Mobile Applications
CSCI 448
Lecture 03

Model – View – View Model

Have Canvas Open

Previously in CSCI 448

- String Resources

- Compose function structure

- Kotlin!

Questions?

Quick Status Check

- Canvas > Assignments > Status Check

- Access code: codenames

- Complete now, closes in 5 minutes

Learning Outcomes For Today

- Describe and implement the three components of the Model-View-View Model architecture

On Tap For Today

- **Model**-View-View Model

- Practice

On Tap For Today

- **Model**-View-View Model

- Practice

Three Tier Architecture

- Presentation Layer (UI Logic)

- Domain Layer (Business Logic)

- Model Layer (Data Logic)

Three Tier Architecture

- <u>Presentation Layer</u> (UI Logic)

  - <u>Compose UI</u>

- Domain Layer (Business Logic)

- Model Layer (Data Logic)

MVVM Architecture

- View Model prepares Model data for View
- V M decoupled from V
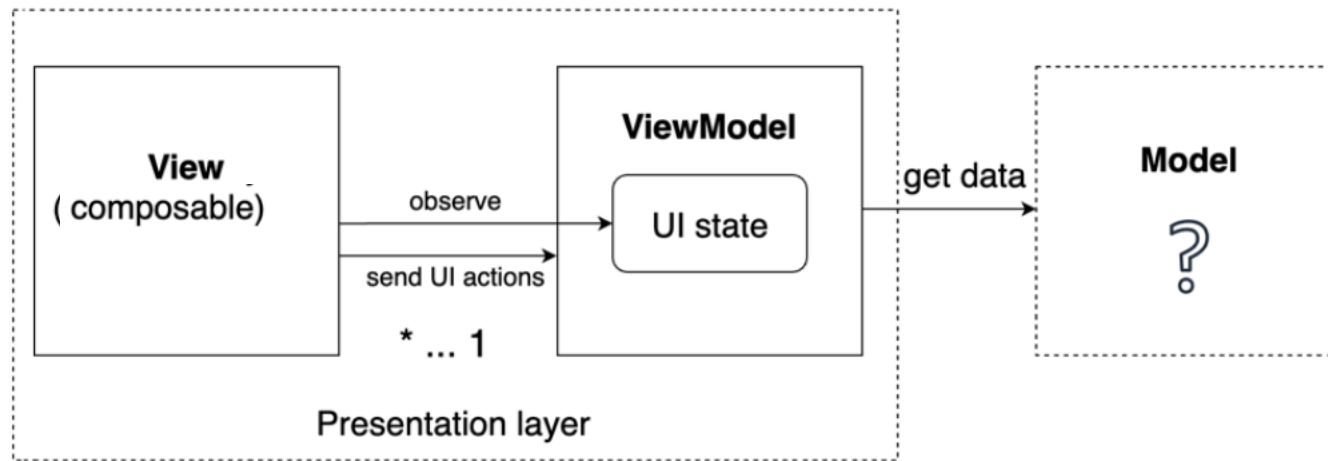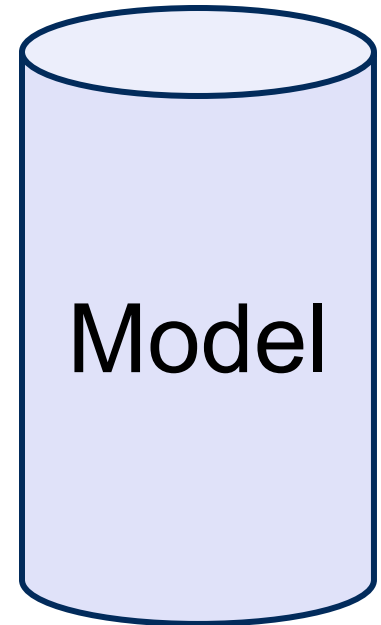 - VM has no reference to V
  - V observes VM state

Figure 7.4 – Presentation layer in the MVVM pattern

Model

- Model Layer
- Entities
  - Manages the data (load/persist)
  - Will be backed by a database
- Class structure organizes and represents data

Model

MVVM Objects

- Model **Classes** & **Objects**
  - Sole purpose to hold & manage data
  - No knowledge of how data is displayed

- View **Functions**
  - Know how to draw themselves given data
  - Responds to input
  - No knowledge of how data is stored or managed

