

1° 將 RecyclerView pull 到 UI 中

2° 創 ViewHolder 的 UI 樣本 (cell):

右鍵 /res → New → Android Resource File → name: cell\_normal  
type: Layout  
Root: ConstraintLayout (不用改)

→ ok

3° 創 New Java class "MyAdapter.java"

\* 注意: 繼承 RecyclerView 必需  
條件

```
>MainActivity.java x MyAdapter.java x cell_normal.xml x cell_card.xml x
16 public class MyAdapter extends RecyclerView.Adapter<MyAdapter.MyViewHolder> {
17
18     List<Word> allWords = new ArrayList<>();
19     boolean useCardView; 代表 Repository 更新的 LiveData
20
21     // Constructor 建構子
22     public MyAdapter(boolean useCardView) { this.useCardView = useCardView; }
23
24
25     // Setter for main
26     public void setAllWords(List<Word> allWords) { this.allWords = allWords; }
27
28     @NonNull
29     @Override
30     public MyViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
31
32         // 指定 UI 範本
33         LayoutInflator layoutInflater = LayoutInflater.from(parent.getContext());
34
35         // 將 cell 的 UI 範本 給 ViewHolder
36         View itemView;
37         if (useCardView){
38             itemView = layoutInflater.inflate(R.layout.cell_card, parent, attachToRoot: false);
39         }else{
40             itemView = layoutInflater.inflate(R.layout.cell_normal, parent, attachToRoot: false);
41         }
42
43         return new MyViewHolder(itemView);
44     }
45
46
47     @Override
48     public void onBindViewHolder(@NonNull MyViewHolder holder, int position) {
49         // system provide position, starts from 0
50
51         // 將 Data 繩到 ViewHolder 中
52         Word word = allWords.get(position); use position as index in List
53         holder.textViewNumber.setText(String.valueOf(position + 1));
54         holder.textViewEnglish.setText(word.getWord());
55         holder.textViewChinese.setText(word.getChineseMeaning());
56
57         // Click ViewHolder 時搜尋文字
58         holder.itemView.setOnClickListener(new View.OnClickListener() {
59             @Override
60             public void onClick(View v) {
61                 Intent intent = new Intent(v.getContext(), SearchActivity.class);
62                 intent.putExtra("word", word.getWord());
63                 v.getContext().startActivity(intent);
64             }
65         });
66     }
67
68 }
```

告知 Adapter 使用的 ViewHolder

為了將 Repository 的 LiveData 讀到 Adapter 中

Adapter 3's function 產生方式: 將 cursor 放在 MyAdapter: MyViewHolder  
→ Alt + Ent → Implement method

