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Coding Challenge 1 Algorithms (60 minutes per day)

Question 1: Return first duplicate (COMPLETE/INCOMPLETE)

Create a function that accepts an array of integers and returns the first duplicate value.

     let duplicatearray = [2,1,3,5,4,1,4,3,2,4,5,3]

func firstDuplicatedElement(in array: [Int]) -> Int? { //returns first duplicated integer in array

let noOfObjects: Int = array.count - 1 // in natural numbers, subtract to work with computer. Index ranges from 0-5, not 1-6

var initalValue = 0;

var retrievedDuplicate: Int? = nil;

while (initalValue < noOfObjects) { //inital value cannot exceed array range or crash will occur!

for i in 1...noOfObjects {

if (array[initalValue] == array[i]) { // scan from index integer (selected) to end for duplicates, shift up by one when duplicate not found

if (retrievedDuplicate == nil) { //after first duplicate is found, ignore other duplicates

retrievedDuplicate = array[initalValue] }

}

}

initalValue = initalValue + 1

}

return retrievedDuplicate; // returns the duplicate value

}

print(firstDuplicatedElement(in: duplicatearray)!)

// prints 2

Question 2: Is Palindrome? (COMPLETE/INCOMPLETE)

Create a function that checks if a string is a palindrome and returns true or false. A palindrome is a word that reads the same way even if you read it backwards.

let teststring = "abcdcba"; // from 0 to (string.count - 1) (it displays from 1 onward)

func isPalindrome (in string: String) -> Bool { // example is radar

var reversedString: String = "";

let numberofCharacters: Int = string.count - 1;

for i in 0...numberofCharacters { //creates a new string that is the "reversed" version of the input

reversedString.append(string[string.index(string.startIndex, offsetBy: numberofCharacters - i)])

}

return (string == reversedString) // compares the original with the newly formed string

}

print(isPalindrome(in: teststring));

// prints out true

Suggested Time: 3+ days

Challenge 2: iOS (COMPLETE/INCOMPLETE)

Your second challenge is to develop a small app from scratch. Here are the requirements:

• It should show a list of images.

• Tapping on an image should navigate to a new screen that shows the selected picture

Notes:

• If you're a bit rusty on your iOS skills, check out this tutorial.

• A good developer tries to write code that is easy to understand. The industry has a set of best practices that focus on writing easy to maintain code. Here's a set of guidelines on these best practices: Swift Style Guide.