# Objective-C

## Protocols

* Protocol is like an interface.
* Basically, it’s a promise that anything that will implement this protocol(interface) will implement these lists of methods.
* How to define protocols:
  + @protocol ProtocolName<ProtocolToExtend>
  + @optional
  + // Optional methods
  + @required
  + // Required methods
  + @end
  + In protocol to extend, you can use other protocols that you want to this protocol to implement. This is like inheritance. If you don’t want to implement then just use NSObject
* How to make a class implement protocol:
  + @interface ClassName: SuperClass<ProtocolName>
  + OR
  + @interface ClassName() <ProtocolName>

## Delegates

* Delegate implements a protocol.
* The benefit is reducing dependencies between objects.
* When referring to an object that implements a protocol do this
  + id <ProtocolName> myVariable;
* Example of protocols and delegates:
  + @protocol FrecklesDelegate <NSObject>
  + @required
  + - (void)freckedDidSmackLips:(Freckles \*)freckles;
  + - (void)frecklesDidLookHopeful:(Freckles \*)freckles;
  + @end
  + @interface Freckles : NSObject
  + @property (nonatomic, strong) id<FrecklesDelegate> delegate;
  + // This means any class that uses FrecklesDelegate can be used here
  + - (void)hasToGoBathroom;
  + - (void)isHungry;
  + @end
  + #import "Freckles.h"
  + @implementation Freckles
  + - (void)hasToGoBathroom {
  + [\_delegate frecklesDidSmackLips:self];
  + }
  + - (void)isHungry {
  + [\_delegate frecklesDidLookHopeful:self];
  + }
  + @end
  + #import "Freckles.h"
  + @interface Stephanie: NSObject <FrecklesDelegate>
  + - (void)freckedDidSmackLips:(Freckles \*)freckles;
  + - (void)frecklesDidLookHopeful:(Freckles \*)freckles;
  + @end
  + #import "Freckles.h"
  + @interface Vicki: NSObject <FrecklesDelegate>
  + - (void)freckedDidSmackLips:(Freckles \*)freckles;
  + - (void)frecklesDidLookHopeful:(Freckles \*)freckles;
  + @end
  + // Now all we need to do is
  + freckles.delegate = stephanie;
  + // or
  + freckles.delegate = vicki;
  + // In this case it will go to implementation file of freckles and when the functions are called, it will call the delegate file whichever is declared.