

AppWorks School / 2018 Summer - iOS Class

Remote Assignment - Week 1

Git & GitHub

Please apply for a GitHub account and create a repository. Upload your homework to the repository. After finish the process, please **send your repository link to us through slack direct message**. We will check your assignments through your repository every week.

We need you to architecture your repo as below :

Repo

- week1
 - *[your assignment]*
- week2
 - *[your assignment]*
- week3
 - *[your assignment]*
- week4
 - *[your assignment]*

You should get into the habit of committing your code anytime you have made change to them.

Swift Basic

1.

In swift , we define a variable through the syntax below.

```
var x: Int = 10
```

That's practice this syntax :

When mentioning about calculating circle's area, we use the formula: $2 * radius * PI$ to get area. Now, please define a variable `PI` and assign value to it. You can refer to the syntax above. But think clearly about using `var` or `let` and which data type you should choose.

2.

Create two constants x and y of type `Int` and assign with any value. Please calculate the average of x and y and store the result in a constant named average.

3.

Following with Q2, now we want to save the average in the record system, but the system doesn't accept 65 but 65.0.

- Please solve this problem so that we can put the average in the record system.
- Please explain the difference between (10 / 3) and (10.0 / 3.0).

4.

Swift is a very powerful language. It can infer the data type for you (`Type inference`). But we still need to know the basic theory. Please mark the data type in the following statement:

Ex: `var x = 10` => `var x: Int = 10`

```
var flag = true
var inputString = "Hello world."
let bitsInBite = 8
let averageScore = 86.8
```

5.

`Compound assignment` operator is very useful when programming. Please create salary as 22000, and use `addition assignment operator` adding 28000 to salary, and it will be 50000 after this process.

6.

You should notice that `'=`' has difference meaning in programming. In real world, `'=`' means equal. In programming, `'=`' means `assign`. You simply put the right hand side data into left hand side variable or constant.

Now please write down the `Equality` operator in swift.

7.

Declare two constants and the value are 10 and 3, please calculate the remainder and save the result in a constant `remain`.

8.

Please explain the difference between `let` and `var`.

9.

Please write down naming conventions and rules you learned in this session.

Swift Collection and Control Flow

[\[Reference link: Apple Document\]](#)

Array

You should know how to declare array in swift. Add, remove, insert, read object in an array. You should be familiar with the following syntax : `append`, `insert`, `remove`.

Array is a dangerous stuff in swift. If you access the array with index which is out of range, your app will crash with fatal error. Please interact with array very carefully.

1. Please create an empty array with String data type and save it in a variable named `myFriends`.
2. I have three friends, 'Ian', 'Bomi', and 'Kevin'. Please help me to add their name in to `myFriends` array.
3. I forget to add 'Michael' who is one of my best friend. Please help me to add Michael to the end of `myFriends` array.
4. Because I usually hang out with Kevin, please move Kevin to the begin of the `myFriends` array.
5. Use `for...each` to print all the friend in `myFriends` array.
6. Now I want to know who is at index 5 in the `myFriends` array. Find the answer for me. Please explain how do you get your answer and why the answer is it.
7. How to get the first element in an array?
8. How to get the last element in an array?

Dictionary

1.
Please create an dictionary with keys of type String, value of type Int, and save it in a variable named `myCountryNumber`.
2.
Please add three keys 'US', 'GB', 'JP' with values 1, 44 , 81.
3.
Change the 'GB' value from 44 to 0.
4.
How to declare a empty dictionary ?

For, While, Repeat

1.

Here is an array:

```
let lottoNumbers = [10, 9, 8, 7, 6, 5]
```

Please use for-in loop and Range to print the last three members in the `lottoNumbers` array.

2.

When use for-in loop, we make the computer do the same thing multiple times. But the index in for-in loop is increasing by 1. What if we want to decreasing by -1 ? What if we want to increasing by 2 ? Please use loop to get the result in the console :

```
5  
6  
7  
8  
9  
10
```

```
10  
8  
6
```

Please find a method which can help us complete these requirements.

3.

Please use while loop to solve above question.

4.

Please use repeat-while loop to solve question 2.

If statement

1.

Here is variable `isRaining` to record the weather. Please write a statement that if the weather is raining, print "It's raining, I don't want to work today.", otherwise print "Although it's sunny, I still don't want to work today."

Switch

1.

In a company, we usually use number to represent job level. Let's make a sample. We have four job levels : Member, Team Leader, Manager, Director. We use 1 to present Member, 2 to Team Leader, 3 to Manager, 4 to Director.

Create a variable name `jobLevel` and assign a number to it. If `jobLevel` number is in our list, print the relative job title name. If not, just print "We don't have this job". Please use switch statement to complete this requirement.

Function in Swift

1.

Please declare a function named `greet` with `person` as argument label and parameter name. `greet` method will return a String. For example, if you call the method greet like:

```
greet(person: "Celeste")
```

It will return string: "Hello, Celeste".

2.

Please declare a method named `multiply` with two argument `a` , `b` , and with no return value. When you call this method, compiler will print out the result of `a * b`. Notice that we want to give argument `b` with a default value 10. Please implement this requirement.

3.

What is the difference between argument label and parameter label in function ?

4.

What is the return type in the following statements?

```
func birthday() -> String {  
  
}  
  
func payment() -> Double {  
  
}
```

Others

1.

Please describe how to establish a github repo and how to upload the local projects to github. Try to explain it as detail as possible.