LITS

iOS. Xcode. Swift

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Знайомимося

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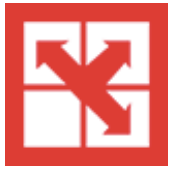
Формат

Заняття в аудиторії 

Самостійна робота  moodle.lits.com.ua  GitHub

Практичні завдання + Дипломний проект

“Зробіть” = “Зробіть, **не** користуючись stackoverflow.com”

Спілкування 

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Зміст курсу

8.3

3.1

ООП
Паттерни
Git
…

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Чому

iOS-розробка влаштована саме так

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iOS - Основна особливість

App Store

Продукти постачаються користувачам лише через AppStore (*)

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App Store

- Для користувача: Apple гарантує безпеку і що аппа “ОК”
- Для розробника:
  - майданчик для продажу
  - але обмеження
- Apple обмежує можливість зробити продукт, що не відчувається, як рідний

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Обмеження

- Взаємодія з файловою системою та іншими програмами (Sandbox)
- Лише публічне API
- Лише Xcode на зареєстрованому Apple комп'ютері
- Хаки суворо заборонені
- Обмежена багатозадачність
- Декларативна функціональність (iCloud, in-App Purchases, Push Notifications, etc)

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Нема вибору

- ви будете використовувати системне API
  - правильно!
- ви напишете стабільний зручний продукт
- користувач буде сприймати ваш продукт як органічну частину екосистеми Apple

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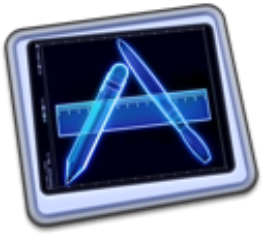
Xcode IDE

Xcode

iOS Simulator

InterfaceBuilder

Playgrounds



Instruments

Project Configuration
Assets Management
Code Signing

Continuous Integration
Testing
Etc…

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Xcode

InterfaceBuilder

LITS

iOS SDK

Cocoa Touch

Media Frameworks

App Frameworks

Core Services

CoreOS

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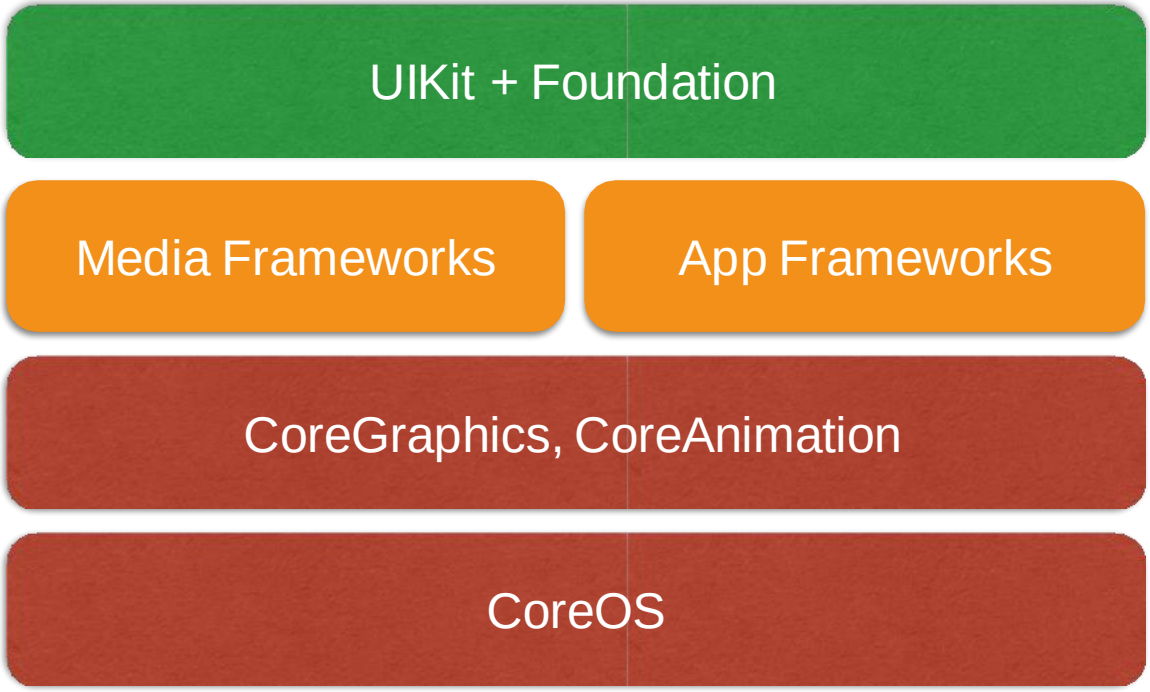
iOS SDK

