Fabrice.Kordon@lip6.fr

**Objective-C,
some useful predefined classes**

# As an introduction…

## Useful for programming

- Reference (optimized) implementation

## Which classes?

- NSArray
  - ▶ **Ordered collection**
- NSDictionnary
  - ▶ **A dictionnaire (association key/value)**
- NSSet
  - ▶ **Unordered collection**

## Immutable and mutable versions

- Dedicated memory management

**Objective**
*Store «objects»*

F. Kordon - Sorbonne Université - CC2018

```
NSArray *col;

col = [NSArray arrayWithObjects:@"blue", @"white", @"red", nil];

NSLog (@"number of colors %lu", (unsigned long)[col count]);

NSLog (@"Third color : %@", [col objectAtIndex:2]);
```

RTFM!

## Access similar to NSArray

## A few more methods for update

```
NSMutableArray *col = [NSMutableArray array];
[col addObject:@"blue"];
[col addObject:@"red"];
[col insertObject:@"white" atIndex:1];
[col removeObjectAtIndex:0];
```

RTFM!

```
NSDictionary *col = [NSDictionary
                     dictionaryWithObjectsAndKeys:@"0000FF", @"blue",
                     @"FFFFFF", @"white",
                     @"FF0000", @"red",
                     nil];


NSLog (@"RVB for white : %@",
       [col valueForKey:@"white"]);
NSLog (@"color for #0000FF : %@",
       [col allKeysForObject:@"0000FF"]);
```

RTFM!

## Access similar to NSDictionary

## A few more methods for update

```
NSMutableDictionary *col =[NSMutableDictionary dictionary];
[col setObject:@"blue" forKey:@"0000FF"];
[col removeObjectForKey:@"000000"];
[col removeAllObjects];
```

**RTFM!**

## Only one occurrence of each object

Order not preserved

```
NSSet *set = [NSSet setWithObjects:@"toto", @"titi",
                @"tata", nil];
NSLog (@"One random : %@", [set anyObject]);
NSLog (@"There are %d element(s)", (int)[set count]);
if ([set member:@"Rominet"] == nil) {
    NSLog(@"Titi can rest");
} else {
    NSLog(@"Alert, Sylvester arrives!");
}

NSArray *table = [set allObjects];
NSLog (@"Who are they ? %@", [table description]);
```

RTFM!

```objc
NSMutableSet *mset = [NSMutableSet setWithCapacity:3];
[mset addObject:@"titi"];
[mset addObject:@"Rominet"];
if ([mset member:@"Rominet"] == nil) {
    NSLog(@"Titi can rest");
} else {
    NSLog(@"Alert, Sylvester arrives!");
}
[mset removeObject:@"Rominet"];
if ([mset member:@"Rominet"] == nil) {
    NSLog(@"Titi can rest");
} else {
    NSLog(@"Alert, Sylvester arrives!");
}
```

RTFM!

# As a conclusion…

## You have many more…  **RTFM!**

## Useful bases

Similare to the «Standard Template Library» in C++

**Value Objects**
- NSAffineTransform
- NSCalendar
- NSCache
- NSData —— NSMutableData —— NSPurgeableData
- NSDate —— NSCalendarDate
- NSDateComponents
- NSDecimalNumberHandler
- NSLocale
- NSNull
- NSTimeZone
- NSValue —— NSNumber —— NSDecimalNumber
- NSValueTransformer

**XML**
- NSXMLNode
  - NSXMLDocument
  - NSXMLDTD
  - NSXMLDTDNode
  - NSXMLElement
- NSXMLParser

**Strings**
- NSAttributedString —— NSMutableAttributedString
- NSCharacterSet —— NSMutableCharacterSet
- NSString —— NSMutableString
- NSFormatter —— NSDateFormatter / NSNumberFormatter
- NSScanner
- NSSortDescriptor

**Collections**
- NSArray —— NSMutableArray
- NSDictionary —— NSMutableDictionary
- NSEnumerator —— NSDictionaryEnumerator
- NSHashTable
- NSIndexPath
- NSIndexSet —— NSMutableIndexSet
- NSMapTable
- NSPointerArray
- NSPointerFunctions
- NSSet —— NSMutableSet —— NSCountedSet

**Predicates**
- NSExpression
- NSPredicate —— NSComparisonPredicate / NSCompoundPredicate

NSObject

**Operating-System Services**
- NSError
- NSHost
- NSNetService
- NSNetServiceBroswer
- NSOrthography
- NSProcessInfo
- NSRunLoop
- NSSpellServer
- NSTextCheckingResult
- NSTimer
- NSUserDefaults

**File System**
- NSBundle
- NSFileHandle
- NSFileManager
- NSMetadataItem
- NSMetadataQuery
- NSMetadataQueryAttributeValueTuple
- NSMetadataQueryResultGroup
- NSStream —— NSInputStream / NSOutputStream

**URL**
- NSCachedURLResponse
- NSHTTPCookie
- NSHTTPCookieStorage
- NSURL
- NSURLAuthorizationChallenge
- NSURLCache
- NSURLConnection
- NSURLCredential
- NSURLCredentialStorage
- NSURLDownload
- NSURLProtectionSpace
- NSURLProtocol
- NSURLRequest —— NSMutableURLRequest
- NSURLResponse —— NSHTTPURLResponse

**Interprocess Communication**
- NSPipe
- NSPort —— NSMachPort / NSMessagePort / NSSocketPort
- NSPortMessage
- NSPortNameServer —— NSMachBootstrapServer / NSMessagePortNameServer / NSSocketPortNameServer

**Locking/Threading**
- NSConditionLock
- NSDistributedLock
- NSLock
- NSOperation —— NSBlockOperation / NSInvocationOperation
- NSQueue
- NSRecursiveLock
- NSTask
- NSThread

NSObject

**Notifications**
- NSNotification
- NSNotificationCenter —— NSDistributedNotificationCenter
- NSNotificationQueue

**Archiving and Serialization**
- NSCoder —— NSArchiver / NSKeyedArchiver / NSKeyedUnarchiver / NSPortCoder / NSUnarchiver
- NSPropertyListSerialization

**Objective-C Language Services**
- NSAssertionHandler
- NSAutoreleasePool
- NSClassDescription
- NSException
- NSGarbageCollector
- NSInvocation
- NSMethodSignature
- NSUndoManager —— NSScriptClassDescription

**Scripting**
- NSAppleEventDescriptor
- NSAppleEventManager
- NSAppleScript
- NSPositionalSpecifier
- NSScriptCoercionHandler
- NSScriptCommand
  - NSCloneCommand
  - NSCloseCommand
  - NSCountCommand
  - NSCreateCommand
  - NSDeleteCommand
  - NSExistsCommand
  - NSGetCommand
  - NSMoveCommand
  - NSQuitCommand
  - NSSetCommand
- NSScriptCommandDescription
  - NSIndexSpecifier
  - NSMiddleSpecifier
  - NSNameSpecifier
- NSScriptExecutionContext
  - NSPropertySpecifier
  - NSRandomSpecifier
- NSScriptObjectSpecifier
  - NSRangeSpecifier
  - NSRelativeSpecifier
- NSScriptSuiteRegistry
  - NSUniqueIDSpecifier
  - NSWhoseSpecifier
- NSScriptWhoseTest —— NSLogicalTest / NSSpecifierTest

**Distributed Objects**
- NSConnection
- NSDistantObjectRequest
- NSDistantObject
- NSProtocolChecker

NSObject

NSProxy