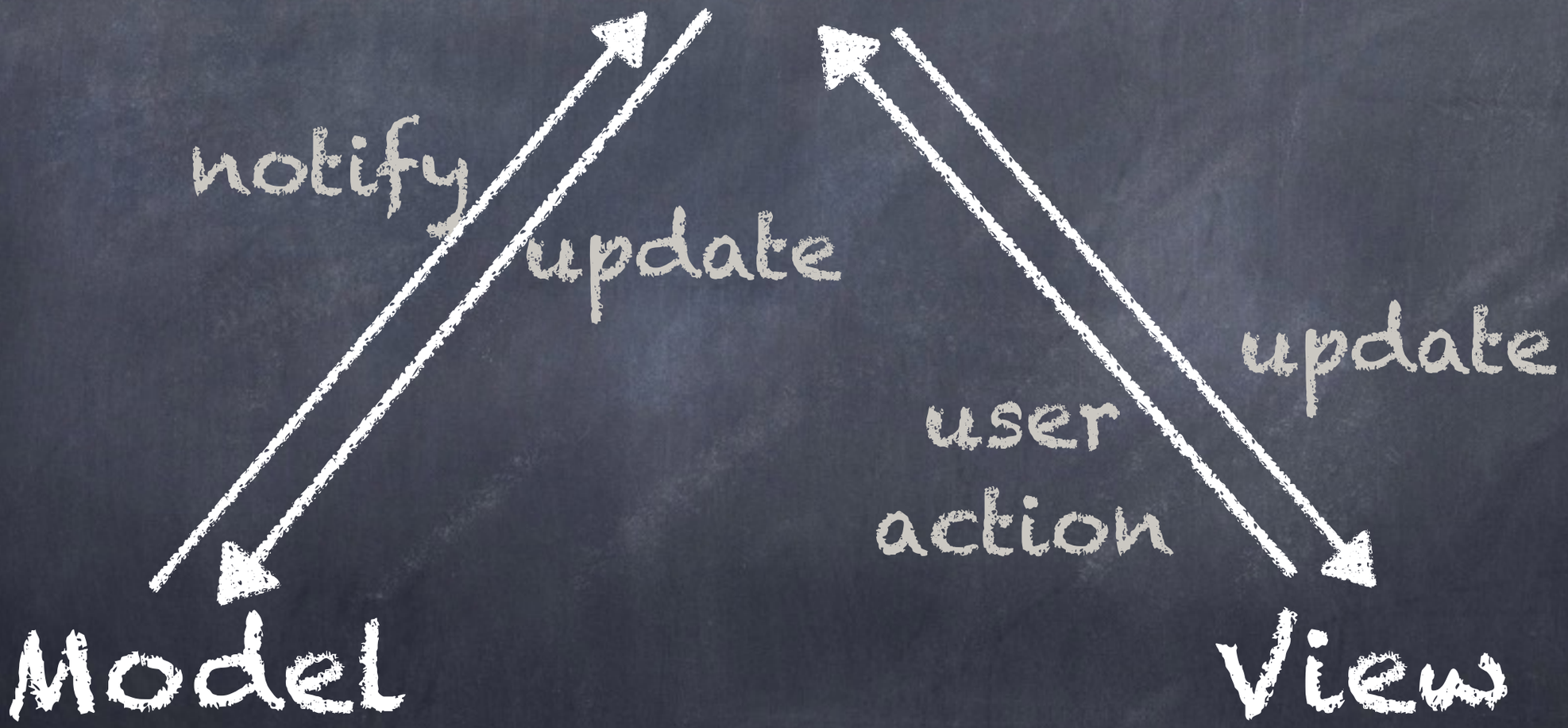
Programming with iOS SDK

Some key concepts

MVC Pattern



UIViewController class

- is the « controller » in MVC Pattern
- always has a View as a member
- responsible for managing view(s)
- Several UIViewControllers interact with each others in an app behavior
- You inherit from UIViewController most of the time to build logic and behaviors.

UIView class

- is the « view » in MVC Pattern
- does not know its view controller !
- is seen by the user
- view hierarchy paradigm
- Your UI is a assembly of views controlled by several view controllers.
- You can inherit for specific customization

Model ?

- examples : Data access layer, business rules, data store, persistent data, etc.
- No specific class associated in iOS SDK
- Up to you.

Important UIViewControllers

- UITableViewController
  - manages a tableview
- UINavigationController
  - navigation of hierarchical content
- + others in iOS SDK : You should learn their purpose.

OO-programming in Objective-C

Keywords

- .h file : @interface ... @end
- .m file : @implementation ... @end
- member : @property ...
- 'self', 'super'
- inheritance
- override functions
- conforming to protocols (« interface »)

Delegate pattern

Delegate pattern

viewcontroller A

update,
notify,
ask...

viewcontroller B
@property id aDelegate

@protocol VcProtocol ...

viewcontrollerA : <VcProtocol>

viewcontrollerB
@property id<VcProtocol> aDelegate

MainVC

displays

sets himself as delegate

NameVC

(through delegate implem.)

notify tap

passes input

updates its data

dismisses

UITableView,
UITableViewController

iPhone 6 - iPhone 6 / iOS 9.2 (13C75)

Carrier 2:17 AM

Settings **Privacy**

- Location Services — On
- Contacts
- Calendars
- Reminders
- Photos
- Bluetooth Sharing
- Microphone
- Camera
- Health
- HomeKit

As applications request access to your data, they will be added in the categories above.