UIView, UIColor
NSString, NSArray

MKMapView
EKEvent

CGPoint, CGRect
CALayer



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Objective-C

- Об’єктно-орієнтована мова, дериватив від C
- Окрема лінія розвитку ООП-мов, ніж C++, Java (йде від Smalltalk)
- Динамічний runtime
- Підтримується та покращується Apple (*)

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Objective-C | Swift

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Swift

- Нова мова, з’явилася у 2014 році
- Swift 3.1 - поточна версія в Xcode 8.3
- Все найкраще з Objective-C
  - без C
- Сучасні мовні конструкції
  - вкл. запозичення з функціональних мов програмування
- Open-source (swift.org)

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Swift

```
struct Point {



}
```

```
class Record {



}
```

LITS

Swift

```
struct Point {




}

var point: Point
```

```
class Record {




}

var record: Record
```

LITS

Swift

```
struct Point {




}

var point: Point = Point()
```

```
class Record {




}

var record: Record = Record()
```

LITS

Swift

```
struct Point {



}

var point = Point()
```

```
class Record {



}

var record = Record()
```

Type Inference

LITS

Swift

```
struct Point {
  var x: Int
  var y: Int



}

var point = Point(x: 0, y: 0)
```

```
class Record {



}

var record = Record()
```

LITS

Swift

```
struct Point {
  var x: Int
  var y: Int



}

var point = Point(x: 0, y: 0)
```

```
class Record {
  var name: String = ""
  var lastName: String = ""



}

var record = Record()
```

LITS

Swift

```
struct Point {
   var x: Int
   var y: Int




}

var point = Point(x: 0, y: 0)
```

```
class Record {
   var name: String
   var lastName: String
   init() {
      name = ""
       lastName = ""
   }
}

var record = Record()
```

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Swift

```
struct Point {
  var x: Int
  var y: Int




}

var point = Point(x: 0, y: 0)
point.x = 5
point.y = 10
```

```
class Record {
  var name: String = ""
  var lastName: String = ""




}

var record = Record()
record.name = “John”
record.lastName = “Doe”
```

LITS

Swift

```
struct Point {
   var x: Int = 5
   var y: Int = 10
}

var point = Point()
```

```
class Record {
   var name: String = ""
   var lastName: String = ""

}

var record = Record()
record.name = “John”
record.lastName = “Doe”
```

LITS

Swift

```
struct Point {
  var x: Int = 5
  var y: Int = 10
}

var point = Point()
```

```
class Record {
  var name: String = ""
  var lastName: String = ""

  func fullName()


}

var record = Record()
record.name = “John”
record.lastName = “Doe”
```

LITS

Swift

```
struct Point {
  var x: Int = 5
  var y: Int = 10

}

var point = Point()
```

```
class Record {
  var name: String =""
  var lastName: String = ""

  func fullName() -> String {

  }
}

var record = Record()
record.name = “John”
record.lastName = “Doe”
```

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Swift

```
struct Point {
  var x: Int = 5
  var y: Int = 10

}

var point = Point()
```

```
class Record {
  var name: String = ""
  var lastName: String = ""

  func fullName() -> String {

  }
}

var record = Record()
record.name = “John”
record.lastName = “Doe”

label.text = record.fullName()
```

LITS

Swift

```
struct Point {
  var x: Int = 5
  var y: Int = 10

}

var point = Point()
```

```
class Record {
  var name: String = ""
  var lastName: String = ""

  func fullName() -> String {
    return name + " " + lastName
  }
}

var record = Record()
record.name = "John"
record.lastName = "Doe"

label.text = record.fullName()
```

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Named Parameters

```
struct Point {
  var x: Int = 5
  var y: Int = 10

  func offset(x: Int, y: Int) {

  }
}

var point = Point()
```

```
class Record {
  var name: String = ""
  var lastName: String = ""

  func fullName() -> String {
    return name + " " + lastName
  }
}

var record = Record()
record.name = "John"
record.lastName = "Doe"

label.text = record.fullName()
```

