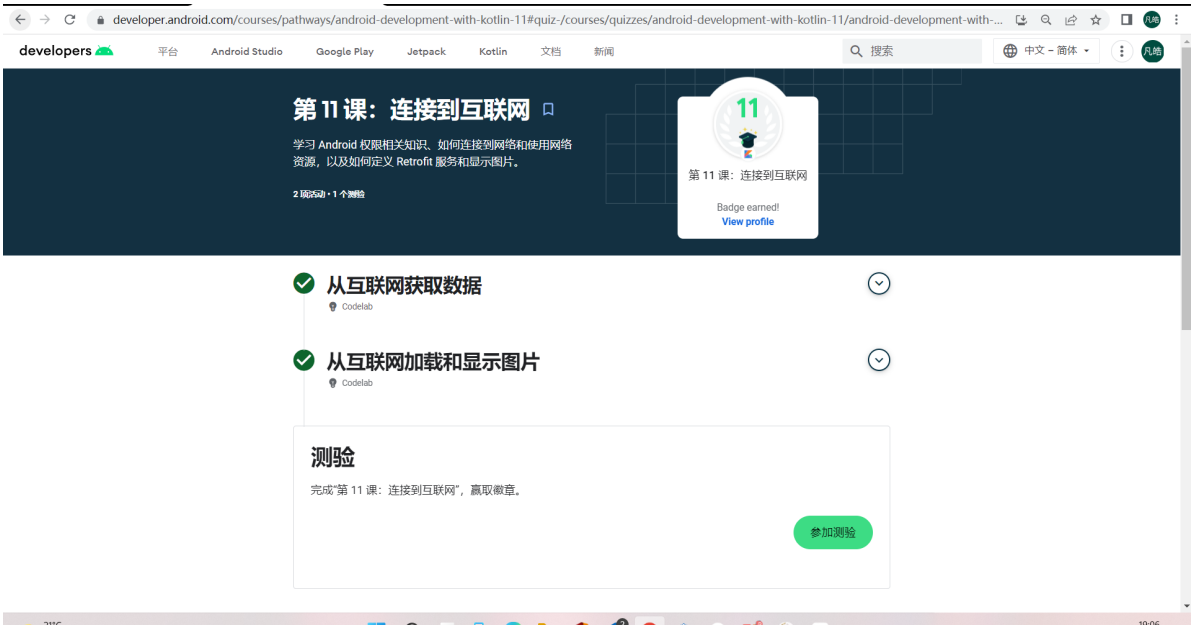
developer.android.com/courses/pathways/android-development-with-kotlin-11#quiz-/courses/quizzes/android-development-with-kotlin-11/android-development-with-...
developers
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2 项活动 · 1 个测验
11
第 11 课：连接到互联网
Badge earned!
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从互联网获取数据
Codelab
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测验
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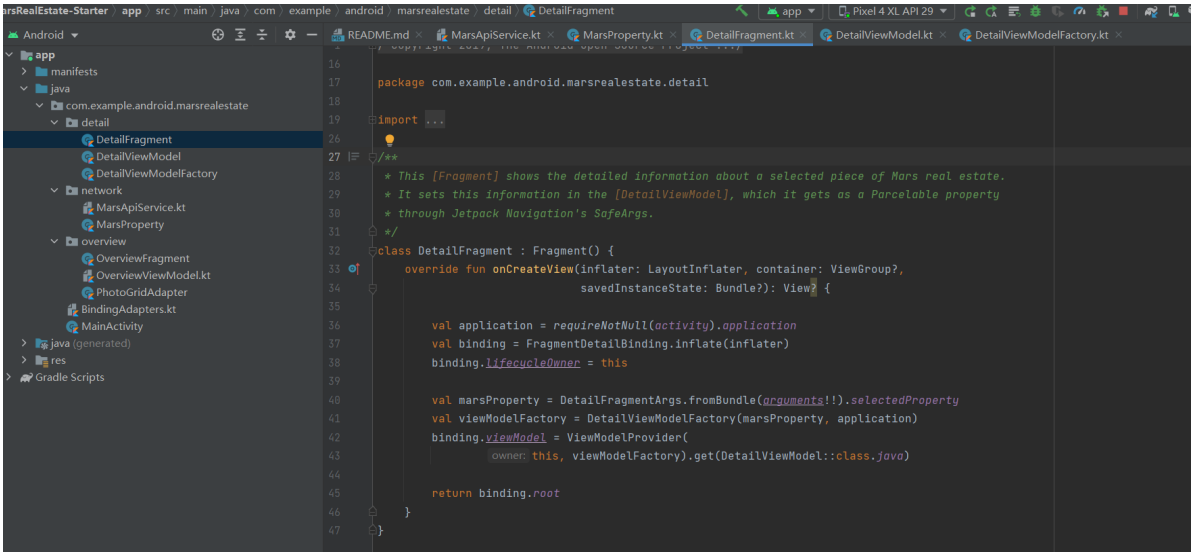
MarsRealEstate-Starter › app › src › main › java › com › example › android › marsrealestate › detail › DetailFragment
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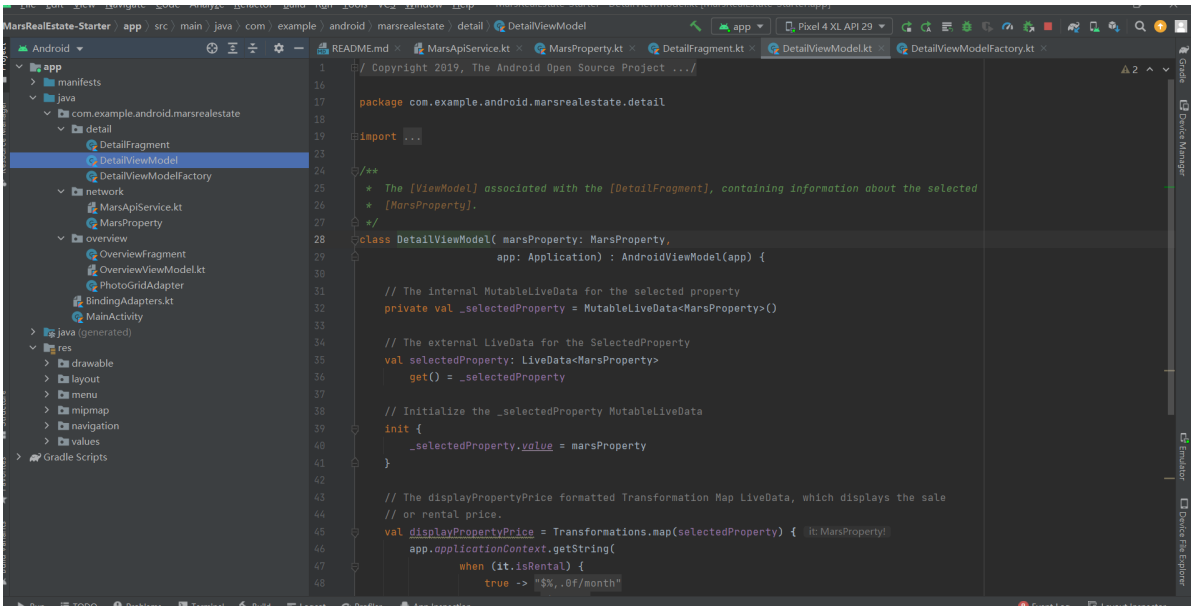
MarsApiService.kt
