IV / Loops

_____
_____

For loops

=> loop over arrays and ranges , pull out one item and assign to a constant

Exemple : Range

let count = 1...10

for number **in** count {
    print("Number is \(number)")
}
_____

Exemple : Array

let albums = ["Red", "1989", "Reputation"]

for album **in** albums {
    print("\(album) is on Apple Music")
}

let names = ["Sterling", "Cyril", "Lana", "Ray", "Pam"]

for name **in** names {
    print("\(name) is a secret agent")
}
_____

Exemple : Without assigned constant

print("Players gonna ")

for _ **in** 1...5 {
    print("play")

}

Total score: 12/12 checked

_____
_____

While loops

=> give it a condition to check, it will go around and around until the condition fails

Exemple :

var number = 1

while number <= 20 {
    print(number)
    number += 1
}

print("Ready or not, here I come!")

Allows looping until we tell them to stop ,repeat the same code until :

- …the user asks us to stop
- …a server tell us to stop
- …we've found the answer we're looking for
- …we've generated enough data

Total score: 12/12 checked

_____
_____

Repeat loops

=> the condition to check comes at the end

Exemple 1:

var number = 1

```
repeat {
    print(number)
    number += 1
} while number <= 20

print("Ready or not, here I come!")
```
_____

Exemple 2:

```
let numbers = [1, 2, 3, 4, 5]
var random: [Int]

repeat {
    random = numbers.shuffled()
} while random == numbers
```

=> return [5, 3, 1, 2, 4]

NB: The code inside the loop will always be executed at least once

_____

Exemple 3 :

```
var scales = ["A", "B", "C", "D", "E"]
var scaleCounter = 0
repeat {
    print("Play the \(scales[scaleCounter]) scale")
    scaleCounter += 1
} while scaleCounter < 3
```

Exemple 4 :

```
var hoursStudied = 0
var goal = 10
repeat {
    hoursStudied += 1
    if hoursStudied > 4 {
        goal -= 1
        continue
    }
    print("I've studied for \(hoursStudied) hours")
```

```
} while hoursStudied < goal
```

Total score: 12/12 checked

_____
_____

Exiting loops

=> exit a loop at any time using the break keyword

Exemple :

```
while countDown >= 0 {
    print(countDown)

    if countDown == 4 {
        print("I'm bored. Let's go now!")
        break
    }

    countDown -= 1
}
```

Total score: 12/12 checked

_____
_____

Skipping items

=> to skip the current item and continue on to the next one use continue

Exemple :

```
for i in 1...10 {
    if i % 2 == 1 {
        continue
    }

    print(i)
}
```

———
———————————————————————-

Exiting multiple loops

=> loop inside a loop it's called a *nested* **loop**
=> to exit both loops at the same time => outerLoop: label + **break** outerLoop

Exemple:

```
outerLoop: for i in 1...10 {
    for j in 1...10 {
        let product = i * j
        print ("\(i) * \(j) is \(product)")

        if product == 50 {
            print("It's a bullseye!")
            break outerLoop
        }
    }
}
```

———————————————————

=> how to find the right digit code :

Exemple:


```
let options = [1, 2, 3, 4,5,6,7,8,9]

let secretCombination = [9, 5, 2]

outerLoop: for option1 in options {
    for option2 in options {
        for option3 in options {
            print("In loop")
            let attempt = [option1, option2, option3]

            if attempt == secretCombination {
                print("The combination is \(attempt)!")
                break outerLoop
```

```
        }
      }
    }
}
```

Total score: 6/6 checked

_____
_____

Infinite loops

=> use true as your condition with a condition that exits the loop

Exemple 1 :

var counter = 0

while true {
    print(" ")
    counter += 1

    if counter == 273 {
        break
    }
}
_____

Exemple 2 :

var isAlive = false

while isAlive == true {
    print("I'm alive!")
}

print("I've snuffed it!")

Total score: 12/12 checked