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iOS PROGRAMMING EDUCATIONALS

Session #4



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QUESTIONS?

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Topics Today

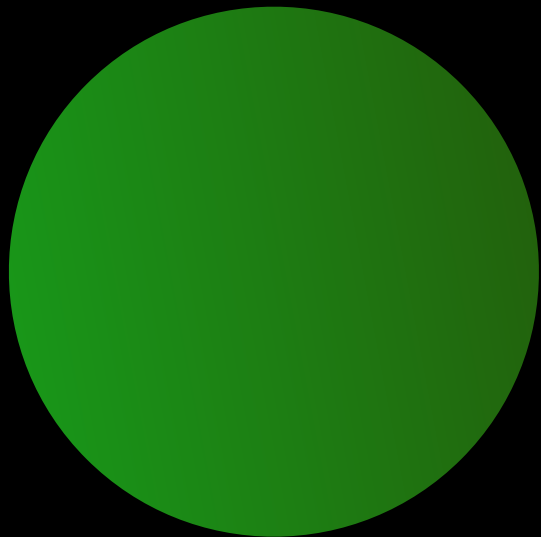
- Classes
- Objects
- Model-View-Controller (MVC)

```
NSLog(@"Hello, Real World!");
```

Classes

- User-defined compound type
- Defines the properties and related function for a type of object
- Every **instance** of a class shares the same properties and functionality

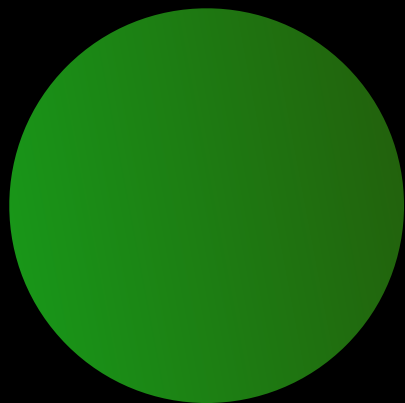
Classes



- Every ball:
 - can bounce and roll
 - has a diameter and colour

Class Inheritance

- Subclasses inherit from all their superclasses
- The same way a ball inherits functionality from the class of round sports equipment which inherits functionality from the class of all sports equipment



Defining Classes

Start here...

Person.h

ViewController.h

```
//  
//  Person.h  
//  FNDemo4  
//  
//  Created by Mark Hall on 2014-11-11.  
//  Copyright (c) 2014 Founders Network. All rights  
reserved.  
//
```

```
#import <UIKit/UIKit.h>
```

```
@interface Person : NSObject
```

```
@property NSString *firstName;
```

```
@property NSString *lastName;
```

```
-(void)sayHello;
```

```
@end
```

ViewController.h

```
//  
// Person.h  
// FNDemo4  
//  
// Created by Mark Hall on 2014-11-11.  
// Copyright (c) 2014 Founders Network. All rights reserved.  
//
```

```
#import <UIKit/UIKit.h>
```

```
@interface Person : NSObject
```

```
@property NSString *firstName;
```

```
@property NSString *lastName;
```

```
-(void)sayHello;
```

```
@end
```

The name of the
class

The class from
which our class
inherits

Public **properties**
which are instances
of the NSString
class

An instance method
(a message that the
object can receive)

Now here...

Person.m

ViewController.m

```
//  
//  Person.m  
//  FNDemo3  
//  
//  Created by Mark Hall on 2014-11-11.  
//  Copyright (c) 2014 Founders Network. All rights  
reserved.  
//
```

```
#import "Person.h"
```

```
@interface Person ()
```

```
@end
```

```
@implementation Person
```

```
-(void)sayHello{  
    NSLog(@"Hello, World!");  
}
```

```
@end
```

ViewController.h

```
//  
// Person.m  
// FNDemo3  
//  
// Created by Mark Hall on 2014-11-11.  
// Copyright (c) 2014 Founders Network. All rights reserved.  
//
```

```
#import "Person.h"
```

```
@interface Person ()
```


```
@end
```

```
@implementation Person
```

```
-(void)sayHello{  
    NSLog(@"Hello, World!");  
}
```

```
@end
```

Implementation of
the method we
declared in the
interface



Objects

- Contain both data and related functionality
- An app is a network of intercommunicating objects

