# #7 It has to bounce

And some local data storing



## Local storage

Let's get the boring stuff out of the way

#### Reasons to store data

- Better user experience
  - Show users something while you fetch new data (e.g. Facebook, Twitter, Instagram...)
- Need for a local database
- + You need to remember data so you can retrieve it at any time later

### Commonly saved types of data

- + Primitive values
- + Custom objects
- Media (images, videos, etc.)

# Storing primitive values

Aka using NSUserDefaults

#### **NSUserDefaults**

- Commonly used to store app preferences
- Can store either primitive objects, or custom classes if they implement NSCoder protocol
  - + NSCoder is a bit tedious
- Can be synced with iCloud

#### NSUserDefaults usage

Storing a value

```
[[NSUserDefaults standardUserDefaults] setObject:@"123456"
forKey:@"token"];
[[NSUserDefaults standardUserDefaults] synchronize];
```

Retrieving a value

```
NSString *token = [[NSUserDefaults standardUserDefaults]
objectForKey:@"token"];
```





Demo

# **Storing files**

Documents, pics, anything that you can't bundle with your app

#### **Documents directory**

- Something like a user directory on every major OS
- Used to store documents created by users, downloaded, and sometimes, given from other apps
- \* Synced to iCloud by default which will cause your app to be rejected if you abuse the storage amount

# Storing an image to documents directory

 Storing the image UIImage \*image; NSData \*pngData = UIImagePNGRepresentation(image); NSArray \*paths = NSSearchPathForDirectoriesInDomains(NSDocumentDirectory, NSUserDomainMask, YES); NSString \*documentsPath = [paths objectAtIndex:0]; NSString \*filePath = [documentsPath stringByAppendingPathComponent:@"image.png"]; [pngData writeToFile:filePath atomically:YES]; Retrieving the image NSData \*pngData = [NSData dataWithContentsOfFile:filePath]; UIImage \*image = [UIImage imageWithData:pngData];



# Storing complex data

This can get really complicated

#### CoreData

- Object graph and persistence framework
- Sort of like a relational database (RDBMS)
- Except it's not
- + Official documentation:

https://developer.apple.com/library/mac/documentation/Cocoa/ Conceptual/CoreData/cdProgrammingGuide.html



### Other options

- Third party libs with persistence management
  - https://github.com/couchbase/couchbase-lite-ios
  - https://realm.io/
  - SQLite (manually mostly)

## Animations

Bouncy bouncy

## Bring on the sexy

- The visual identity of iOS apps are sexy animations
- Handled by Core Animation where the most of the complex stuff is tucked away from the developers
- + Individual frames are left to the OS to handle

#### Part 1

UIView animations

## UIView animatable properties

- + frame
- + bounds
- + center
- + transform
- + alpha
- backgroundColor
- + contentStretch

# **Animating stuff**

```
[UIView animateWithDuration:1.0f animations:^{
    imageView.alpha = 1.0;
}];
```





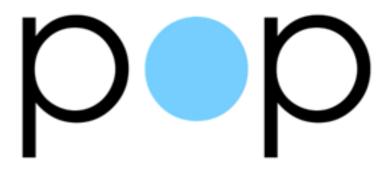
Demo

#### pop

pop will save the world

### What's pop?

- Facebook's library for physics animations
- https://github.com/facebook/pop
- Allows easy organic animations
- Usually there's no way to time animations





# Using pop

```
POPSpringAnimation *animation = [POPSpringAnimation
animationWithPropertyNamed:kPOPLayerCornerRadius];
animation to Value = @(50.0f);
animation.springBounciness = 16;
animation.springSpeed = 2;
[self.imageView.layer pop_addAnimation:animation forKey:@"corners"];
```



Demo

# **DZ 7**

This one is easy

#### DZ do 31.7.

Pimp my app.

Neobvezno, možete token nakon logiranja spremiti negdje u NSUserDefaults pa preskočiti login po potrebi. Ovdje morate samo paziti na to da u nekom trenutku taj login mora biti dostupan ako vas API izbaci van pa taj proces morate opet proći.

#### DZ extra

Dodajte caching postova u aplikaciju:). Tehnologija i princip nisu važni, implementirajte bilo koju nativnu ili third party opciju tako da jednom učitane postove čuvate negdje.

# Appendix

- Data storage
  - + NSUserDefaults
  - File system overview
  - Core Data programming guide
- Animations
  - + **UIView animations**
  - + <u>pop</u>