Shyryn Akan

Assignment 1, Mobile Programming

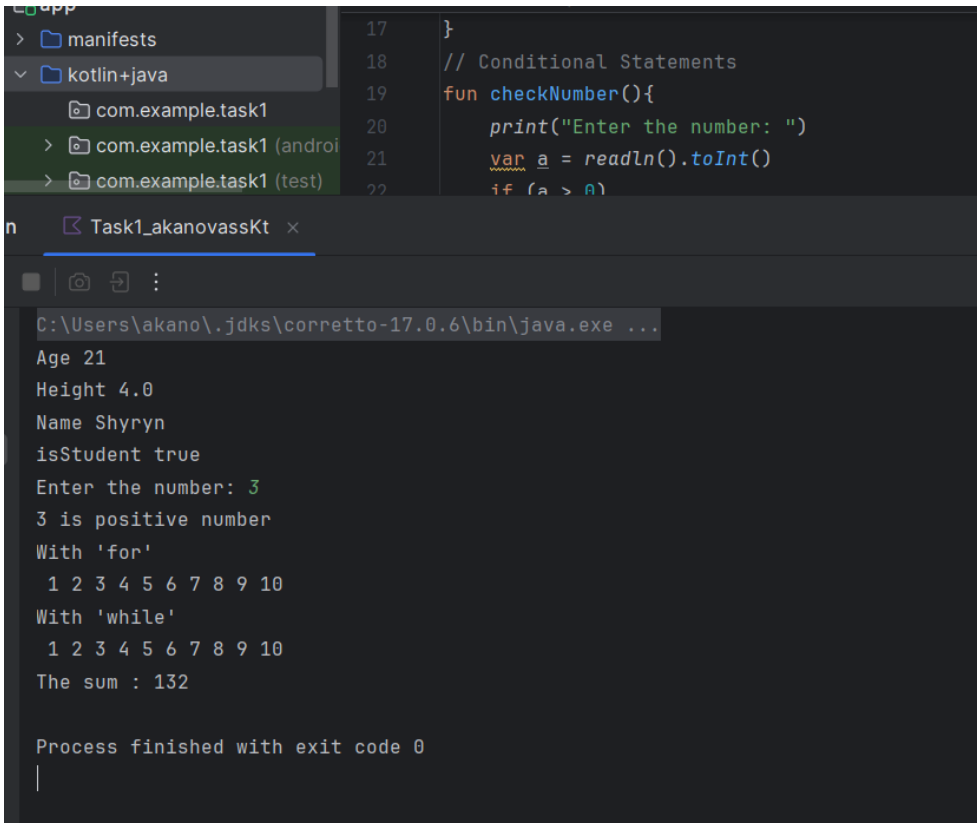
Task1

task1_akanovass.kt

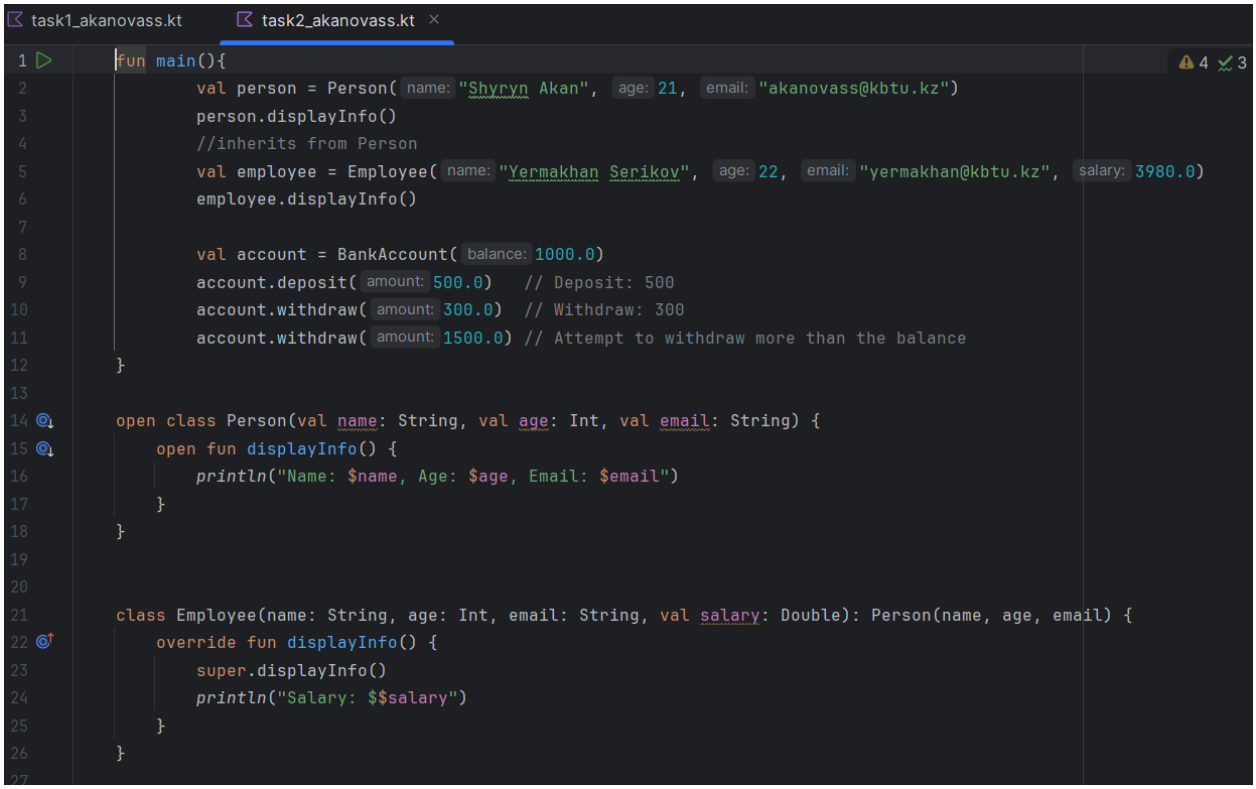
```kotlin
//task1
fun main(){
    val age: Int = 21
    val height: Double = 4.0
    val name: String = "Shyryn"
    val isStudent: Boolean = true

    println("Age $age")
    println("Height $height")
    println("Name $name")
    println("isStudent $isStudent")

    checkNumber()
    printNumbersFor()
    printNumbersWhile()
    listOfNumbers()
}
// Conditional Statements
fun checkNumber(){
    print("Enter the number: ")
    var a = readln().toInt()
    if (a > 0)
        println("$a is positive number")
    else if (a < 0)
```

```
19      fun checkNumber(){
26          else
27              println("$a is zero number")
28      }
29      // Loops
30      fun printNumbersFor(){
31          println("With 'for' ")
32          for (i in 1 ≤  ..  ≤ 10){
33              println(i)
34          }
35      }
36
37      fun printNumbersWhile(){
38          println("With 'while' ")
39          var a = 1
40          while (a < 11){
41              println(a)
42              a++
43          }
44      }
45      //Collections:
46      fun listOfNumbers(){
47          var listsNums  = listOf(1,2,8,9,55,23,12,22)
48          var sum = 0
49          for (i in listsNums){
50              sum += i
51          }
52          println("The sum : $sum")
53      }
54
```

Result:


manifests
kotlin+java
com.example.task1
com.example.task1 (androi
com.example.task1 (test)
}
// Conditional Statements
fun checkNumber(){
print("Enter the number: ")
var a = readln().toInt()
Task1_akanovassKt
C:\Users\akano\.jdks\corretto-17.0.6\bin\java.exe ...
Age 21
Height 4.0
Name Shyryn
isStudent true
Enter the number: 3
3 is positive number
With 'for'
1 2 3 4 5 6 7 8 9 10
With 'while'
1 2 3 4 5 6 7 8 9 10
The sum : 132
Process finished with exit code 0