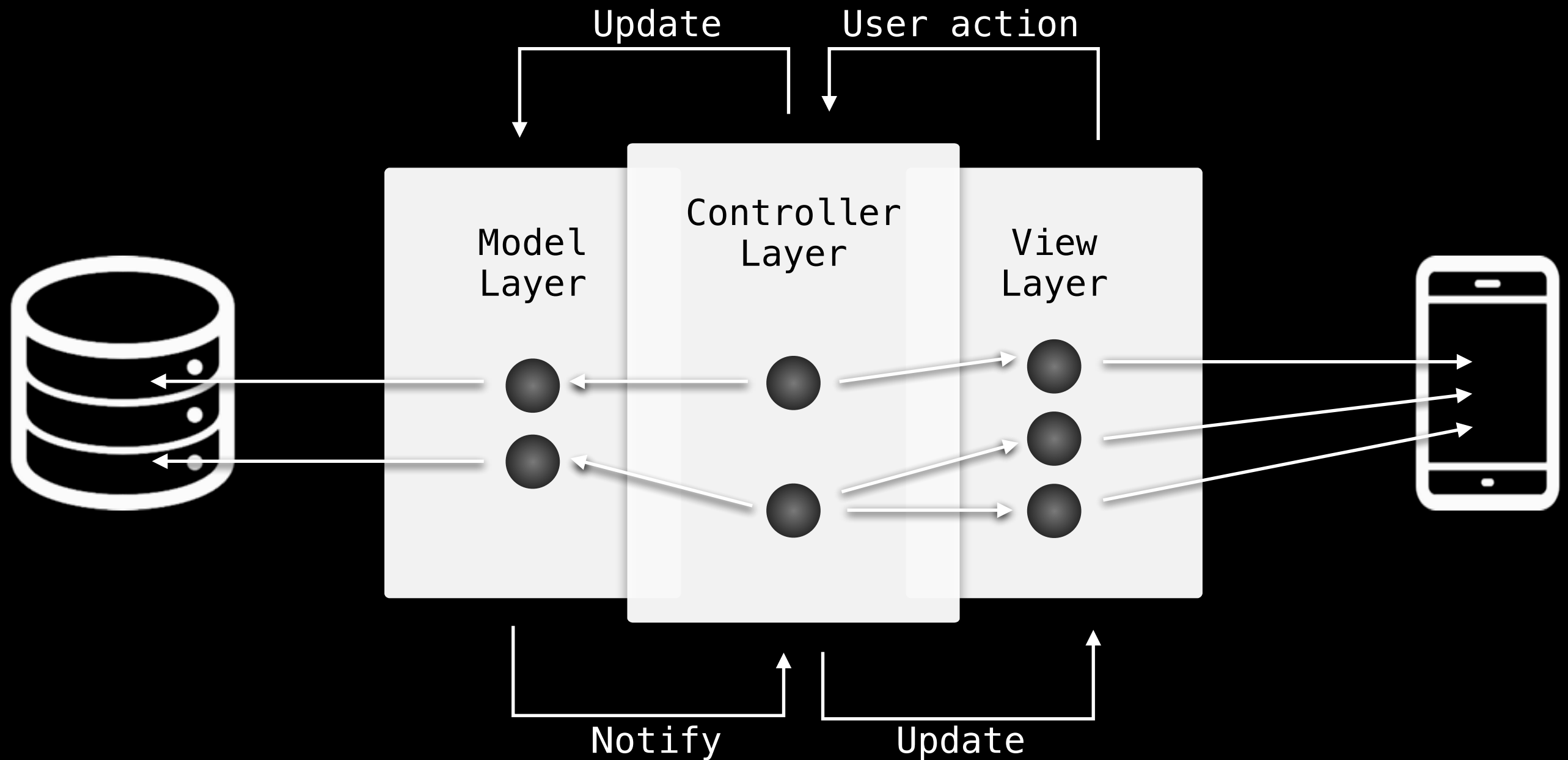
The **receiver** of the
message

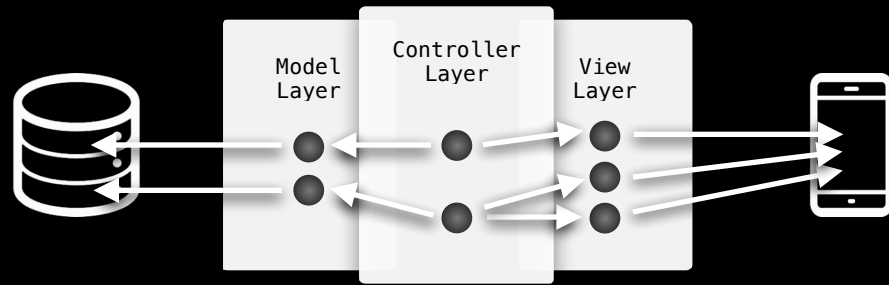
The name of the **method** to
call on that receiver



```
[someObject doSomething];
```

