Assignment3

Ziya YİĞİT

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### Q1 : Write a function that finds a prime number(s) given a set of numbers. Your function also provides prime factors of non-prime numbers. The function you will write should return the prime number(s) given in this vector and the non-prime number(s) with their prime factors.

prime\_func <- function(x) {  
   
 primes <- c()  
 nonprimes <- c()  
 factors <- c()  
   
 for (i in x) {  
 if (i == 2) { #for "2"   
 primes <- c(primes, i)  
 } else if ( any(i %% 2:(i-1) == 0)) { #i from 2 last number checking if we can divide the number  
 nonprimes <- c(nonprimes, i)   
   
 factors <- c()  
 a = 2  
   
 while(i >= a){ #checking if number is smaller than a, then looking for prime factor  
 if(i %%a==0){ #if i mod a is 0 add it to factors  
 factors<- c(factors,a) #divide i to a and check if there is lower factor(a-1)  
 i <- i/a  
 a <- a-1  
   
 }  
 a <- a+1   
 }  
   
 nonprimes <- c(nonprimes,"[" ,factors, "]")  
   
 } else {   
 primes <- c(primes ,i)  
 }  
 }  
   
   
   
 cat("prime nums : " , primes, "\n")  
 cat("non prime nums : ", nonprimes,"\n")  
}

Lets add test inputs 89, 107, 597, 931, 1083

The output that we are going to get is this:

prime nums : 89 107   
non prime nums : 597 [ 3 199 ] 931 [ 7 7 19 ] 1083 [ 3 19 19 ]

### Q2 : Write a function that finds the letter numbers of all words in a given text and sorts the text according to those numbers from words with few letters to words with many letters. Sort the words containing the same number of letters alphabetically.

### For having text, you may use Sentences in tidyverse. Select 5 or 6 sentences randomly from Sentences.

sentence\_func <- function (x) { #a function that prints lowest string length words in  
 # alphabetical order  
 x<- x %>%   
 str\_split(" ") %>%  
 simplify()  
   
 x<-str\_replace\_all(x,"\\.","") #Deleting all ",.'?"  
 x<-str\_replace\_all(x,"\\,","")  
 x<-str\_replace\_all(x,"\\'","")  
 x<-str\_replace\_all(x,"\\?","")  
 x<-str\_to\_lower(x)  
   
 lengthofwords=c()   
   
 for (i in x){   
 lengthofwords = c(lengthofwords,str\_length(i)) # finding length of all words  
   
 }  
   
 alphabetic\_order<-sort(x) #sort and order  
 final\_order<-alphabetic\_order[order(str\_length(alphabetic\_order))]  
   
 cat(final\_order)  
}

Let’s select 5 or 6 random sentences from tidyverse sentences.

sampfile<- sample(c(sentences),size=sample(5:7))

What we have is this: It was a bad error on the part of the new judge., Port is a strong wine with s smoky taste., Drive the screw straight into the wood., Pure bred poodles have curls., Pile the coal high in the shed corner.

The output is :

a a s in is it of on bad new the the the the the the was bred coal have high into part pile port pure shed wine with wood curls drive error judge screw smoky taste corner strong poodles straight