Task2:


task1_akanovass.kt
task2_akanovass.kt
fun main(){
val person = Person(name: "Shyryn Akan", age: 21, email: "akanovass@kbtu.kz")
person.displayInfo()
//inherits from Person
val employee = Employee(name: "Yermakhan Serikov", age: 22, email: "yermakhan@kbtu.kz", salary: 3980.0)
employee.displayInfo()
val account = BankAccount(balance: 1000.0)
account.deposit(amount: 500.0) // Deposit: 500
account.withdraw(amount: 300.0) // Withdraw: 300
account.withdraw(amount: 1500.0) // Attempt to withdraw more than the balance
}
open class Person(val name: String, val age: Int, val email: String) {
open fun displayInfo() {
println("Name: $name, Age: $age, Email: $email")
}
}
class Employee(name: String, age: Int, email: String, val salary: Double): Person(name, age, email) {
override fun displayInfo() {
super.displayInfo()
println("Salary: $$salary")
}
}

```kotlin
class Employee(name: String, age: Int, email: String, val salary: Double): Person(name, age, email) {
}


class BankAccount(private var balance: Double) {
    fun deposit(amount: Double) {
        if (amount > 0) {
            balance += amount
            println("Deposited: $$amount, New Balance: $$balance")
        }
    }

    fun withdraw(amount: Double) {
        if (amount > 0 && balance >= amount) {
            balance -= amount
            println("Withdrew: $$amount, New Balance: $$balance")
        } else {
            println("Insufficient funds")
        }
    }
}
```

Result:

```
Run    Task2_akanovassKt
C:\Users\akano\.jdks\corretto-17.0.6\bin\java.exe ...
Name: Shyryn Akan, Age: 21, Email: akanovass@kbtu.kz
Name: Yermakhan Serikov, Age: 22, Email: yermakhan@kbtu.kz
Salary: $3980.0
Deposited: $500.0, New Balance: $1500.0
Withdrew: $300.0, New Balance: $1200.0
Insufficient funds

Process finished with exit code 0
```

Task3:

task1_akanovass.kt task2_akanovass.kt Task3_akanovass.kt

```kotlin
fun main() {
    println("Enter 2 number: ")
    var num1 : Int = readln().toInt()
    var num2 : Int = readln().toInt()
    println("Number 1 is: ${num1}")
    println("Number 2 is: ${num2}")

    // Basic Function: Sum of two integers
    val sumResult = sum(num1, num2)
    println("Sum of $num1 and $num2: $sumResult")

    // Lambda Function: Multiply two numbers
    val multiplyLambda: (Int, Int) -> Int = { a, b -> a * b }
    val multiplyResult = multiplyLambda(num2, num1)
    println("Multiplication of $num1 and $num2 : $multiplyResult")

    // Higher-Order Function: Apply a lambda to two integers
    val resultOfHigher = applyOperation(num1, num2, multiplyLambda)
    println("Result of applying lambda to $num1 and $num2: $resultOfHigher")
}

fun sum(a: Int, b: Int): Int {
    return a + b
}

fun applyOperation(a: Int, b: Int, operation: (Int, Int) -> Int): Int {
    return operation(a, b)
}
```

Result:

