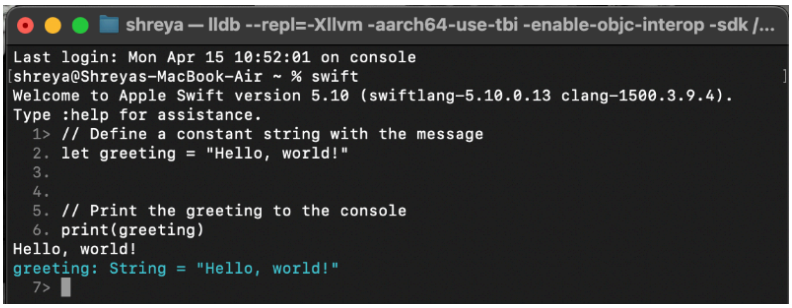
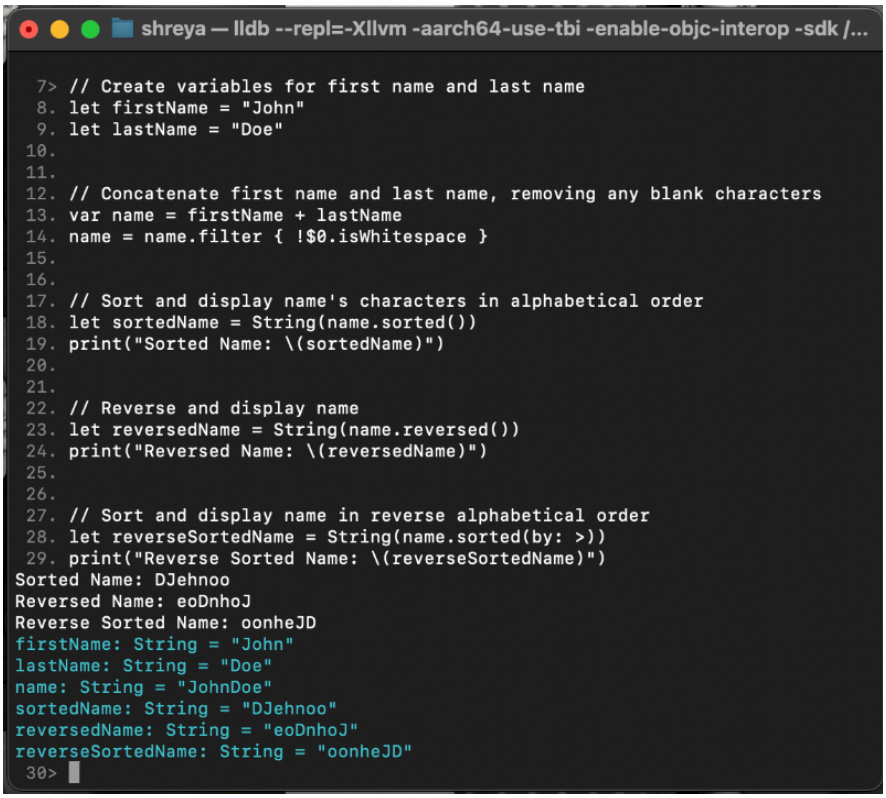
SWIFT Code - Shreya & Christina

Step 1 – Install Swift to run a local interactive REPL shell or use an online REPL as discussed in class and perform a "Hello World!" program.



Step 2 – Install Swift to run a local interactive REPL shell or use an online REPL as discussed in class and perform the following

- Create a string assigned to the variable FirstName
- Create a string assigned to the variable LastName
- Create a string assigned to the variable Name that concatenates FirstName and LastName, removing any blank characters
- Sort and display Name's characters in alphabetical order
- Reverse and display Name o Sort and display Name in reverse alphabetical order
- Include comment lines in your REPL for citations of helpful or copied sources
- Capture all the REPL output into a Step1.txt file

