1. Implement a function halves that takes a list of integers and divides each element of the list in two
2. Implement a function stack that takes the first element of a list and moves it to the back
3. Implement a function that computes the nth Fibonacci number
4. Implement a function factors that takes an Int and returns a list off all its factors (i.e. all the

Int's bigger than 1 and less than that Int that are divisible without a remainder)

1. Implement a function pivot that takes a value and a list, then returns two lists in a tuple, with the-- first list being all elements <= to the value, and the second list being all elements > the value-- I.e. pivot 3 [5,6,4,2,1,3]= ([2,1,3],[5,6,4])
2. Implement the function treeHeight that returns the largest height of a Tree
3. -- E.x.

a

/ \

b c

/ \

d e

has a height of 3 (elements d and e are both at "height" 3 in the tree) NOTE the Empty Tree is of height 0

1. Implement the function merge that takes two lists that (assuming both lists are already sorted) merges them together in to a sorted list
2. Implement the function mergeSort that sorts a list by reclusively splitting a list, and merging the sorted lists back together. NOTE singleton and empty lists are already sorted
3. Implement the function sortProp that tests if a list is sorted or not. NOTE you can use this with QuickCheck to test your mergSort function by calling quickCheck (sortProp . mergeSort)
4. Implement the function lookup that takes a list of tuples, where the first element of the tuple serves as a key and the second element a value (a list like this is also known as a dictionary), and a key value, then looks up the first occurring element corresponding to that key. The return value is wrapped in the Maybe type, so if the key doesn't occur anywhere in the list the function returns Nothing

E.x. lookup 2 [(0,'a'),(1,'b')] == Nothing

lookup 2 [(0,'a'),(2,'b'),(2,'c')] == Just 'b'

1. Write a program that prints the integers from 1 to 100 (inclusive). But: for multiples of three, print NIT (instead of the number) for multiples of five, print Andhra (instead of the number) for multiples of both three and five, print NITAndhra (instead of the number)
2. Rosie has recently learned about ASCII values. She is very fond of experimenting. With his knowledge of ASCII values and characters. She has developed a special word and named it Rosie's Magical word. A word that consists of alphabets whose ASCII value is a prime number is Rosie's Magical word. An alphabet is Rosie's Magical alphabet if its ASCII value is prime. convert The given strings to Rosie's Magical Word.

Rules for converting:

1. Each character should be replaced by The nearest Rosie's Magical alphabet.

2. If the character is equidistant with 2 Magical alphabets. The one with a lower ASCII value will be considered as its replacement.

Input:

AFREEN

Output:

CGSCCO

Explanation

ASCII values of alphabets in AFREEN are 65, 70, 82, 69, 69 and 78 respectively which are converted to CGSCCO with ASCII values 67, 71, 83, 67, 67, 79 respectively. All such ASCII values are prime numbers.

1. n people standing in a circle in order from 1 to n. if n=5 and then No. 1 has a sword. He kills the next person (i.e. No. 2) and gives the sword to the next (i.e. No. 3). All people do the same until only 1 survives. Which number survives at the last? Note: Initially knife will be with the first person (i.e. No. 1)

Input:

100

Output:

73

1. Write a function to rotate a list in Haskell by giving a K value.

Input: [1, 2, 3, 4, 5, 6, 7] K=2

Output:[3, 4, 5, 6, 7, 1, 2]

1. Compute Pascal's triangle up to a given number of rows.In Pascal's Triangle each number is computed by adding the numbers to the right and left of the current position in the previous row.

Input:5

Output:

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

1. Given an array of strings strs, group the anagrams together. You can return the answer in any order. An Anagram is a word or phrase formed by rearranging the letters of a different word or phrase, typically using all the original letters exactly once.

Input: ["eat","tea","tan","ate","nat","bat"]

Output: [["bat"],["nat","tan"],["ate","eat","tea"]]

Given an integer array nums, find the contiguous subarray (containing at least one number) which has the largest sum and return its sum.

1. A subarray is a contiguous part of an array.

Input:[-2,1,-3,4,-1,2,1,-5,4]

Output: 6

Explanation: [4,-1,2,1] has the largest sum = 6.