- Twitter

iPhone 6 - iPhone 6 / iOS 9.2 (13C75)

Carrier 2:27 AM

Cancel **New Event** Add

Title

Location

All-day

Starts Jan 15, 2016 2:00 AM

Ends 3:00 AM

Repeat Never

Travel Time None

Alert None

URL

Notes

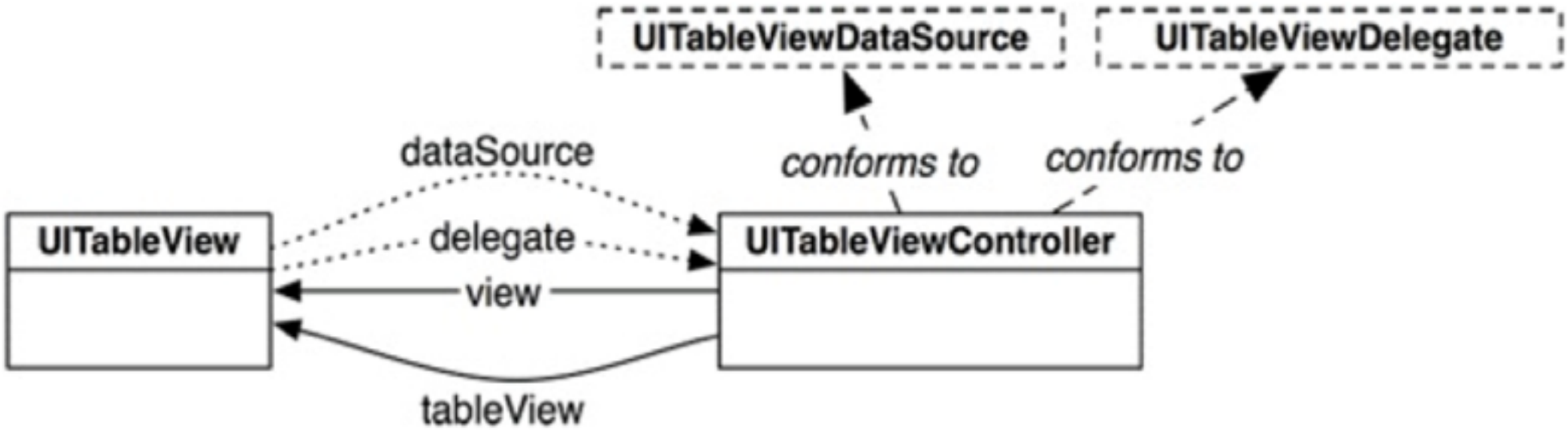
UITableView design

- displays rows of UITableViewCell.
  - (possibly with caching)
- separates UI display and data content
  - => UITableViewDataSource protocol
- separates UI event and app behavior
  - => UITableViewDelegate protocol

UITableViewController

- It is:
  - a UIViewController
  - whose view is a UITableView
  - that conforms to 2 protocols for handling the tableview
  - whose tableview is delegating to him

Figure 8.4 `UITableViewController-UITableView` **relationship**



in UITableView's dataSource calls

```
#pragma mark - UITableViewDataSource
- (NSInteger)tableView:(UITableView *)tableView numberOfRowsInSection:(NSInteger)section {
    // return number of rows
    return self.dayRecordArray.count;
}

- (UITableViewCell*)tableView:(UITableView *)tableView cellForRowAtIndexPath:(NSIndexPath *)indexPath {

    // get a cell, possible re-used from a cache
    UITableViewCell* cell = [self.tableView dequeueReusableCellWithIdentifier:dayRecordCellIdentifier
forIndexPath:indexPath];

    // if no cell, create one.
    if (!cell) {
        cell = [[UITableViewCell alloc] initWithStyle:UITableViewCellStyleDefault
reuseIdentifier:dayRecordCellIdentifier];
    }

    // fill the cell with data
    cell.textLabel.text = [self.dayRecordArray objectAtIndex:indexPath.row];
    return cell;
}
```

in UITableView's delegate calls

```objc
#pragma mark - UITableViewDelegate

- (void)tableView:(UITableView *)tableView didSelectRowAtIndexPath:(NSIndexPath *)indexPath {

    // create a new view controller and push it
    MealInventoryTableViewController* inventory = [[MealInventoryTableViewController alloc] init];
    inventory.delegate = self;
    [self.navigationController pushViewController:inventory animated:YES];
}
```

UINavigationController

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Carrier 2:34 AM

Settings

- iCloud
- Maps
- News
- Safari
- Photos & Camera
- Game Center
- Twitter
- Facebook
- Flickr
- Vimeo
- Developer

iPhone 6 - iPhone 6 / iOS 9.2 (13C75)

Carrier 2:34 AM

Settings | Safari

SEARCH

- Search Engine: Google
- Search Engine Suggestions
- Safari Suggestions
- Quick Website Search: On
- Preload Top Hit

About Search & Privacy...

GENERAL

- Passwords
- AutoFill
- Frequently Visited Sites
- Favorites: Favorites
- Open Links: In New Tab

iPhone 6 - iPhone 6 / iOS 9.2 (13C75)

Carrier 2:35 AM

Safari | Search Engine

- Google ✓
- Yahoo
- Bing
- DuckDuckGo

UINavigationController

- Should be the « root » view controller
- has a navigation bar
- embeds a potential « stack » of child view controllers, pushed/popped onscreen
- handles navigation transitions for you
- child view controllers use their 'self.navigationController' property

examples

```
// You want to push ‘inventory’ from a current child viewcontroller
[self.navigationController pushViewController:inventory animated:YES];



// You want to pop the current child viewcontroller out. (‘back’ action)
[self.navigationController popViewControllerAnimated:YES];


// + other methods.
```

Conclusions

To go further

- Learn objective-c, swift language
- Learn to use iOS SDK documentation : components, frameworks, etc.
- Understand app architecture design.