MarsProperty.kt
DetailFragment.kt
DetailViewModel.kt
DetailViewModelFactory.kt
Pixel 4 XL API 29
package com.example.android.marsrealestate.detail
import ...
/**
* This [Fragment] shows the detailed information about a selected piece of Mars real estate.
* It sets this information in the [DetailViewModel], which it gets as a Parcelable property
* through Jetpack Navigation's SafeArgs.
*/
class DetailFragment : Fragment() {
override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,
savedInstanceState: Bundle?): View? {
val application = requireNotNull(activity).application
val binding = FragmentDetailBinding.inflate(inflater)
binding.lifecycleOwner = this
val marsProperty = DetailFragmentArgs.fromBundle(arguments!!).selectedProperty
val viewModelFactory = DetailViewModelFactory(marsProperty, application)
binding.viewModel = ViewModelProvider(
owner: this, viewModelFactory).get(DetailViewModel::class.java)
return binding.root
}
}


MarsRealEstate-Starter › app › src › main › java › com › example › android › marsrealestate › detail › DetailViewModel
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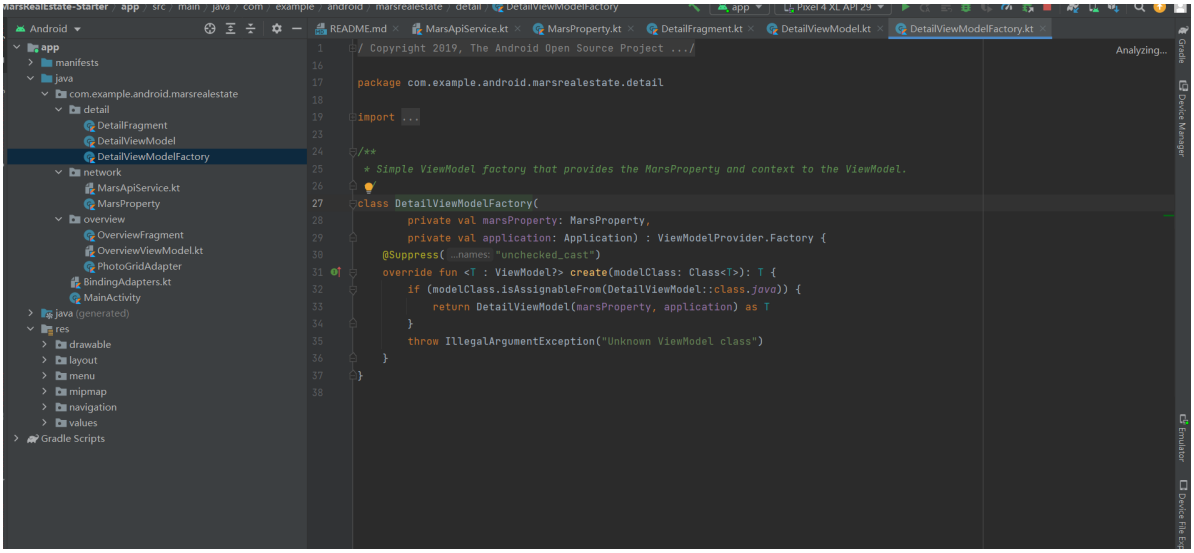
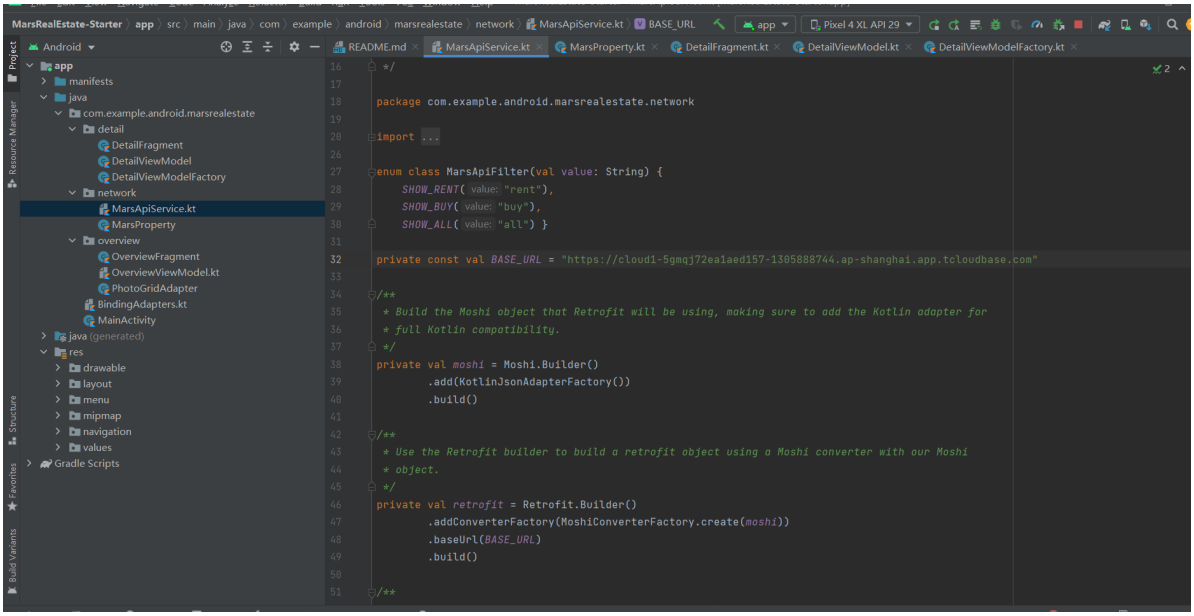
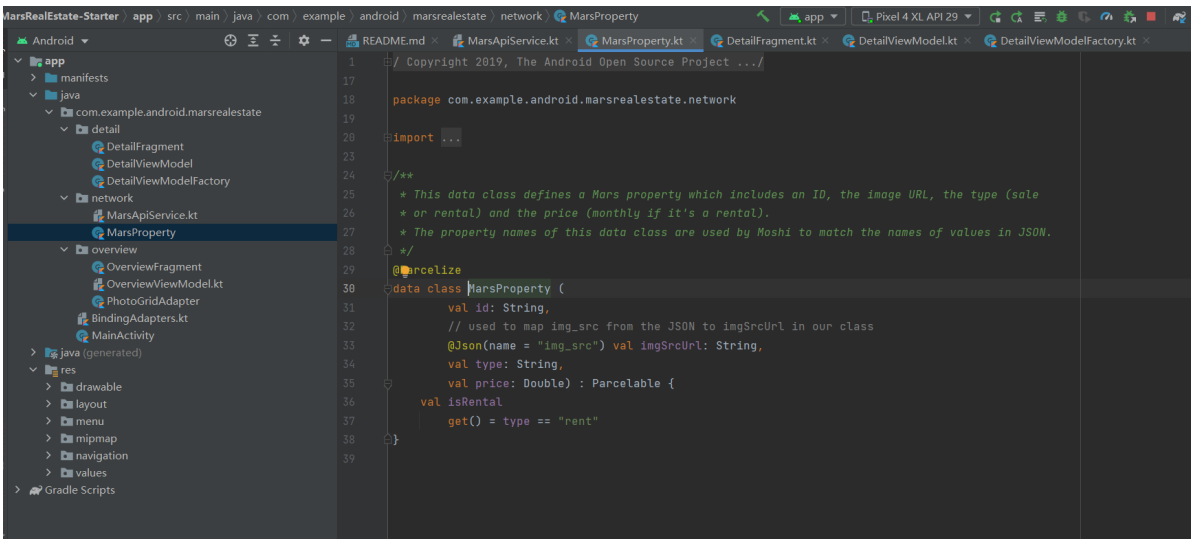
DetailViewModel.kt
DetailViewModelFactory.kt
Pixel 4 XL API 29
/ Copyright 2019, The Android Open Source Project .../
package com.example.android.marsrealestate.detail
import ...
/**
* The [ViewModel] associated with the [DetailFragment], containing information about the selected
* [MarsProperty].