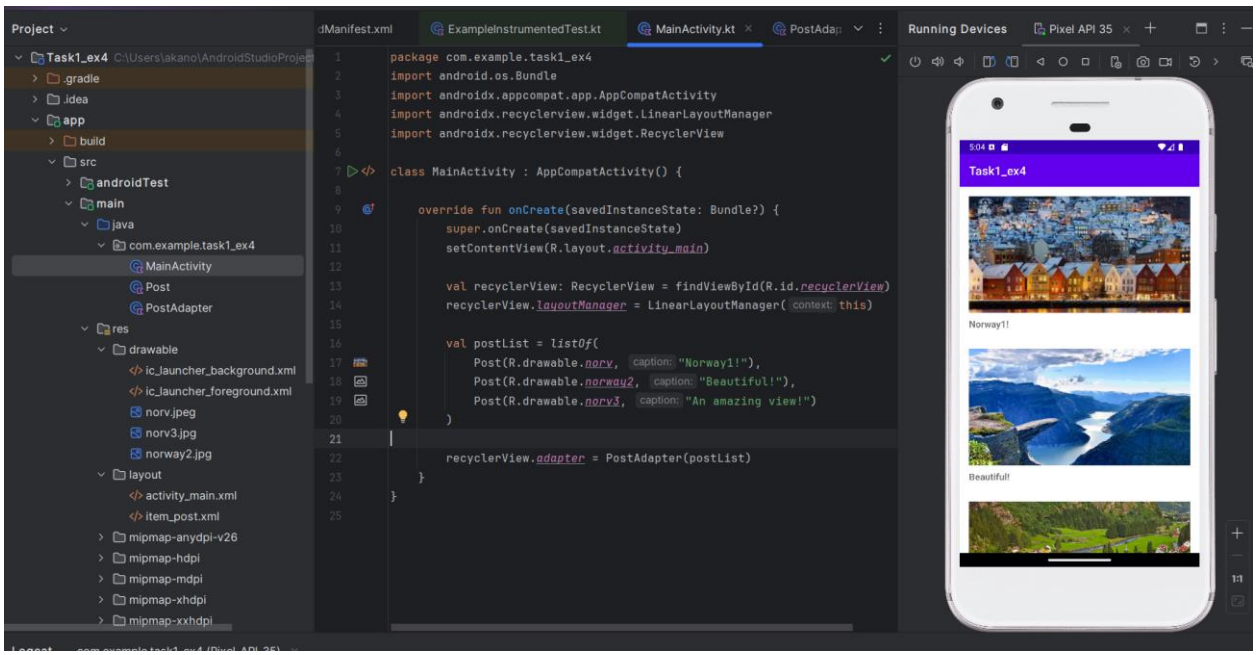
Task3_akanovass.kt

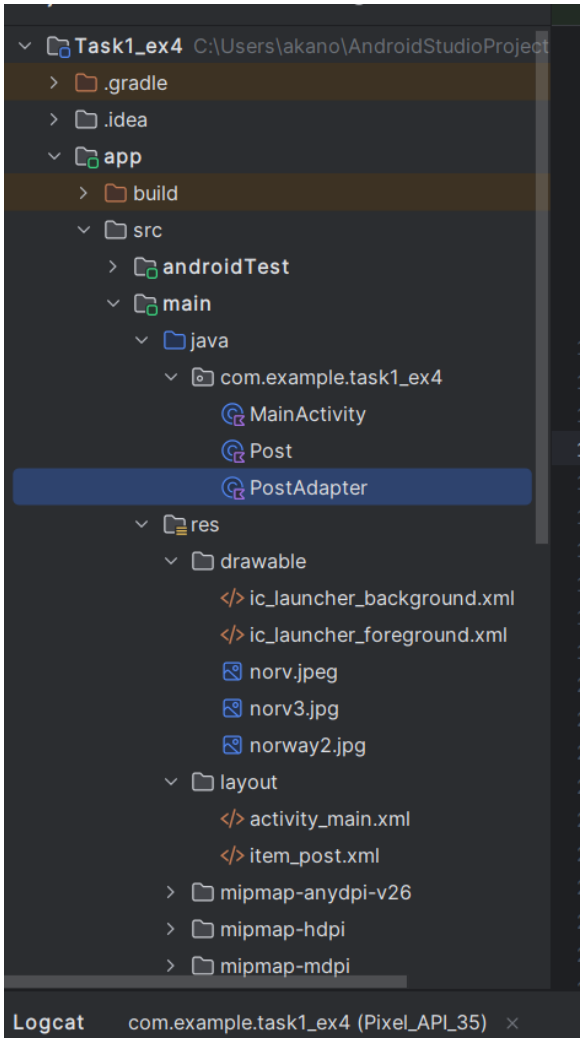
res

Task3_akanovassKt

```
C:\Users\akano\.jdks\corretto-17.0.6\bin\java.exe ...
Enter 2 number:
7
3
Number 1 is: 7
Number 2 is: 3
Sum of 7 and 3: 10
Multiplication of 7 and 3 : 21
Result of applying lambda to 7 and 3: 21

Process finished with exit code 0
```

