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W31

First of all, according to researches,

"The filter method solves the problem of selecting the elements of an array that pass a certain condition"

**PROGRAM 1**

**PROGRAM 1 EXPLANATION: We filter the numbers aray to meet the condition in the closure. We initialize a variable to 2 for it is known already as prime, then we divide the number by 2 , and if the number modulo to the divided number would return 0, it would return false because it is still divisible by 2, or another number. Otherwise it is prime.**

let numbers = [13,23,15,14,25,16,42,18,50,5,37,10,29,2,3,7]

let prime = numbers.filter

{

(n:Int) -> Bool in

for (var i:Int = 2; i <= n / 2 ; i++) {

if (n%i == 0 ){

return false

}

}

return true

}

print("Program 1 Output: ")

println(prime)

**PROGRAM 2**

PROGRAM 2 EXPLANATION : So first we initialize the array. Then we initialize a variable called

odds and we filter the array with the a closure, for odds we use $0%2==1, $0 is a default parameter name.

And that means modulo 2, with 1 remainder we know that it is odd, for even, modulo 0 means it is even.

Now we sort the numbers using sorted function for the sorted numbers to be in ascending order.

let numbers2 = [12,2,5,10,7,14,3,1,11,8]

let odds = numbers2.filter{$0%2==1}

let evens = numbers2.filter{$0%2==0}

let sortOdd = sorted(odds){$0<$1}

let sortEven = sorted(evens){$0<$1}

print("Program 2 Output: ")

let sortedNumbers = sortOdd + sortEven

println("\(sortedNumbers)")

**PROGRAM 3**

PROGRAM 3 EXPLANATION: We use again the filter function to filter the word arrays.

Then for everycharacter in a word, we put it in a variable, thus giving us another word,

but in the return statement, we see if the reversed word would match the word in the

array. If it does, it is definitely a palindrome,.

let words = ["nasabayabasan", "juan carlo", "ransom binsar", "abcdcbba" ,"racecar"]

let palindrome = words.filter{

(n:String) -> Bool in

var reverse = ""

for character in n{

var char = "\(character)"

reverse = char + reverse

}

return(n == reverse)

}

print("Program 3 Output: ")

println(palindrome)