Application Life Cycle
CIS 399 - iOS Application Development

main.m

• The entry point for any application
• Configures an NSAutoReleasePool
• Invokes UIApplicationMain
• Releases the NSAutoReleasePool
• Returns some return value

```c
int main(int argc, char *argv []) {
    NSAutoreleasePool *pool = [[[NSAutoreleasePool alloc] init];
    int retVal = UIApplicationMain(argc, argv, nil, nil);
    [pool release];
    return retVal;
}
```
**UIApplicationMain()**

- Creates the UIApplication (singleton) object
- [Maybe] Creates the UIApplicationDelegate instance and assigns it to the UIApplication
- Setups up the main run loop (event cycle) and begins processing events
- [Maybe] Loads the applications main NIB as specified in the Info.plist
- Never actually returns

```c
int UIApplicationMain (  
    int argc,  
    char *argv[],  
    NSString *principalClassName,  
    NSString *delegateClassName  
);
```

**UIApplication**

- Centralized point of control for an application (Singleton)
- Can be retrieved by calling [UIApplication sharedApplication]
- Various application level properties
- Responsible for dispatching events
- Point for notification registration
- Methods to manage background tasks
UIApplicationDelegate

- Allows for application specific behavior in response to Application events
- Generally the first point where application specific code starts to run:
  `application:didFinishLaunchingWithOptions:`

Run Loops

- Provided by the CoreFoundation framework
- The event cycle that keeps an application running
- One per thread that needs to handle events (at least the main thread)
Info.plist & MainWindow.nib

• Every application has an Info.plist
• Determines high level application properties (display name, icon, supported orientations, main NIB, etc)
• Contains the main window and UIApplicationDelegate instance
• Connects some things together

Related Reading

• From the developer documentation
  • UIKit Function Reference
  • UIApplication / UIApplicationDelegate Reference
• “The Application Life Cycle” and “Build-Time Configuration Details” sections of iOS Programming Guide
• “Run Loops” section of Threading Programming Guide