*/
class DetailViewModel(marsProperty: MarsProperty,
app: Application) : AndroidViewModel(app) {
// The internal MutableLiveData for the selected property
private val _selectedProperty = MutableLiveData<MarsProperty>()
// The external LiveData for the SelectedProperty
val selectedProperty: LiveData<MarsProperty>
get() = _selectedProperty
// Initialize the _selectedProperty MutableLiveData
init {
_selectedProperty.value = marsProperty
}
// The displayPropertyPrice formatted Transformation Map LiveData, which displays the sale
// or rental price.
val displayPropertyPrice = Transformations.map(selectedProperty) { it: MarsProperty!
app.applicationContext.getString(
when (it.isRental) {
true -> "$%,.0f/month"



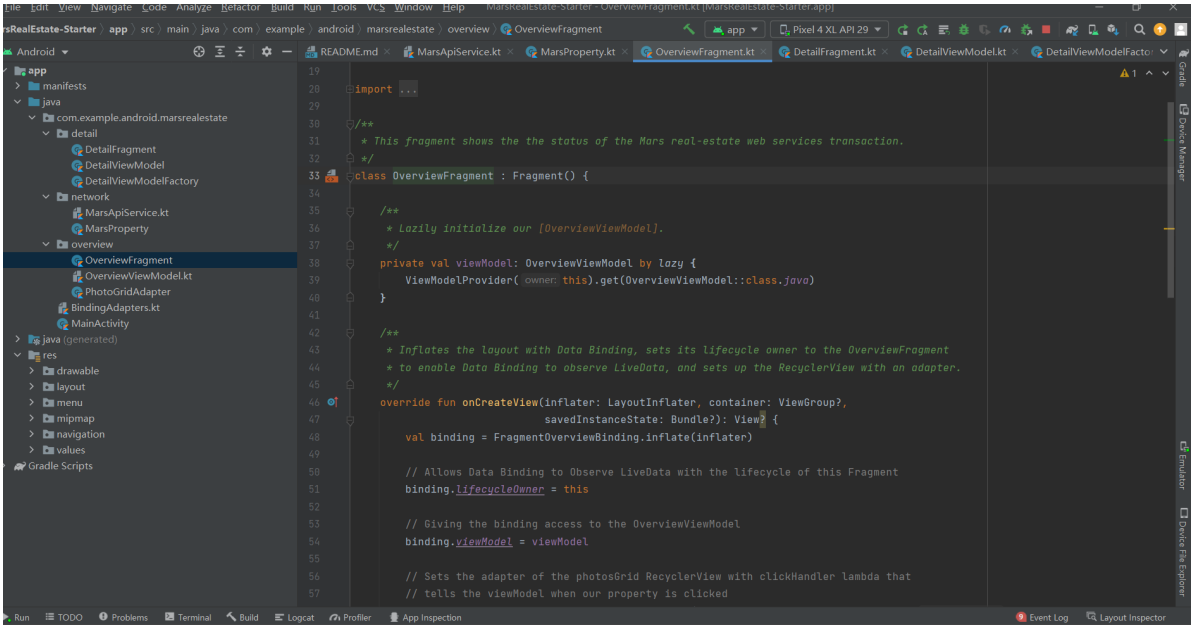
```
/ Copyright 2019, The Android Open Source Project .../

package com.example.android.marsrealestate.detail

import ...

/**
 * Simple ViewModel factory that provides the MarsProperty and context to the ViewModel.
 */
class DetailViewModelFactory(
        private val marsProperty: MarsProperty,
        private val application: Application) : ViewModelProvider.Factory {
    @Suppress( ...names: "unchecked_cast")
    override fun <T : ViewModel?> create(modelClass: Class<T>): T {
        if (modelClass.isAssignableFrom(DetailViewModel::class.java)) {
            return DetailViewModel(marsProperty, application) as T
        }
        throw IllegalArgumentException("Unknown ViewModel class")
    }
}
```



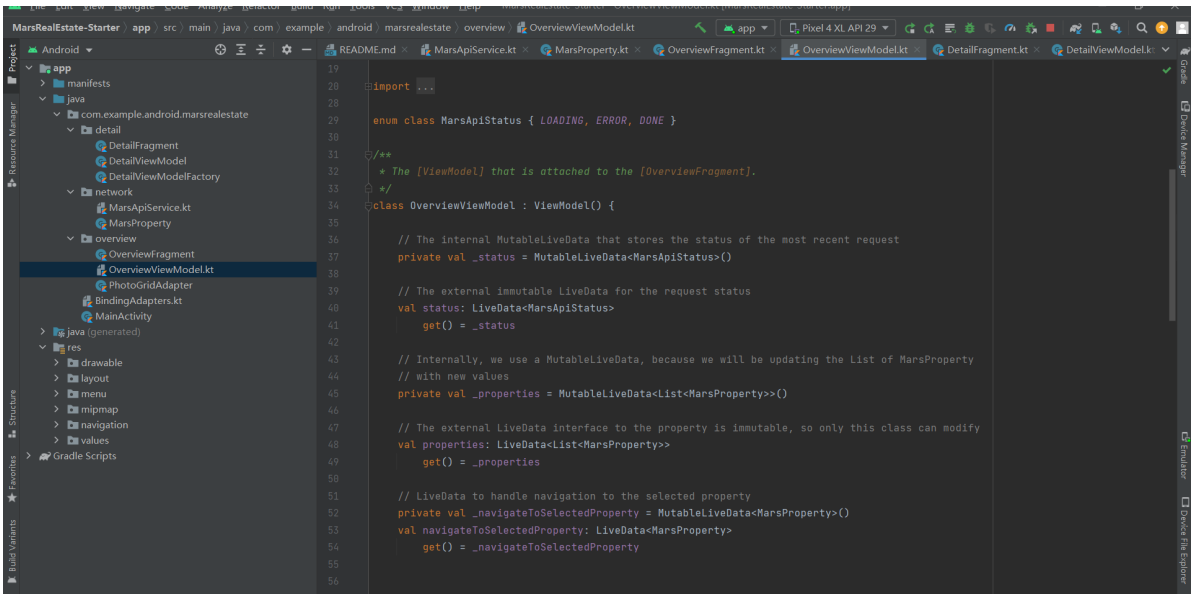
```
*/

package com.example.android.marsrealestate.network

import ...

