# CSA0888. - PYTHON PROGRAMMING

**Assignment-4**

**Program 1:**

deffizzBuzz(n): result=[]

for i inrange(1, n+1):

ifi %3 == 0 andi %5 == 0: result.append("FizzBuzz")

elifi %3 == 0: result.append("Fizz")

elifi %5 == 0: result.append("Buzz")

else:

result.append(str(i)) return result

print(fizzBuzz(3)) print(fizzBuzz(5)) print(fizzBuzz(15)) print(fizzBuzz(10)) print(fizzBuzz(20))

# Program 2:

defcountStudentUsers(total\_users, staff\_users): non\_teaching\_staff=staff\_users // 3

student\_users =total\_users- staff\_users- non\_teaching\_staff returnstudent\_users

print(countStudentUsers(856, 126))

print(countStudentUsers(0, 0))

print(countStudentUsers(-143, 0))

print(countStudentUsers(1026, 1026))

print(countStudentUsers(450, 540))

print(countStudentUsers(600, 450))

# Program. 3

defsmallerNumbersThanCurrent(nums): result=[]

for i inrange(len(nums)):

count=sum(1 fornuminnumsifnum<nums[i]) result.append(count)

return result

print(smallerNumbersThanCurrent([8, 1, 2, 2, 3]))

print(smallerNumbersThanCurrent([6, 5, 4, 8]))

print(smallerNumbersThanCurrent([7, 7, 7, 7]))

print(smallerNumbersThanCurrent([1, 2, 3, 5, 5, 6]))

print(smallerNumbersThanCurrent([0, 0, 0, 0]))

# Program.4

defisPalindrome(s):

s=''.join(filter(str.isalnum, s)).lower() returns==s[::-1]

print(isPalindrome("A man, aplan, acanal: Panama")) print(isPalindrome("race acar")) print(isPalindrome(" ")) print(isPalindrome("madam")) print(isPalindrome("honest"))

# Program 5

defminJumps(arr): n=len(arr)

jumps=[float('inf')]\* n

jumps[0] = 0

for i inrange(1, n): for j in range(i): ifj +arr[j] >=i:

jumps[i] =min(jumps[i], jumps[j] + 1) return jumps[-1] ifjumps[-1]!=float('inf')else-1

print(minJumps([1, 3, 5, 8, 9, 2, 6, 7, 6, 8, 9]))

print(minJumps([1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1]))

print(minJumps([2, 3, 1, 1, 4]))

print(minJumps([1, 3, 6, 1, 0, 9]))

print(minJumps([2, 3, 0, 1, 4]))

# Program 6

defdelchar(s, c): returns.replace(c, '')

test\_strings =["Good evening","Takecare","123456s","Red rose","Flower"] char\_to\_remove='e'

fortest\_strintest\_strings:

result=delchar(test\_str, char\_to\_remove) print(f"Stringafter thecharacter is removed: {result}")

# Program 7

def countVowelStrings(n):

return (n+ 1)\*(n+ 2)\*(n+ 3)\*(n+ 4)// 24

print(countVowelStrings(1)) print(countVowelStrings(2)) print(countVowelStrings(33)) print(countVowelStrings(55))

# Program 8

def romanToInt(s):

values={'I': 1,'V': 5,'X': 10,'L': 50,'C': 100,'D': 500, 'M': 1000}

total= 0

prev\_value= 0

for cinreversed(s): value =values[c]

total +=valueifvalue>=prev\_valueelse-value prev\_value=value

returntotal

print(romanToInt("III")) print(romanToInt("LVIII")) print(romanToInt("MCMXCIV")) print(romanToInt("LV")) print(romanToInt("MMl"))

# Program 9

defget\_season(month, day):

if (month=="March" andday>= 20) or (month=="April" or month=="May") or(month=="June" and day<= 20): return "Spring"

elif (month== "June" andday>= 21) or (month== "July" or month=="August") or (month =="September" and day

<= 21):

return "Summer"

elif (month == "September" and day >= 22) or (month == "October" or month == "November") or (month == "December" andday<=21):

return "Fall" else:

return "Winter"

print(get\_season("July", 29))

print(get\_season("September", 5))

print(get\_season("December", 30))

print(get\_season("March", 12))

print(get\_season("June", 27))

# Program. 10

defisScramble(s1, s2): if len(s1)!=len(s2):

return False

if s1 ==s2: return True

if sorted(s1)!=sorted(s2): return False

n=len(s1)

for i inrange(1, n):

if(isScramble(s1[:i], s2[:i])andisScramble(s1[i:], s2[i:])) or \

(isScramble(s1[:i], s2[-i:])andisScramble(s1[i:], s2[:-i])): return True

return False

print(isScramble("great", "rgeat")) print(isScramble("abcde","caebd")) print(isScramble("a", "a"))

print(isScramble("ab","ad"))

print(isScramble("s1=10","s2=-5"))