Model-View-Controller

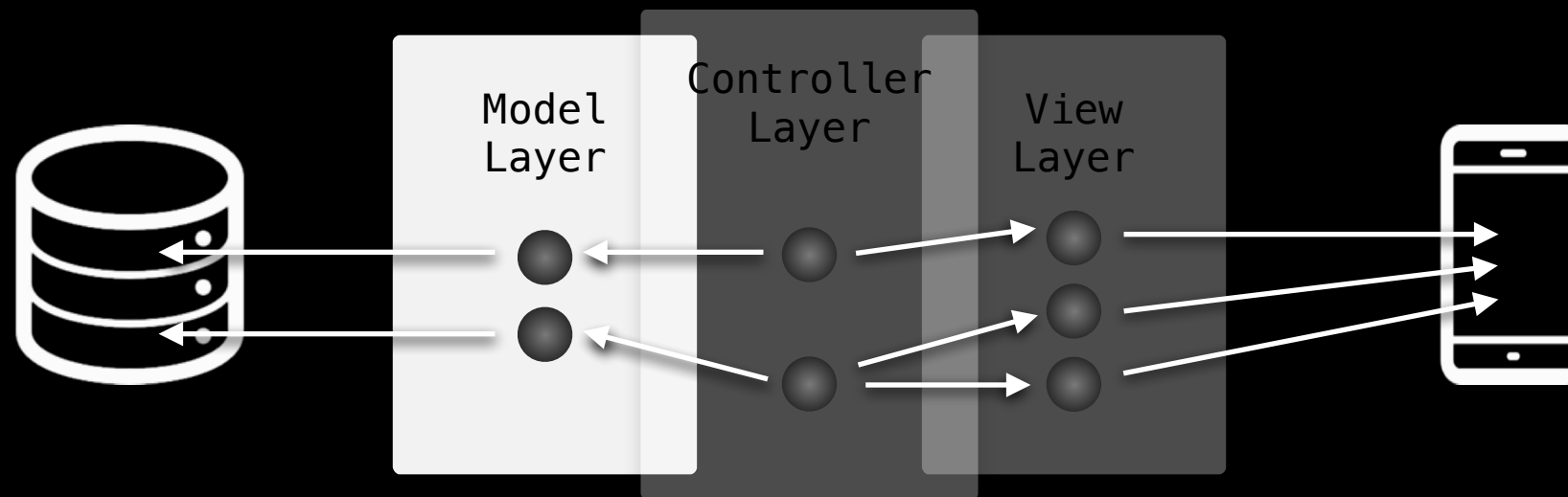




Model-View-Controller

- Classifies objects according to their general roles
 1. Model objects
 2. View objects
 3. Controller objects
- Defines the way communication occurs between these objects
- Layer - collection of objects of a specific type