Task3


Project
Task1_ex4 C:\Users\akano\AndroidStudioProject
.gradle
.idea
app
build
src
androidTest
main
java
com.example.task1_ex4
MainActivity
Post
PostAdapter
res
drawable
ic_launcher_background.xml
ic_launcher_foreground.xml
norv.jpeg
norv3.jpg
norway2.jpg
layout
activity_main.xml
item_post.xml
mipmap-anydpi-v26
mipmap-hdpi
mipmap-mdpi
mipmap-xhdpi
mipmap-xxhdpi
AndroidManifest.xml
ExampleInstrumentedTest.kt
MainActivity.kt
PostAdap
package com.example.task1_ex4
import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import androidx.recyclerview.widget.LinearLayoutManager
import androidx.recyclerview.widget.RecyclerView
class MainActivity : AppCompatActivity() {
override fun onCreate(savedInstanceState: Bundle?) {
super.onCreate(savedInstanceState)
setContentView(R.layout.activity_main)
val recyclerView: RecyclerView = findViewById(R.id.recyclerView)
recyclerView.layoutManager = LinearLayoutManager(context: this)
val postList = listOf(
Post(R.drawable.norv, caption: "Norway1!"),
Post(R.drawable.norway2, caption: "Beautiful!"),
Post(R.drawable.norv3, caption: "An amazing view!")
)
recyclerView.adapter = PostAdapter(postList)
}
}
Running Devices
Pixel API 35
Task1_ex4
Norway1!
Beautiful!

