icon.setImageResource(items[p0].image)  
 name.setText(items[p0].name)  
 return view  
 }  
}

1. **MyAndroidRVAdapter**

package com.example.datastoren01  
  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import android.widget.ImageView  
import android.widget.TextView  
import androidx.recyclerview.widget.RecyclerView  
  
class MyAndroidRVAdapter(private val dataSet: ArrayList<MyAndroid>) :  
 RecyclerView.Adapter<MyAndroidRVAdapter.ViewHolder>() {

class ViewHolder(view: View) : RecyclerView.ViewHolder(view) {  
 val iv\_image: ImageView  
 val tv\_name: TextView  
 val tv\_description: TextView  
  
 init {iv\_image = view.findViewById(R.id.*iv\_rv\_image*)  
 tv\_name = view.findViewById(R.id.*tv\_rv\_name*)  
 tv\_description = view.findViewById(R.id.*tv\_rv\_desciption*)  
 }  
 }  
override fun onCreateViewHolder(viewGroup: ViewGroup, viewType: Int): ViewHolder {

val view = LayoutInflater.from(viewGroup.*context*)  
 .inflate(R.layout.*rv\_android\_row\_item*, viewGroup, false)  
  
 return ViewHolder(view)  
 }  
override fun onBindViewHolder(viewHolder: ViewHolder, position: Int) {viewHolder.iv\_image.setImageResource(dataSet[position].image)  
 viewHolder.tv\_name.setText(dataSet[position].name)  
 viewHolder.tv\_description.setText(dataSet[position].description)  
 }

override fun getItemCount() = dataSet.size  
}

**III. Res -> Layout**

1. **activity\_main.xml**

*<?*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:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:padding="10dp"  
 android:gravity="center"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/etKey"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Key"/>  
  
 <EditText  
 android:id="@+id/etValue"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Value"/>  
  
 <Button  
 android:id="@+id/btnSave"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Save"/>  
  
 <EditText  
 android:id="@+id/etReadingKey"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Reading Key"/>  
  
 <Button  
 android:id="@+id/btnRead"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Read"/>  
  
 <TextView  
 android:id="@+id/tvResult"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="24sp"  
 android:padding="10dp"  
 android:gravity="center"  
 android:text="abc"/>  
  
 <Spinner  
 android:id="@+id/mySpinner"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"/>  
  
 <Spinner  
 android:id="@+id/myCustomSpinner"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"/>  
   
 <androidx.recyclerview.widget.RecyclerView  
 android:id="@+id/rv\_list\_android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"/>  
</LinearLayout>

1. **custom\_spinner\_item.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:orientation="horizontal"  
 android:gravity="center\_vertical"  
 android:layout\_margin="6dp"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content">  
  
 <ImageView  
 android:id="@+id/iv\_spinner"  
 android:layout\_width="50dp"  
 android:layout\_height="50dp"  
 android:src="@drawable/eclairs"/>  
  
 <TextView  
 android:id="@+id/tv\_spinner"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:text="Eclairs"  
 android:textSize="20sp"  
 android:textStyle="bold"/>  
</LinearLayout>

1. **rv\_android\_row\_item.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:orientation="horizontal"  
 android:gravity="center\_vertical"  
 android:layout\_margin="6dp"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content">  
  
 <ImageView  
 android:id="@+id/iv\_rv\_image"  
 android:layout\_width="50dp"  
 android:layout\_height="50dp"  
 android:src="@drawable/eclairs"/>  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical">  
  
 <TextView  
 android:id="@+id/tv\_rv\_name"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:text="Eclairs"  
 android:textSize="20sp"  
 android:textStyle="bold"/>  
  
 <TextView  
 android:id="@+id/tv\_rv\_desciption"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="2dp"  
 android:text="Eclairs"  
 android:textSize="16sp"/>  
 </LinearLayout>  
</LinearLayout>

