Python programming-CSA0814

DAY 11

(25 aug 24)

**1.FIND THE LENGTH OF LONGEST INCREASING SUBSEQUENCE IN GIVEN ARRAY**

arr = [10, 22, 9, 33, 41, 50, 41, 60]

n = len(arr)

lis = [1] \* n

for i in range(1, n):

for j in range(i):

if arr[i] > arr[j] and lis[i] < lis[j] + 1:

lis[i] = lis[j] + 1

result = max(lis)

print("Length of the longest increasing subsequence is:", result)

OUTPUT:

Length of the longest increasing subsequence is: 5

**2.FIND THE MAJORITY ELEMENT IN ARRAY THAT APPEARS MORE THAN N/2 TIMES**

n=[1,2,4,4,4,3]

a=[]

b=[]

for i in n:

if i not in a:

a.append(i)

else:

b.append(i)

for i in a:

if i in b:

b.append(i)

if len(b)>=len(n)//2:

print(list(set(b)))

else:

print("there is no element found")

**OUTPUT:**

[4]

**3.FINDING MINIMUM NUMBER OF JUMP TO REACH END OF ARRAY**

arr = [1, 3, 5, 8, 9, 2, 0, 7, 6, 8, 9]

n = len(arr)

jumps = farthest = current\_end = 0

for i in range(n - 1):

farthest = max(farthest, i + arr[i])

if i == current\_end:

jumps += 1

current\_end = farthest

if current\_end >= n - 1:

break

print("Minimum number of jumps to reach the end:", jumps)

**OUTPUT**: Minimum number of jumps to reach the end: 3

**4.FIND COMMON ELEMENT IN 3 SORTED ARRAY**

a=[1,4,3,6]

b=[4,3,8,9]

c=[6,0,3,4]

d=sorted(a)

e=sorted(b)

f=sorted(c)

g=set(d).intersection(e,f)

print(list(g))

**OUTPUT:**[3,4]

**5.FIND THE LONGEST COMMON SUB SEQUENCE IN GIVEN ARRAY**

str1 = "ABCBDAB"

str2 = "BDCAB"

n = len(str1)

m = len(str2)

dp = [[0] \* (m + 1) for \_ in range(n + 1)]

for i in range(1, n + 1):

for j in range(1, m + 1):

if str1[i - 1] == str2[j - 1]:

dp[i][j] = dp[i - 1][j - 1] + 1

else:

dp[i][j] = max(dp[i - 1][j], dp[i][j - 1])

lcs\_length = dp[n][m]

print("Length of the Longest Common Subsequence is:", lcs\_length)

**OUTPUT:**

Length of the Longest Common Subsequence is: 4