- View Model
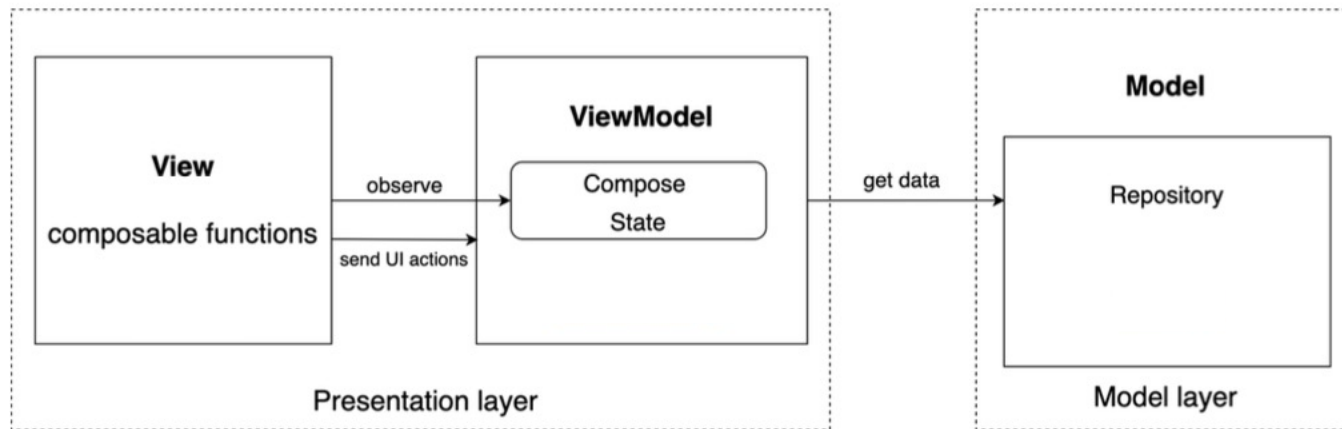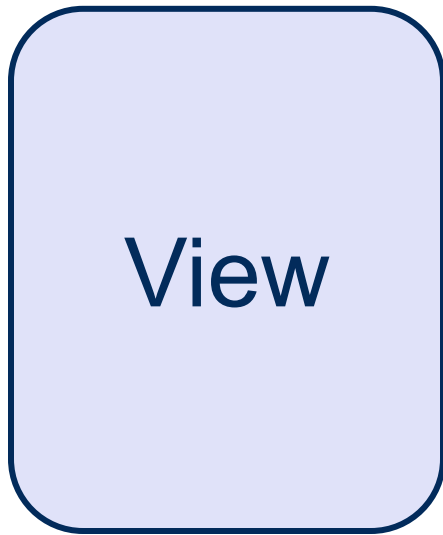 - Request Model Objects & handle View Functions events

MVVM

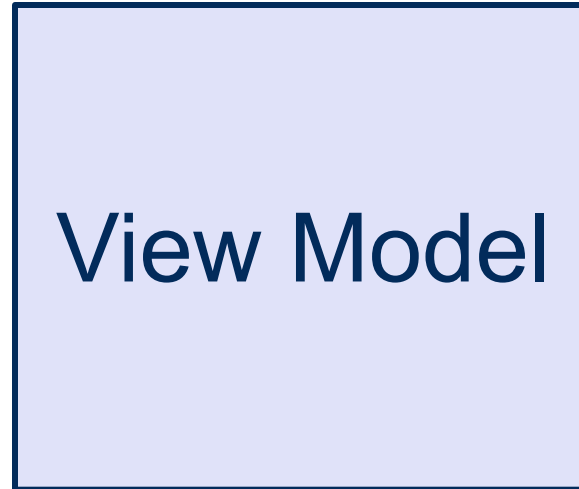Figure 8.1 – Layering of responsibilities in the Restaurants app
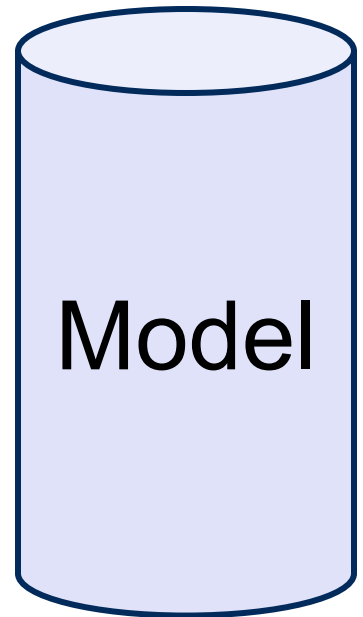
MVVM in Android

- Kotlin
- Kotlin
- Kotlin

View

View Model

Model

- Compose
- *Next Week*
- Entity Class

On Tap For Today

- **Model**-View-View Model

- Practice

For Next Time

- Lab01A, Lab01B posted
  - L1C & L2A to come

- A1 posted

- Leverage Android Studio features
  - Compose Preview
  - Emulator

For Next Time

- Elevator Pitch video due by tonight

- Shark Tank reviews due by Tuesday
  - To complete the review, provide feedback/suggestions/additions to the proposed idea

For Next Time

- Elevator Pitch video due by tonight

- Shark Tank reviews due by Tuesday

- For next week:

  – Be watching next set of Kotlin Videos 5-10

    • Quiz is due by Monday night

    • Access Code: apostille

  – Kotlin Videos 11-13 quiz on Wed Jan 25