enum class MarsApiFilter(val value: String) {
    SHOW_RENT( value: "rent"),
    SHOW_BUY( value: "buy"),
    SHOW_ALL( value: "all") }

private const val BASE_URL = "https://cloud1-5gmqj72ea1aed157-1305888744.ap-shanghai.app.tcloudbase.com"

/**
 * Build the Moshi object that Retrofit will be using, making sure to add the Kotlin adapter for
 * full Kotlin compatibility.
 */
private val moshi = Moshi.Builder()
        .add(KotlinJsonAdapterFactory())
        .build()

/**
 * Use the Retrofit builder to build a retrofit object using a Moshi converter with our Moshi
 * object.
 */
private val retrofit = Retrofit.Builder()
        .addConverterFactory(MoshiConverterFactory.create(moshi))
        .baseUrl(BASE_URL)
        .build()

/**
```



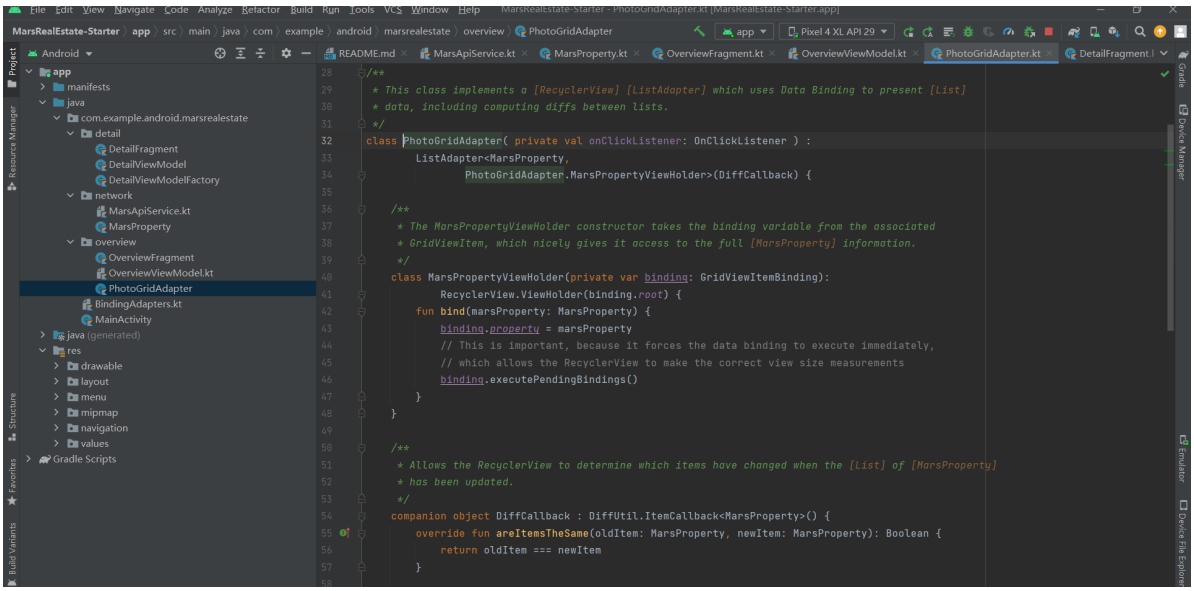
```
/ Copyright 2019, The Android Open Source Project .../

package com.example.android.marsrealestate.network

import ...

/**
 * This data class defines a Mars property which includes an ID, the image URL, the type (sale
 * or rental) and the price (monthly if it's a rental).
 * The property names of this data class are used by Moshi to match the names of values in JSON.
