MVC

Programming Handheld Systems—iOS

CMSC 436
Spring 2019

MODEL/VIEW/CONTROLLER (MVC)

Divide objects into three categories.

Controller

Model

View
MODEL/VIEW/CONTROLLER (MVC)

Model: abstract application logic (not how shown)

Controller: how presented to user (UI design)
**MODEL/VIEW/CONTROLLER (MVC)**

- **Controller**
- **Model**
- **View**

*View: controller's minions: TableView, Button, Label*

**Controlled communication**
Controllers can talk directly to their model

Controllers can talk directly to their view(s)
Controllers can talk to directly to their view(s)

Can view talk to its controller?
Controllers can also be notified through property observers.
Views do not own the data they display.

They must request it, almost always from the Controller.
**Model/View/Controller (MVC)**

Usually through a *delegation protocol* (e.g., `UITableViewDelegate()`).

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DELEGATION

Letting someone (or something) else do the work

“I’m just a regular chef, I don’t know how to make pizza.”

“Please make me a pizza.”

You → Chef → Pizza Chef

DELEGATION IN IOS

Letting another object do the work

“I’m just an app. I just know how to start and stop.”

“Run.”

iOS → App → Delegate

“Run.”

“I know exactly what to do.”
DELEGATION & PROTOCOLS

Objects delegate to other objects that adopt a protocol

“I don’t know what to do when a row is selected. I’ll tell my delegate.”

“I could be any object, but I can answer anything delegated to me.”

“I adopt the UIPickerViewDelegate protocol, and promise to answer to certain messages.”

Picker View ➔ Delegate

UIPickerViewDelegate Protocol

```swift
optional func pickerView(_ pickerView: UIPickerView, didSelectRow row: Int, inComponent component: Int)
```

MULTIPLE VIEW CONTROLLERS

Controllers control other controllers in a hierarchy.
MULTIPLE VIEW CONTROLLERS

TableViewController, ScrollViewController, NavigationController...

UITABBARCONTROLLER
Last word:

- TabBars
  - can have their text decorated
  - can have icons
  - can have badges