

Spring 2019 / iOS Class
Remote Learning Assignment - Week 2

Object-Oriented Swift

1. Declare a class **Animal** with property **gender** and method **eat()**. The data type of gender should be enum Gender as below and when you call eat() method, it will print I eat everything!

```
enum Gender {  
  
    case male  
  
    case female  
  
    case undefined  
}
```

2. Declare three classes: **Elephant**, **Tiger**, **Horse** that inheriting from Animal and override the eat method to print what they usually eat.
3. Declare a class **Zoo** with a property **weeklyHot** which means the most popular one in the zoo this week. The codes below can't work correctly, please find what data type should A be and solve the problem. Be noticed that **tiger**, **elephant**, **horse** are instances of class Tiger, Elephant and Horse.

```
class Zoo {  
  
    var weeklyHot: A  
  
    init(weeklyHot: A) { }  
}  
  
let zoo = Zoo(weeklyHot: Tiger())  
  
zoo.weeklyHot = tiger  
zoo.weeklyHot = elephant  
zoo.weeklyHot = horse
```

4. What have you learned in *Object-Oriented Swift* session ?
5. What's the difference between **Struct** and **Class** ?
6. What's the difference between **instance method** and **type method** ?
7. What does **Initializer** do in class and struct ?

Spring 2019 / iOS Class
Remote Learning Assignment - Week 2

8. What does **self** mean in an instance method and a type method ?
9. What's the difference between **reference type** and **value type** ?

Spring 2019 / iOS Class
Remote Learning Assignment - Week 2

Enumerations and Optionals in Swift

1. There are several gasoline types, 92, 95, 98, and diesel that we can use enum to model them.
 - Please create enum named `Gasoline` to model gasoline.
 - Every kind of gasoline has its price. Please create a method named `getPrice` in `Gasoline` enum that will return different price depending on different gasoline.
 - Please establish `raw values` for `Gasoline`. The data type of raw value should be `String`. For example, `Gasoline.oil92.rawValue` should be "92".
 - Please explain what is enum `associate value` and how it works
2. Optional is a very special data type in Swift. Take `var a: Int? = 10` for example, the value of `a` will be `nil` or `Int`. You should learn how to deal with optional data type.
 - People would like to have pets, but not everyone could have one. Declare a class `Pet` with `name` property and a class `People` with `pet` property which will store a `Pet` instance or `nil`. Please try to figure out what data type is suitable for these properties in `Pet` and `People`.
 - Please create a `People` instance and use `guard let` to unwrap the `pet` property.
 - Please create another `People` instance and use `if let` to unwrap the `pet` property.

Spring 2019 / iOS Class
Remote Learning Assignment - Week 2

Protocol in Swift

1. Declare a struct **Person** with a **name** property type String and a protocol name **PoliceMan**. There is only one method **arrestCriminals** with no argument and return void in the protocol.
2. Make struct **Person** conform to **PoliceMan** protocol.
3. Declare a protocol **ToolMan** with a method **fixComputer** that no argument and return void.
4. Add a property **toolMan** to the struct Person with data type **ToolMan**.
5. Declare a struct named **Engineer** that conforming to the **ToolMan** protocol.
6. Create a Person instance with the name Steven and also create the relative data you need to declare this instance.

Spring 2019 / iOS Class
Remote Learning Assignment - Week 2

Error Handling in Swift

```
enum GuessNumberGameError {  
    case wrongNumber  
}  
  
class GuessNumeGame {  
    var targetNumber = 10  
  
    func guess(number: Int) throws {  
        guard number == targetNumber else {  
            throw GuessNumberGameError.wrongNumber  
        }  
  
        print("Guess the right number: \(targetNumber)")  
    }  
}
```

Read the code above first and paste it in the playground file, there is an error inside the code. Please solve the error **by adding additional code** in the file. Do not remove or modify the code above. Call `guess(number:)` and pass 20 as the argument after you fix the problem.

Spring 2019 / iOS Class
Remote Learning Assignment - Week 2

Build a Simple iPhone App with Swift (Advanced Optional)

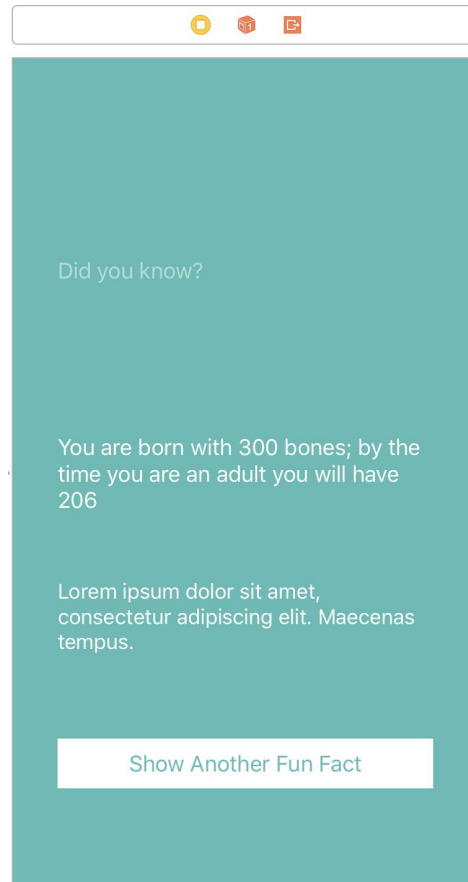
In Treehouse section: Build a Simple iPhone App with Swift, we build a simple app. The image below is the origin design for the app.



Spring 2019 / iOS Class

Remote Learning Assignment - Week 2

Now Let's add some new features. The image below is new design. We add a new label below the `funFactLabel`. The new label is named `assignmentLabel` that it's the same size between `funFactLabel` but **50** pixel below the `funFactLabel`. Every time we press the button, the text in the `assignmentLabel` will change. The text should be random, not in order.



```
let text = [  
  "Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas tempus.",  
  "Contrary to popular belief, Lorem Ipsum is not simply random text.",  
  "Richard McClintock, a Latin professor at Hampden-Sydney College in ",  
  "looked up one of the more obscure Latin words, consectetur",  
  "from a Lorem Ipsum passage, and going through the cites of the word",  
  "This book is a treatise on the theory of ethics, very popular during the.",  
  "The first line of Lorem Ipsum, Lorem ipsum dolor sit amet..",  
  "The standard chunk of Lorem Ipsum used since the 1500s is reproduced.",  
  "There are many variations of passages of Lorem Ipsum available.",  
  "but the majority have suffered alteration in some form"  
]
```