 */
@Parcelize
data class MarsProperty (
        val id: String,
        // used to map img_src from the JSON to imgSrcUrl in our class
        @Json(name = "img_src") val imgSrcUrl: String,
        val type: String,
        val price: Double) : Parcelable {
    val isRental
        get() = type == "rent"
}
```



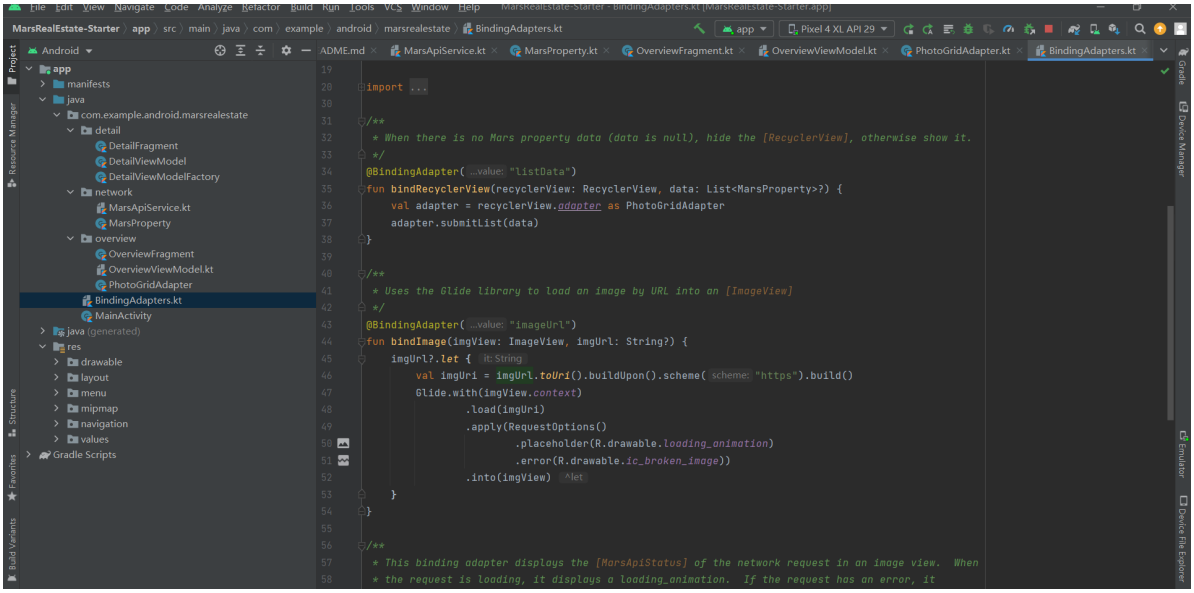
```
import ...

/**
 * This fragment shows the the status of the Mars real-estate web services transaction.
 */
class OverviewFragment : Fragment() {

    /**
     * Lazily initialize our [OverviewViewModel].
     */
    private val viewModel: OverviewViewModel by lazy {
        ViewModelProvider( owner: this).get(OverviewViewModel::class.java)
    }

    /**
     * Inflates the layout with Data Binding, sets its lifecycle owner to the OverviewFragment
     * to enable Data Binding to observe LiveData, and sets up the RecyclerView with an adapter.
     */
    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,
                              savedInstanceState: Bundle?): View? {
        val binding = FragmentOverviewBinding.inflate(inflater)

        // Allows Data Binding to Observe LiveData with the lifecycle of this Fragment
        binding.lifecycleOwner = this

        // Giving the binding access to the OverviewViewModel
        binding.viewModel = viewModel

        // Sets the adapter of the photosGrid RecyclerView with clickHandler lambda that
        // tells the viewModel when our property is clicked
```



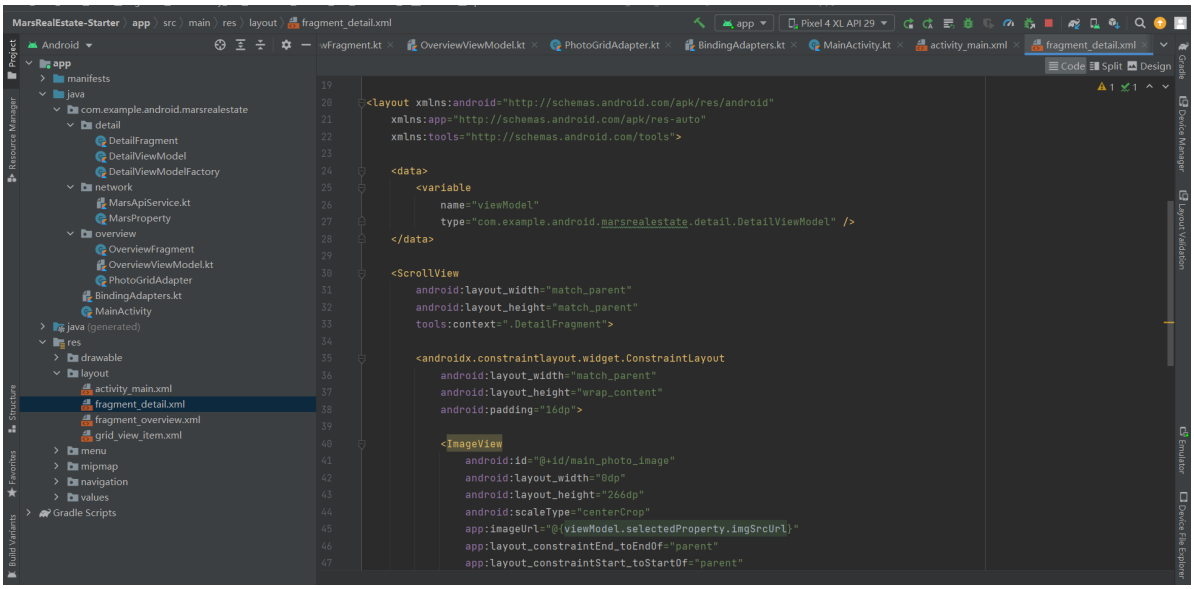
```
import ...

