Assignment 5 - Soumya Gite - SIRSS2276

August 27, 2021

1 ASSIGNMENT 5

2 Soumya Gite

3 SIRSS2276

[2]:
```
# Q1. Given a list of integers, write a function to return the sum of all prime numbers in that list.

def findPrime(list1):
    s = 0
    for num in list1:
        i = 2
        p = 1
        while i <= num / 2:
            if num % i == 0:
                p = 0
                break
            i = i + 1
        if p == 1:
            s = s + num
    return s


list1 = [10, 11, 12, 13, 14, 15]
s = findPrime(list1)
print("Sum of all prime numbers:", s)
```

```
Sum of all prime numbers: 24
```

[6]:
```
# Q2. Given a list of integers, write a function to check whether the list is strictly increasing or not

def almost_increasing_sequence(sequence):
    if len(sequence) < 3:
        return True

    a, b, *sequence = sequence
```

```
    skipped = 0
    for c in sequence:
        if a < b < c:  # XXX
            a, b = b, c
            continue
        elif b < c:    # !XX
            a, b = b, c
        elif a < c:    # X!X
            a, b = a, c
        skipped += 1
        if skipped == 2:
            return False
    return a < b

print(almost_increasing_sequence([]))
print(almost_increasing_sequence([1, 2, 3]))
print(almost_increasing_sequence([1, 2, 0, -1]))
print(almost_increasing_sequence([10, 11, 12, 2, 3, 4, 5]))
```

```
True
True
False
False
```

[12]:
```
# Q3. Write a function to check whether a given list is expanding or not
#(the difference between adjacent elements should keep on increasing).

list_array = list()
def is_expanding(A):
    if all(A[i] <= A[i+1] for i in range (len(A)-1)):
        return "expanding"
    elif all(A[i] >= A[i+1] for i in range (len(A)-1)):
        return "not expanding"
    return "not expanding array"
n = int(input("input size of the array :"))
for i in range(n):
    s=int(input("input value for position {} : ".format(i)))
    list_array.append(s)
print("Input array is "+is_expanding(list_array))
```

```
input size of the array :4
input value for position 0 : 56
input value for position 1 : 24
input value for position 2 : 48
input value for position 3 : 31
Input array is not expanding array
```

[16]:
```
# Q4. Write a function to calculate all permutations of a given string.␣
↪(Without using itertools)

def permute(s, answer):
    if (len(s) == 0):
        print(answer, end = "  ")
        return

    for i in range(len(s)):
        ch = s[i]
        left_substr = s[0:i]
        right_substr = s[i + 1:]
        rest = left_substr + right_substr
        permute(rest, answer + ch)

answer = ""

s = input("Enter the string : ")

print("All possible strings are : ")
permute(s, answer)
```

```
Enter the string : ABC
All possible strings are :
ABC  ACB  BAC  BCA  CAB  CBA
```

[ ]:
```

```