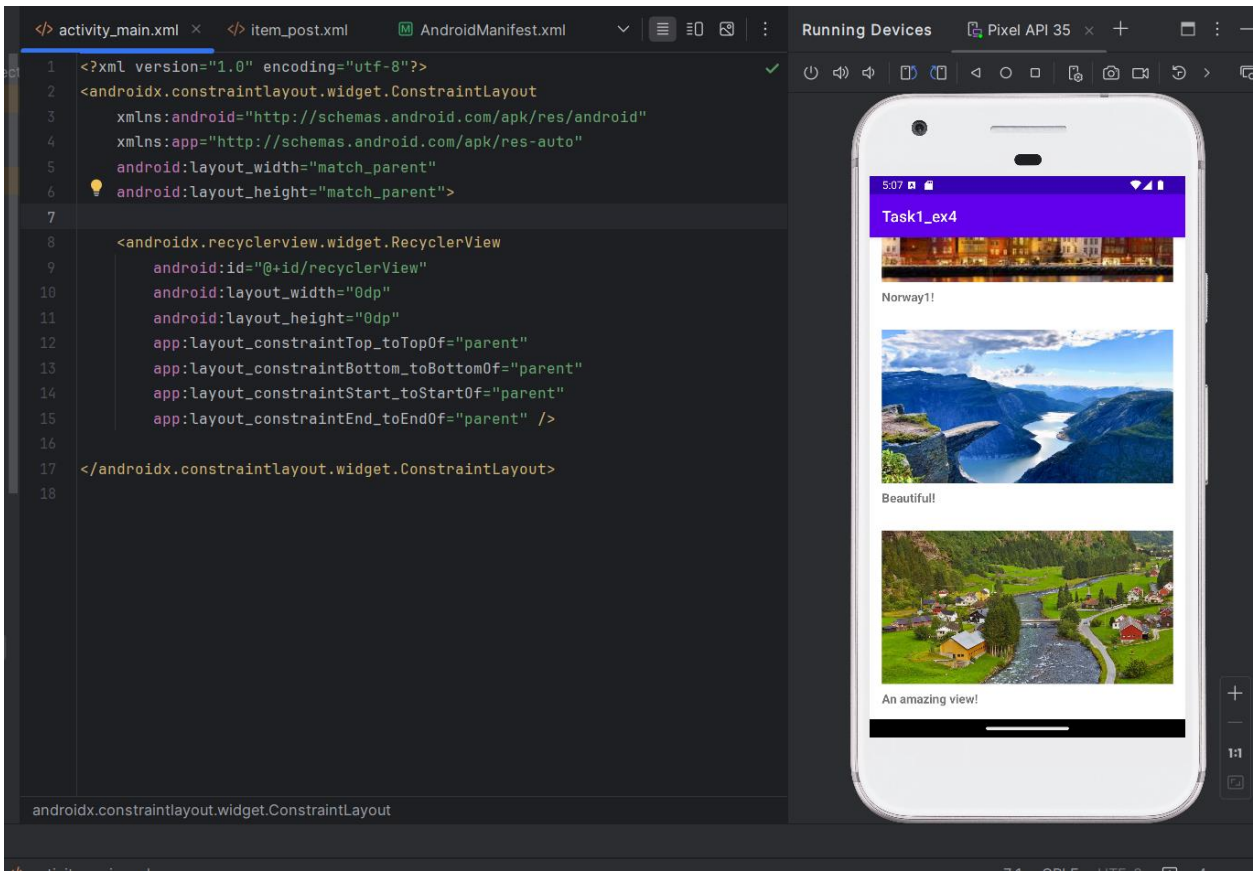

Task1_ex4 C:\Users\akano\AndroidStudioProject
.gradle
.idea
app
build
src
androidTest
main
java
com.example.task1_ex4
MainActivity
Post
PostAdapter
res
drawable
ic_launcher_background.xml
ic_launcher_foreground.xml
norv.jpeg
norv3.jpg
norway2.jpg
layout
activity_main.xml
item_post.xml
mipmap-anydpi-v26
mipmap-hdpi
mipmap-mdpi
Logcat
com.example.task1_ex4 (Pixel_API_35)