enum class MarsApiStatus { LOADING, ERROR, DONE }

/**
 * The [ViewModel] that is attached to the [OverviewFragment].
 */
class OverviewViewModel : ViewModel() {

    // The internal MutableLiveData that stores the status of the most recent request
    private val _status = MutableLiveData<MarsApiStatus>()

    // The external immutable LiveData for the request status
    val status: LiveData<MarsApiStatus>
        get() = _status

    // Internally, we use a MutableLiveData, because we will be updating the List of MarsProperty
    // with new values
    private val _properties = MutableLiveData<List<MarsProperty>>()

    // The external LiveData interface to the property is immutable, so only this class can modify
    val properties: LiveData<List<MarsProperty>>
        get() = _properties

    // LiveData to handle navigation to the selected property
    private val _navigateToSelectedProperty = MutableLiveData<MarsProperty>()
    val navigateToSelectedProperty: LiveData<MarsProperty>
        get() = _navigateToSelectedProperty
```



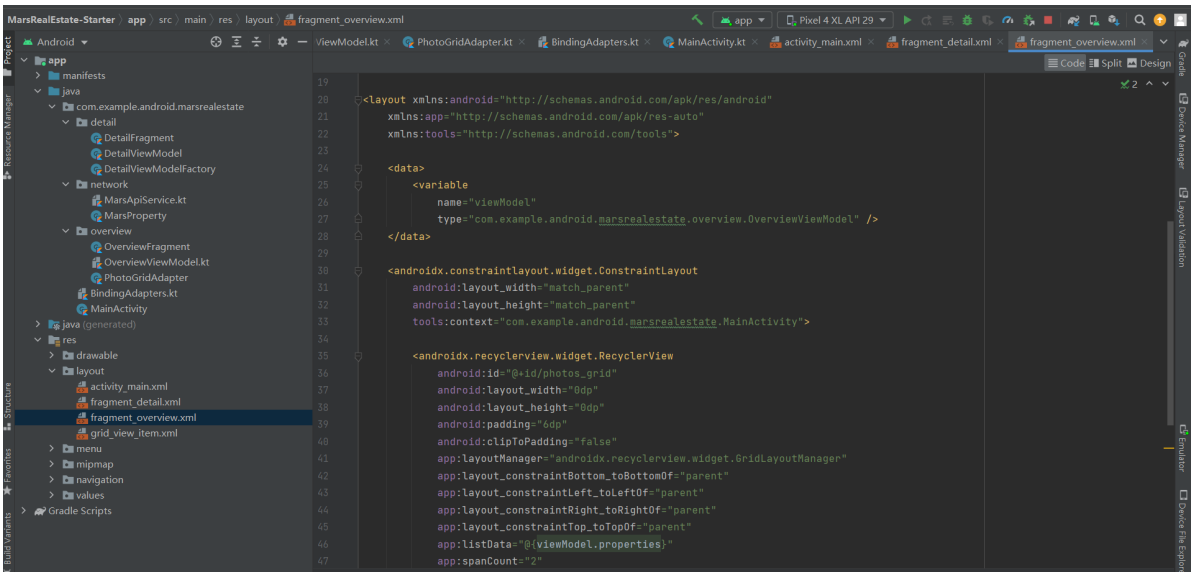
```
/**
 * This class implements a [RecyclerView] [ListAdapter] which uses Data Binding to present [List]
 * data, including computing diffs between lists.
 */
class PhotoGridAdapter( private val onClickListener: OnClickListener ) :
        ListAdapter<MarsProperty,
                PhotoGridAdapter.MarsPropertyViewHolder>(DiffCallback) {

    /**
     * The MarsPropertyViewHolder constructor takes the binding variable from the associated
     * GridViewItem, which nicely gives it access to the full [MarsProperty] information.
     */
    class MarsPropertyViewHolder(private var binding: GridViewItemBinding):
            RecyclerView.ViewHolder(binding.root) {
        fun bind(marsProperty: MarsProperty) {
            binding.property = marsProperty
            // This is important, because it forces the data binding to execute immediately,
            // which allows the RecyclerView to make the correct view size measurements
            binding.executePendingBindings()
        }
    }

    /**
     * Allows the RecyclerView to determine which items have changed when the [List] of [MarsProperty]
     * has been updated.