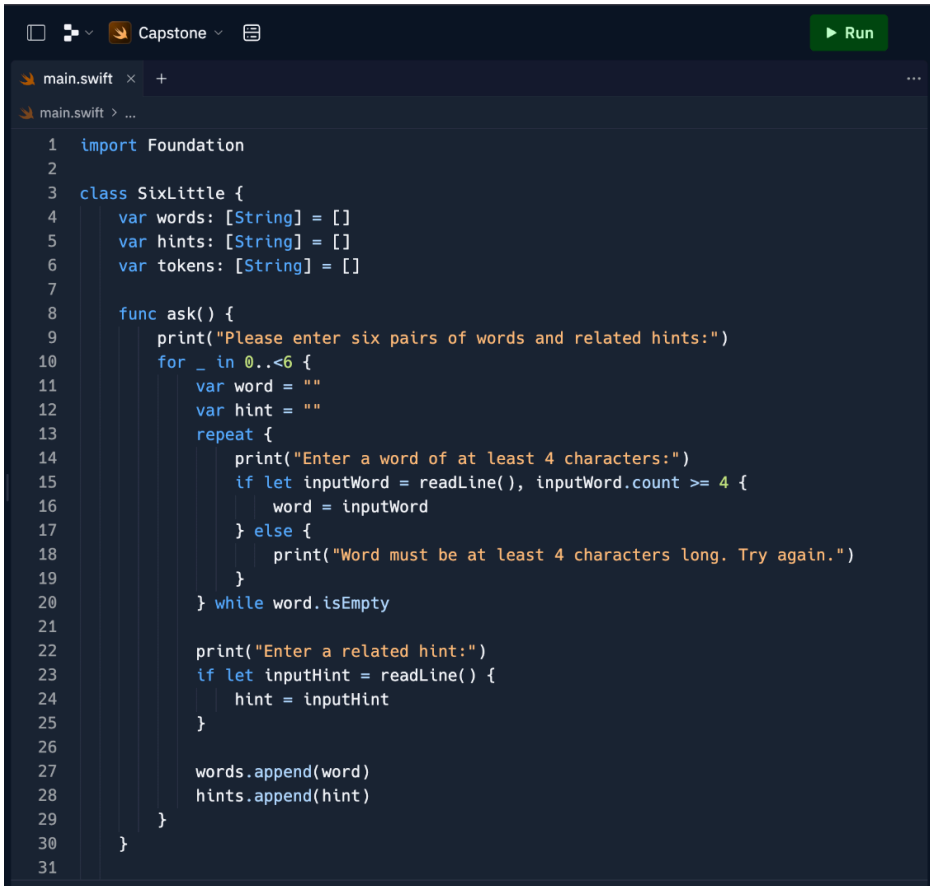


Step 3 – Write a Swift program that prints out a Six Little Words puzzle.
Create a standalone Swift program that will successfully run if called using swift. The code should instantiate an object from a class called SixLittle and call that object's Run method.
Create a SixLittle class in Swift that has the following four methods:
Ask – asks for six pairs of string inputs – a word of at least 4 characters length (should re-ask if too short) followed by a related hint string (of any length) – this pair of words should be kept in collection attributes (words, hints) inside the SixLittle class.
Prepare – The prepare method will break each word in the words collection in half (be consistent about what to do for an odd number of letters), the broken parts of the words will be capitalized and then added to a collection called tokens. Finally, the tokens collection should be randomly shuffled so that the tokens are not in the order they were originally placed.
Display – displays the title "Six Little Words (Swift)", displays a neat table titled "Tokens" of the tokens – 4 words across in 3 rows, displays the hints in a list titled "HINTS", and then display another list labeled "ANSWER KEY" and list the original words on two lines, separating each section with a blank line.
Run – should clear all collections, call Ask, Prepare, and Display in turn.
Typical output when program is run and six words/hints have been entered by the user:

