

## Model View ViewModel (MVVM)

- Uses the Data Binding Library from Google
- Minimizes view binding code
- Views' binding logic is implemented in the XML layout

### Model:

- Same as in MVP

### View:

- Same as in MVP

### ViewModel:

- Contains the model
- Uses observable values to update values
- On each value update, the relevant views will be updated using data binding library

### Example

#### Without Data Binding

```
class CoinViewHolder extends RecyclerView.ViewHolder {  
    TextView tvNameAndSymbol;  
    TextView tvPriceAndVolume;  
    ImageView ivIcon;  
  
    public CoinViewHolder(View itemView) {  
        super(itemView);  
        tvNameAndSymbol = itemView.findViewById(R.id.tvNameAndSymbol);  
        tvPriceAndVolume = itemView.findViewById(R.id.tvPriceAndVolume);  
        ivIcon = itemView.findViewById(R.id.ivIcon);  
    }  
}
```

In order to bind our views, we need to call findViewById method.

To bind data to our views, we need to set our models on views like this:

```
@Override  
public void onBindViewHolder(CoinViewHolder holder, int position) {  
    final CoinModel model = mItems.get(position);  
    holder.tvNameAndSymbol.setText(model.name);  
    holder.tvPriceAndVolume.setText(model.priceUsd);  
}
```

#### With Data Binding

```

<?xml version="1.0" encoding="utf-8"?>
<layout xmlns:android="http://schemas.android.com/apk/res/android">
    <data>
        <variable
            name="coin"
            type="com.pluralsight.cryptobam.MainActivity.CoinModel" />
        </data>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center_vertical"
        android:layout_marginLeft="16dp"
        android:orientation="vertical">
        <TextView
            android:id="@+id/tvNameAndSymbol"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="@{coin.name}" />
        <TextView
            android:id="@+id/tvPriceAndVolume"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="@{coin.priceUsd}"
            />
    </LinearLayout>
</layout>

```

In data binding, we have to add define it in our view. At first, we tell our view the model class it will use. The value in our views is set as :

```

<?xml version="1.0" encoding="utf-8"?>
<layout xmlns:android="http://schemas.android.com/apk/res/android">
    <data>
        <variable
            name="coin"
            type="com.pluralsight.cryptobam.MainActivity.CoinModel" />
        </data>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center_vertical"
        android:layout_marginLeft="16dp"
        android:orientation="vertical">
        <TextView
            android:id="@+id/tvNameAndSymbol"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="@{coin.name}" />
        <textView
            android:id="@+id/tvPriceAndVolume"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="@{coin.priceUsd}"
            />
    </LinearLayout>
</layout>

```

## MVVM DIAGRAM