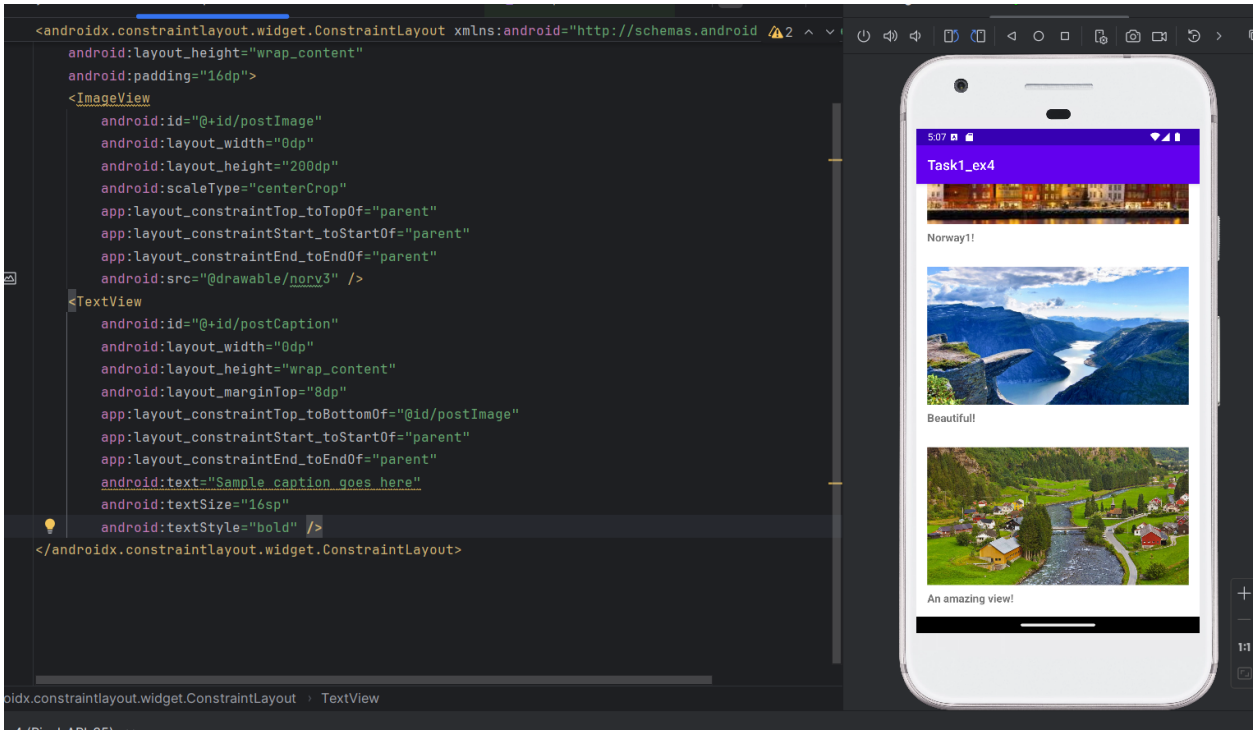
AndroidManifest.xml | ExampleInstrumentedTest.kt | MainActivity.kt | PostAdapter.kt | Post.kt | ic_launcher_ba

```kotlin
import android.widget.ImageView
import android.widget.TextView

class PostAdapter(private val postList: List<Post>) : RecyclerView.Adapter<PostAdapter.PostViewHolder>() {

    class PostViewHolder(view: View) : RecyclerView.ViewHolder(view) {
        val postImage: ImageView = view.findViewById(R.id.postImage)
        val postCaption: TextView = view.findViewById(R.id.postCaption)
    }

    override fun onCreateViewHolder(parent: ViewGroup, viewType: Int): PostViewHolder {
        val view = LayoutInflater.from(parent.context)
            .inflate(R.layout.item_post, parent, attachToRoot: false)
        return PostViewHolder(view)
    }

    override fun onBindViewHolder(holder: PostViewHolder, position: Int) {
        val post = postList[position]
        holder.postImage.setImageResource(post.imageResId)
        holder.postCaption.text = post.caption
    }

    override fun getItemCount(): Int {
        return postList.size
    }
}
```

oidManifest.xml | ExampleInstrumentedTest.kt | MainActivity.kt | PostAdapter.kt

```kotlin
package com.example.task1_ex4

data class Post(val imageResId: Int, val caption: String)
```


activity_main.xml
item_post.xml
AndroidManifest.xml
<?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"
android:layout_width="match_parent"
android:layout_height="match_parent">
<androidx.recyclerview.widget.RecyclerView
android:id="@+id/recyclerView"
android:layout_width="0dp"
android:layout_height="0dp"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
androidx.constraintlayout.widget.ConstraintLayout
Running Devices
Pixel API 35
5:07
Task1_ex4
Norway1!
Beautiful!
An amazing view!


<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android
android:layout_height="wrap_content"
android:padding="16dp">
<ImageView
android:id="@+id/postImage"
android:layout_width="0dp"
android:layout_height="200dp"
android:scaleType="centerCrop"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
android:src="@drawable/norv3" />
<TextView
android:id="@+id/postCaption"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginTop="8dp"
app:layout_constraintTop_toBottomOf="@id/postImage"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
android:text="Sample caption goes here"
android:textSize="16sp"
android:textStyle="bold" />
</androidx.constraintlayout.widget.ConstraintLayout>
idx.constraintlayout.widget.ConstraintLayout › TextView
5:07
Task1_ex4
Norway1!
Beautiful!
An amazing view!