     */
    companion object DiffCallback : DiffUtil.ItemCallback<MarsProperty>() {
        override fun areItemsTheSame(oldItem: MarsProperty, newItem: MarsProperty): Boolean {
            return oldItem === newItem
        }
```



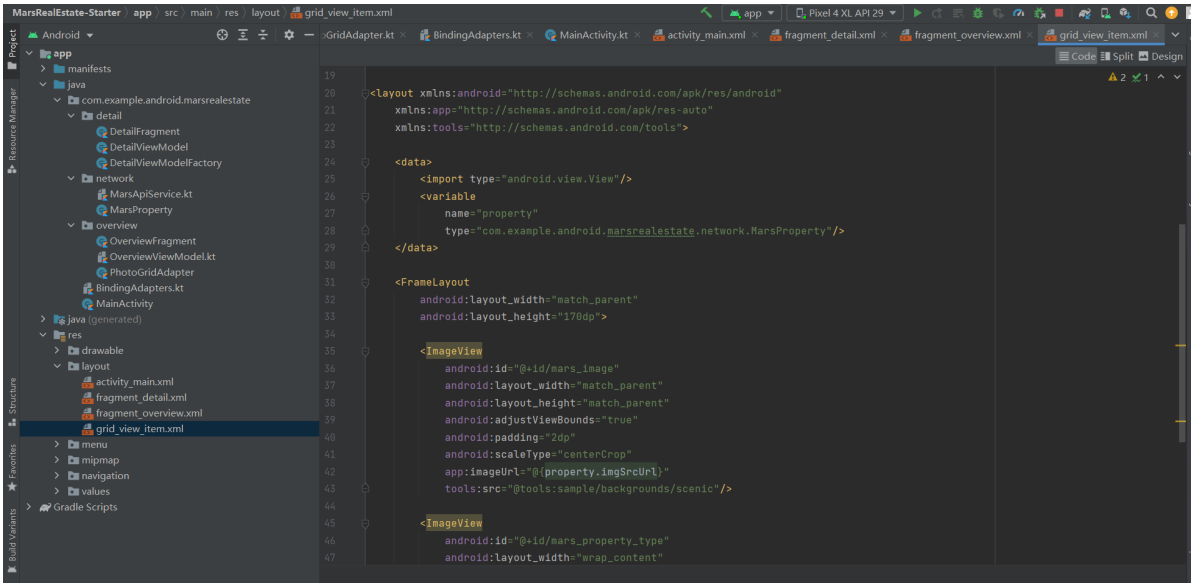
```kotlin
import ...

/**
 * When there is no Mars property data (data is null), hide the [RecyclerView], otherwise show it.
 */
@BindingAdapter("listData")
fun bindRecyclerView(recyclerView: RecyclerView, data: List<MarsProperty>?) {
    val adapter = recyclerView.adapter as PhotoGridAdapter
    adapter.submitList(data)
}

/**
 * Uses the Glide library to load an image by URL into an [ImageView]
 */
@BindingAdapter("imageUrl")
fun bindImage(imgView: ImageView, imgUrl: String?) {
    imgUrl?.let {
        val imgUri = imgUrl.toUri().buildUpon().scheme("https").build()
        Glide.with(imgView.context)
                .load(imgUri)
                .apply(RequestOptions()
                        .placeholder(R.drawable.loading_animation)
                        .error(R.drawable.ic_broken_image))
                .into(imgView)
    }
}

/**
 * This binding adapter displays the [MarsApiStatus] of the network request in an image view.  When
 * the request is loading, it displays a loading_animation.  If the request has an error, it
```



```xml
<layout 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">

    <data>
        <variable
            name="viewModel"
            type="com.example.android.marsrealestate.detail.DetailViewModel" />
    </data>

    <ScrollView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".DetailFragment">

        <androidx.constraintlayout.widget.ConstraintLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="16dp">

            <ImageView
                android:id="@+id/main_photo_image"
                android:layout_width="0dp"
                android:layout_height="266dp"
                android:scaleType="centerCrop"
                app:imageUrl="@{viewModel.selectedProperty.imgSrcUrl}"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintStart_toStartOf="parent"
```



```xml
<layout 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">

    <data>
        <variable
            name="viewModel"
            type="com.example.android.marsrealestate.overview.OverviewViewModel" />
    </data>

    <androidx.constraintlayout.widget.ConstraintLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context="com.example.android.marsrealestate.MainActivity">

        <androidx.recyclerview.widget.RecyclerView
            android:id="@+id/photos_grid"
            android:layout_width="0dp"
            android:layout_height="0dp"
            android:padding="6dp"
            android:clipToPadding="false"
            app:layoutManager="androidx.recyclerview.widget.GridLayoutManager"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintLeft_toLeftOf="parent"
            app:layout_constraintRight_toRightOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:listData="@{viewModel.properties}"
            app:spanCount="2"
```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<layout 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">
<data>
<import type="android.view.View"/>
<variable
name="property"
type="com.example.android.marsrealestate.network.MarsProperty"/>
</data>
<FrameLayout
android:layout_width="match_parent"
android:layout_height="170dp">
<ImageView
android:id="@+id/mars_image"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:adjustViewBounds="true"
android:padding="2dp"
android:scaleType="centerCrop"
app:imageUrl="@{property.imgSrcUrl}"
tools:src="@tools:sample/backgrounds/scenic"/>
<ImageView
android:id="@+id/mars_property_type"
android:layout_width="wrap_content"