LITS

Named Parameters

```
struct Point {
  var x: Int
  var y: Int

  func offset(x: Int, y: Int) {

  }
}

var point = Point()
point.x = 5
point.y = 10

point.offset(x: 2, y: -1)
```

```
class Record {
  var name: String = ""
  var lastName: String = ""

  func fullName() -> String {
    return name + " " + lastName
  }
}

var record = Record()
record.name = "John"
record.lastName = "Doe"

label.text = record.fullName()
```

LITS

Named Parameters

```
struct Point {
  var x: Int = 5
  var y: Int = 10


  func offset(by x: Int,  y: Int) {


  }
}

var point = Point()

point.offset(by: 2, y: -
1)
```

```
class Record {
  var name: String = ""
  var lastName: String = ""

  func fullName() -> String {
    return name + " " + lastName
  }
}

var record = Record()
record.name = "John"
record.lastName = "Doe"

label.text = record.fullName()
```

LITS

Named Parameters

```
struct Point {
  var x: Int = 5
  var y: Int = 10

  func offset(by x: Int, _ y: Int) {

  }
}

var point = Point()

point.offset(by: 2,-1)
```

```
class Record {
  var name: String
  var lastName: String

  func fullName() -> String {
    return name + " " + lastName
  }
}

var record = Record()
record.name = "John"
record.lastName = "Doe"

label.text = record.fullName()
```

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Class Functions

```
class Record {
  var name: String
  var lastName: String

  static func name() -> String {

    return "Record"
  }
}

label.text = Record.name()
```

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Properties

```
class Record {
  var name: String = ""
  var lastName: String = ""

  var fullName: String {
    get {
       return name + " " + lastName
    }
  }
}
var record = Record()
record.name = “John”
record.lastName = “Doe”
label.text = record.fullName
```

LITS

Properties

```
class Record {
  var name: String = ""
  var lastName: String = ""

  var fullName: String {
    return name + " " + lastName
  }
}

var record = Record()
record.name = “John”
record.lastName = “Doe”
label.text = record.fullName
```

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Properties

```
class Record {
  var name: String = ""
  var lastName: String = ""

  var fullName: String {
    get {
       return name + " " + lastName
    }
    set {
       name = newValue.components(separatedBy: " ").first
       lastName = newValue.components(separatedBy: " ").last
    }

  }
}
```

let record = Record()
record.fullName = "John Doe"

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Instance var vs Param

```
struct Point {
   var x: Int = 5
   var y: Int = 10


   func offset(by x: Int, _ y: Int) {
      x += x
      y += y
   }
}

point.offset(by: 2,-1)
```

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Self

```
struct Point {
   var x: Int = 5
   var y: Int = 10


   func offset(by x: Int, _ y: Int) {
      self.x += x
      self.y += y
   }
}

point.offset(by: 2,-1)
```

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Structs

```
struct Point {
  var x: Int
  var y: Int

  mutating func offset(by x: Int, _ y: Int) {
    self.x += x
    self.y += y
  }
}
```

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Structs vs Classes

```
struct Point {

}

var p1 = Point()
var p2 = Point()

var point = p1
```

Copy

```
class Record {

}

var r1 = Record()
var r2 = Record()

var record = r1
```

Reference

LITS

Structs vs Classes

```
struct Point {

}

var p1 = Point()
var p2 = Point()

var point = p1

let sameObject = p1 === point
```

Copy

false

```
class Record {

}

var r1 = Record()
var r2 = Record()

var record = r1

let sameObject = r1 === record
```

Reference

true

LITS

Structs vs Classes

```
struct Point {

}

var p1 = Point()
var p2 = Point()

let point = p1
point = p2
```

```
class Record {

}

var r1 = Record()
var r2 = Record()

let record = r1
record = r2
```

LITS

Structs vs Classes

```
struct Point {

}

var p1 = Point()
var p2 = Point()

let point = p1
point.x = 10
```

```
class Record {

}

var r1 = Record()
var r2 = Record()

let record = r1
record.name = “Mary”
```

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Tuples

```
func findRecord() -> Record {
  var r: Record

  ...
  return r
}


let record = findRecord()
record.name = “Mary”
```

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Tuples

```
func findRecord() -> (record: Record, index: Int) {
  var r: Record
  var i: Int
  ...
  return (r, i)
}


let pair = findRecord()
pair.record.name = “Mary”
```

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Xcode Playgrounds

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Отже

- Вивчаємо Xcode 8.3 та Swift 3.1
- Читаємо книжку по Swift 3

- Робимо самостійне завдання

  - Ще раз:

  “зробити” = “зорієнтуватися в документації і зробити”