Model Objects

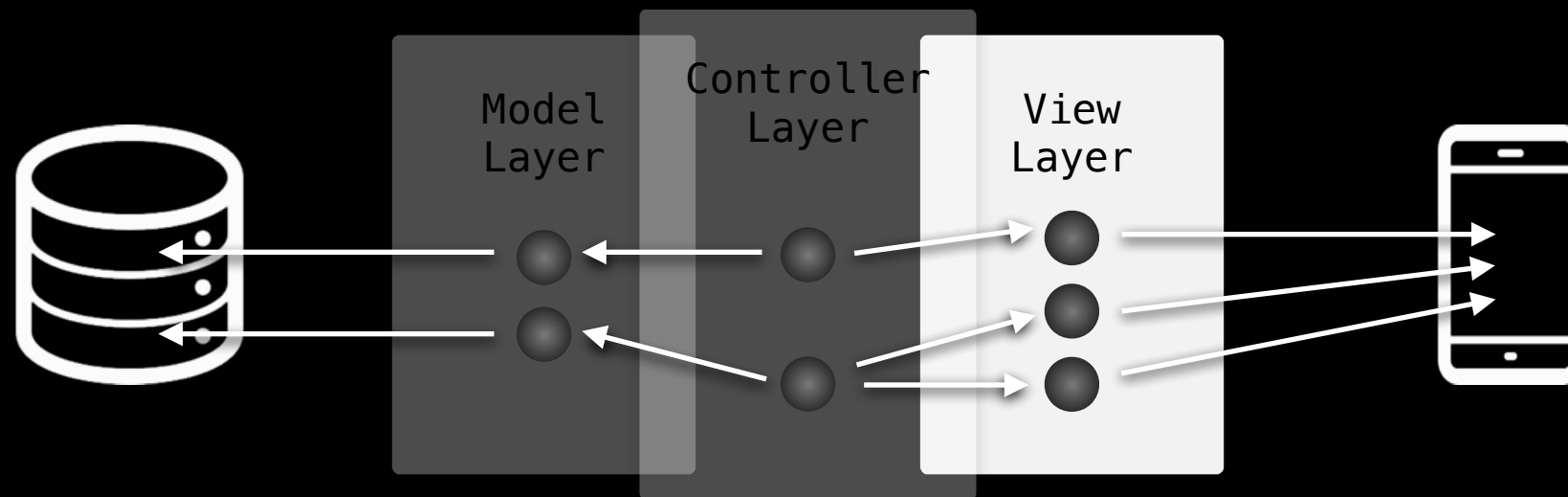


- Hold data, and how to store the data and work with it
- Should not be concerned with how the data is presented to the user of the app
 - alternatively, the view object should ask the model object for data when it wants to present it

`NSArray`

`NSDictionary`

View Objects



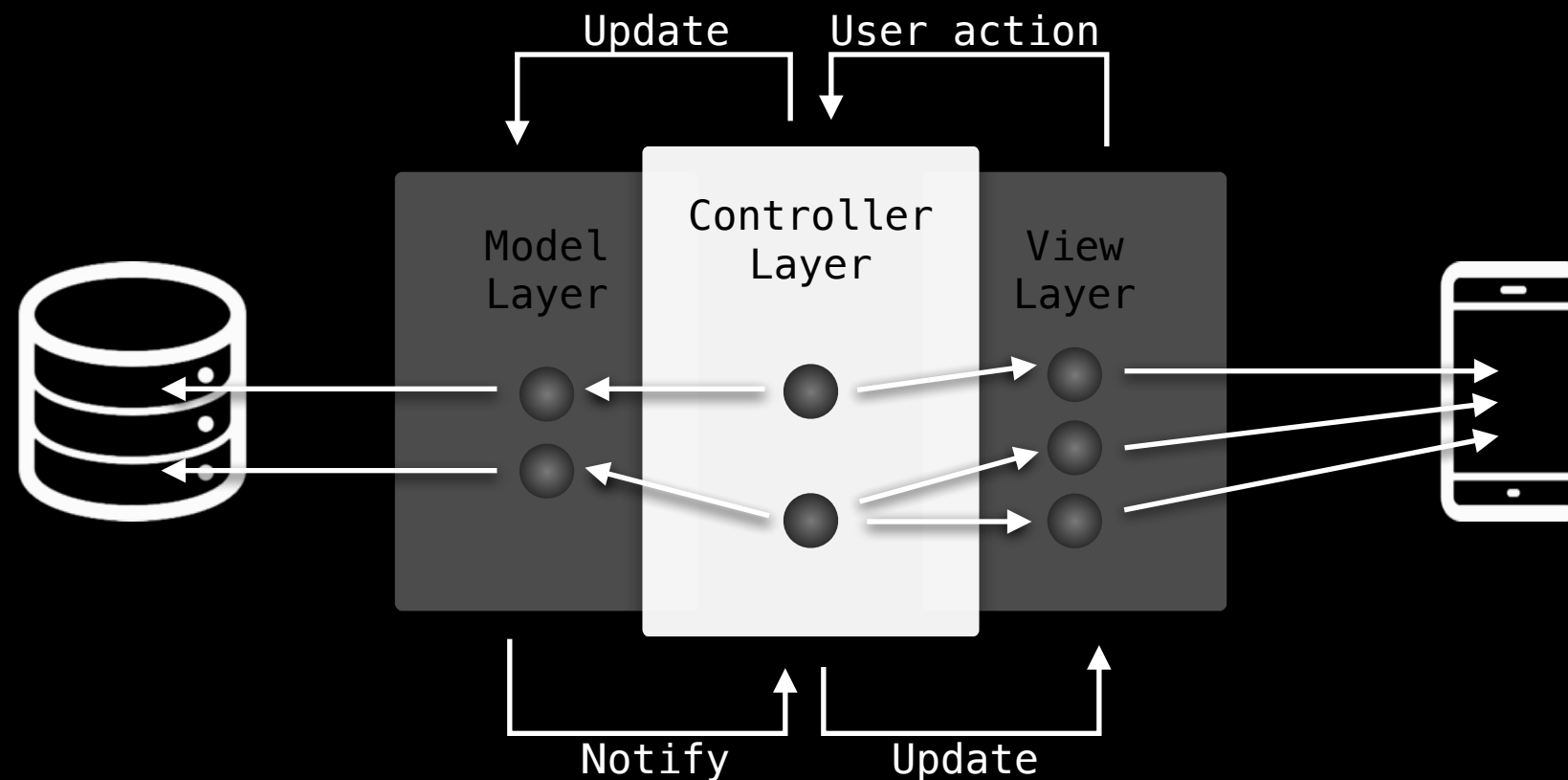
- Concerned with displaying and allowing the user to edit data from the model, *not* storing the data it displays