UI 的 XML 檔案

系統會自動記錄這是第幾行 ViewHolder, 從 0 開始

#### 4° MainActivity.java

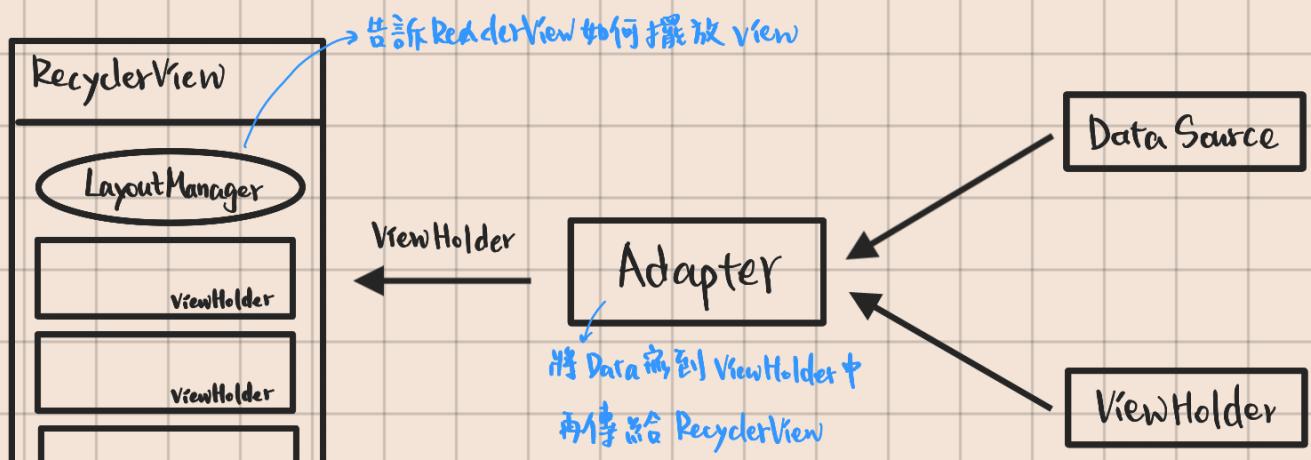
```
17 public class MainActivity extends AppCompatActivity {
18     Button buttonInsert, buttonClear;
19     WordViewModel wordViewModel;
20     RecyclerView recyclerView;
21     MyAdapter myAdapter1, myAdapter2;
22     Switch aSwitch;
23
24     @Override
25     protected void onCreate(Bundle savedInstanceState) {
26         super.onCreate(savedInstanceState);
27         setContentView(R.layout.activity_main);
28
29         wordViewModel = new ViewModelProvider(this).get(WordViewModel.class);
30         buttonInsert = findViewById(R.id.button_insert);
31         buttonClear = findViewById(R.id.button_clear);
32         aSwitch = findViewById(R.id.switch1);
33
34         // Setup RecyclerView & Adapter
35         recyclerView = findViewById(R.id.recyclerView);
36         // 一維列表(線性) : LinearLayoutManager
37         // 二維列表(行列) : GridLayoutManager
38         recyclerView.setLayoutManager(new LinearLayoutManager(context));
39         myAdapter1 = new MyAdapter(useCardView: false);
40         myAdapter2 = new MyAdapter(useCardView: true); } 2个Adapter
41         recyclerView.setAdapter(myAdapter1);
42
43         aSwitch.setOnCheckedChangeListener { _, _ ->
44             if (aSwitch.isChecked()) {
45                 myAdapter1 = new MyAdapter(useCardView: true);
46                 myAdapter2 = new MyAdapter(useCardView: false);
47                 recyclerView.setAdapter(myAdapter2);
48             } else {
49                 myAdapter1 = new MyAdapter(useCardView: false);
50                 myAdapter2 = new MyAdapter(useCardView: true);
51                 recyclerView.setAdapter(myAdapter1);
52             }
53         }
54     }
55 }
```

```

43 // switch listener
44 aSwitch.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
45     @Override
46     public void onCheckedChanged(CompoundButton compoundButton, boolean isChecked) {
47         if (isChecked) {
48             recyclerView.setAdapter(myAdapter2); } } }依 switch 然不同 adapter
49     } else {
50         recyclerView.setAdapter(myAdapter1); }
51     }
52 }
53 });
54
55
56 wordViewModel.getAllWordsLive().observe( owner: MainActivity.this, new Observer<List<Word>>() {
57     @Override
58     public void onChanged(List<Word> words) { // Invoke when data change
59         myAdapter1.setAllWords(words); → MyLiveData 通知 Adapter
60     * myAdapter1.notifyDataSetChanged(); // 通知刷新視圖
61         myAdapter2.setAllWords(words); 重新 Adapter 資料
62         myAdapter2.notifyDataSetChanged(); // 通知刷新視圖
63     }
64 });
65
66 // Insert Button
67 buttonInsert.setOnClickListener(view -> {
68     String[] english = {
69         "Hello",
70         "World",
71         "Integer"
72     };
73     String[] chinese = {
74         "你好",
75         "世界",
76         "整数类型"
77     };
78     for (int i = 0; i < english.length; i++) {
79         wordViewModel.insertWords(new Word(english[i], chinese[i]));
80     }
81 });
82
83 // Clear Button
84 buttonClear.setOnClickListener(view -> {
85     wordViewModel.deleteAllWords();
86 });
87
88 }
89 }

```

## \*\*\*. RecyclerView 架構





- 1° onCreateHolder → 創建 ViewHolder
- 2° onBindViewHolder → 將 data 給 ViewHolder
- 3° getItemCount → 計算共有幾個 ViewHolder

## Class MyAdapter

Data: dataList → Repository 更新的 LiveData

Method:

- setAllData() → setter, 將 main 中的 LiveData 設給 Adapter
  - 1° set dataList
- onCreateViewHolder → 創建 ViewHolder
  - 1° init LayoutInflater 並以 cell 的 xml 當 ViewHolder 樣版
  - 2° connect cell UI xml to MyViewHolder
  - 3° return "new" myViewHolder
- onBindViewHolder → 設定 ViewHolder 中各個 textView 的值
- getItemCount → 算 dataList 的 size
- Class MyViewHolder

Adapter  
3  
1. 備  
override  
function

Data: TextView1  
TextView2  
⋮

Method:

- MyViewHolder() → Constructor, 設定 ViewHolder 中的  
各种 View obj
  - 1° textView = findViewById(R.id.textView)

## MainActivity

Data: recyclerView

myAdapter

Method:

1° recyclerView = findViewById()

2° recyclerView.setLayoutManager() → 決定 Linear or Grid

3° myAdapter = new MyAdapter()

4° recyclerView.setAdapter(myAdapter)

5° 更新 Adapter 的 Data Source → 由 LiveData.observe 觸發

• myAdapter.setAllData() → Adapter Class 中的 setter

• myAdapter.notifyDataSetChanged → 別忘記這步!!

\*. Note:

• Palette "Guideline"

1) 在 Helpers 類

2) 搜尋 layout\_constraintGuide\_percent, 用比例決定線位置

• 新增 CardView 及擊動畫

1° CardView 搜尋 clickable → true

2° ConstraintLayout 搜尋 background → "0" → 送 selectableItemBackground

• 在 ViewHolder 新增圖標:

1° /res → New → Vector Asset → 选圖片 → ok → Next → Finish

2° 在 UI 拉 - 5 ImageView

Database 端

統架構: MainActivity ← ViewModel ← Repository { Database } ← Entity