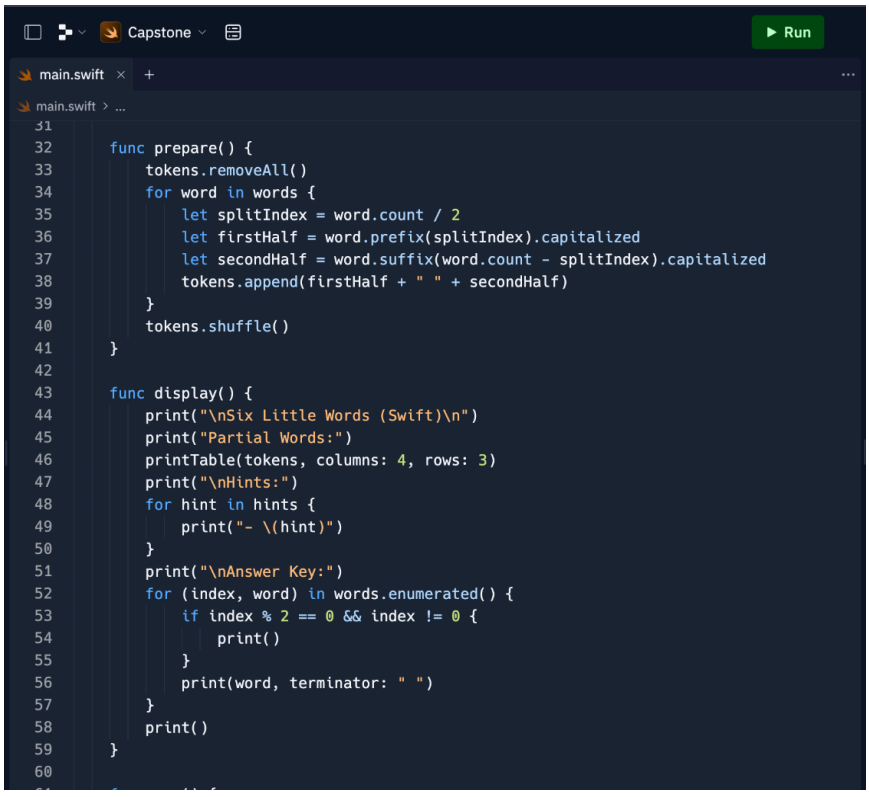
Six Little Words (Swift)
Partial Words:
LA ACH KE
AKE CH BE
AIR DO IR
FA SN OR

Hints:
Open me
I slither
A carnival
Sit on this
Fresh water body
Sand and sun

Answer Key:
DOOR SNAKE FAIR
CHAIR LAKE BEACH




```swift
import Foundation

class SixLittle {
    var words: [String] = []
    var hints: [String] = []
    var tokens: [String] = []

    func ask() {
        print("Please enter six pairs of words and related hints:")
        for _ in 0..<6 {
            var word = ""
            var hint = ""
            repeat {
                print("Enter a word of at least 4 characters:")
                if let inputWord = readLine(), inputWord.count >= 4 {
                    word = inputWord
                } else {
                    print("Word must be at least 4 characters long. Try again.")
                }
            } while word.isEmpty

            print("Enter a related hint:")
            if let inputHint = readLine() {
                hint = inputHint
            }

            words.append(word)
            hints.append(hint)
        }
    }

```




```swift
    func prepare() {
        tokens.removeAll()
        for word in words {
            let splitIndex = word.count / 2
            let firstHalf = word.prefix(splitIndex).capitalized
            let secondHalf = word.suffix(word.count - splitIndex).capitalized
            tokens.append(firstHalf + " " + secondHalf)
        }
        tokens.shuffle()
    }

    func display() {
        print("\nSix Little Words (Swift)\n")
        print("Partial Words:")
        printTable(tokens, columns: 4, rows: 3)
        print("\nHints:")
        for hint in hints {
            print("- \(hint)")
        }
        print("\nAnswer Key:")
        for (index, word) in words.enumerated() {
            if index % 2 == 0 && index != 0 {
                print()
            }
            print(word, terminator: " ")
        }
        print()
    }
```

Capstone

Run

main.swift

```swift
    func run() {
        ask()
        prepare()
        display()
    }
}

func printTable(_ array: [String], columns: Int, rows: Int) {
    let chunkedArray = array.chunked(into: columns)
    for chunk in chunkedArray {
        for item in chunk {
            print(item, terminator: " ")
        }
        print()
    }
}

extension Array {
    func chunked(into size: Int) -> [[Element]] {
        return stride(from: 0, to: count, by: size).map {
            Array(self[$0 ..< Swift.min($0 + size, count)])
        }
    }
}

// Instantiate SixLittle object and run the program
let game = SixLittle()
game.run()

```

AI & Search

Console Shell

Run

```
Enter a related hint:
Open me
Enter a word of at least 4 characters:
SNAKE
Enter a related hint:
I slither
Enter a word of at least 4 characters:
FAIR
Enter a related hint:
A carnival
Enter a word of at least 4 characters:
CHAIR
Enter a related hint:
Sit on this
Enter a word of at least 4 characters:
LAKE
Enter a related hint:
Fresh Water Body
Enter a word of at least 4 characters:
BEACH
Enter a related hint:
Sand and sun
```

```
Six Little Words (Swift)

Partial Words:
Be Ach La Ke Do Or Sn Ake
Ch Air Fa Ir

Hints:
- Open me
- I slither
- A carnival
- Sit on this
- Fresh Water Body
- Sand and sun

Answer Key:
DOOR SNAKE
FAIR CHAIR
LAKE BEACH
```