UIButton

UILabel

UITextField

Controller Objects



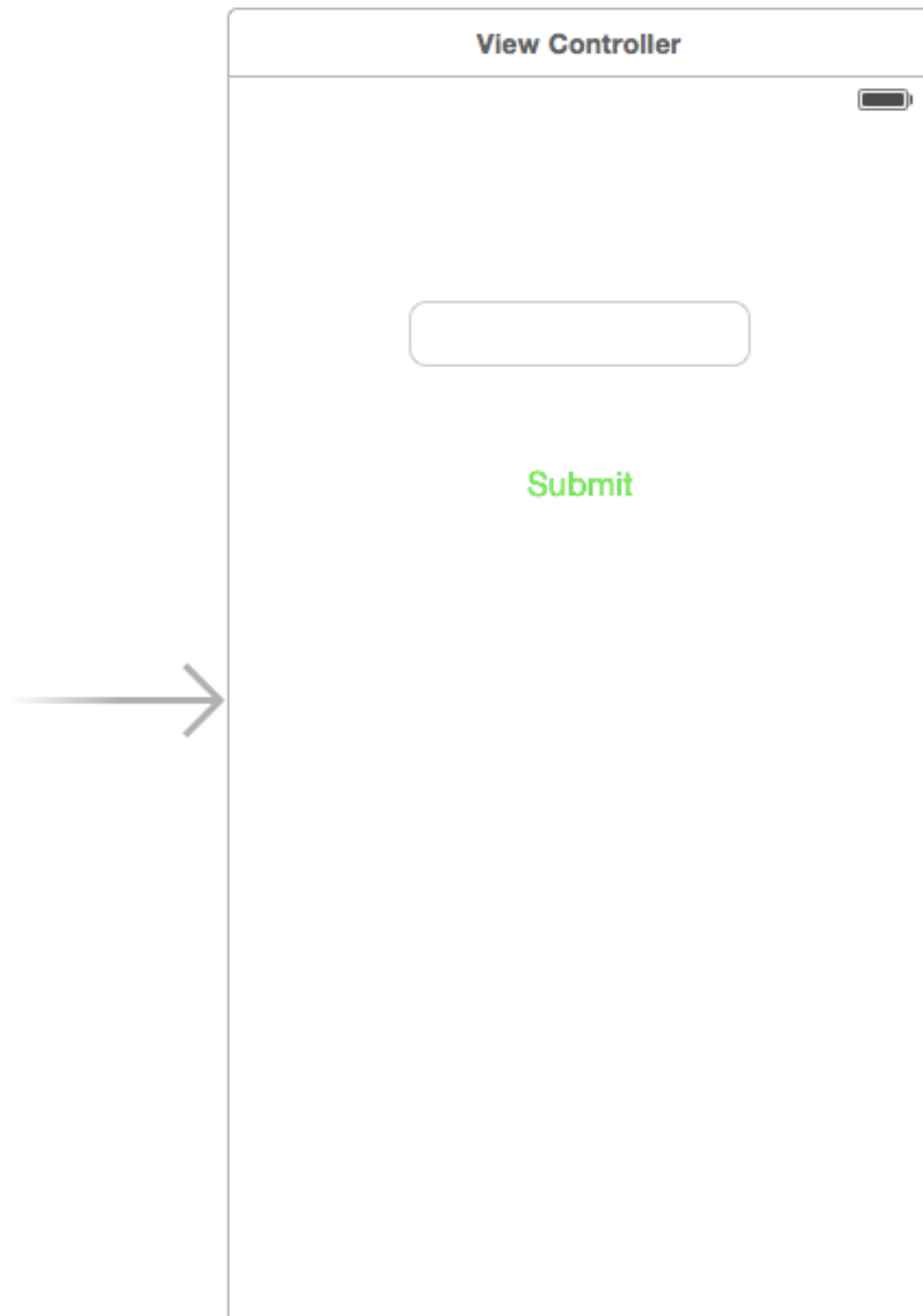
- Ensures the view objects have access to the necessary model objects
- Provides a way for view objects to learn about changes to the model

UIViewController

UINavigationController

UITabBarController

Example - Entering text in a text field



- User enters text in a text field and presses submit
- Value is communicated to controller object
- May communicate with model objects to update the model
- May change a property of the model object

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PROJECT IV

Address Book