



Camera Does What?



Who the Heck?

- Recovering IT Director
- Writing software for money since 1980 or so
- Currently write Java, ObjC, C# and php as part of my work



Agenda

- Camera Choices
- Setting Up AVFoundation
- Mistakes I Made so You don't Have To



Capturing a Check

- Deliver the full screen photo of both back and front
- Deliver a 1200x1600 (max) image to the back end provider
- Initial examination of quality is done by a back end
- Backup is humans staring at giant screens



A More Modern Way

- Crop the image to lower the payload size
- Detect image rectangle
- Apply Filters to image to correct distortion
- Take the picture for them



The Human Interface

- Flicker
- Speed of capture
- Image Review



The Most Basic

- UIImagePickerController
- Easy to Set Up
- Has some “limitations” (rotation, overlay, controls tweaking)
- Simulator can’t do camera

To Xcode!



In Steps AV Foundation

- Has a reputation for being hard
- Clearly a thin wrapper around a bunch of C
- Completely Customizable
- We can easily add Filters

<https://github.com/waltertyree/SimplestAVCamera>

To Xcode!



Silly Issues

- UIImage can have an infinite bounds
- CGAffineTransform are stringly typed
- High Quality Capture is Async
- Users seem to like double tapping



Silly Issues

- JPEGs are created from the backing CGImage of a UIImage

```
frontJPEG = [UIImageJPEGRepresentation(frontImage, 1.0)];
```



```
- (NSData*)convertImageToJPEG:(UIImage *)image {  
    // Compress to JPEG  
  
    CIImage *tempImage = image.CIImage;  
    CIContext *convertingContext = [CIContext  
contextWithOptions:nil];  
    CGImageRef processedCGImage = [convertingContext  
createCGImage:tempImage fromRect:tempImage.extent];  
    NSData *jpeg = UIImageJPEGRepresentation((__bridge  
UIImage *) _Nonnull)(processedCGImage), 0.8);  
    CGImageRelease(processedCGImage);  
    return jpeg;  
}
```



Resources

- https://developer.apple.com/library/ios/documentation/GraphicsImaging/Reference/CoreImageFilterReference/index.html#//apple_ref/doc/filter/ci/CIMaximumComponent
- https://developer.apple.com/library/ios/documentation/UIKit/Reference/UINavigationController_Class/index.html
- https://developer.apple.com/library/ios/documentation/AVFoundation/Reference/AVCaptureSession_Class/index.html
- https://developer.apple.com/library/ios/documentation/AudioVideo/Conceptual/AVFoundationPG/Articles/00_Introduction.html#//apple_ref/doc/uid/TP40010188



Thank You

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