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#====================================CONFERENCE RESTO PROBLEM==================================================
# A given conference organizer faced with the lunch problem for the participants decide to select a list of 8 menus.
# He also selects 5 restaurants and each of the restaurants will select 4 menus out of the list of 8.
# The conference will host 20 participants and each participants will attend the 5 days of conference and will eat
# at each of the 5 restaurants on each day.
# We'll randomly select the choices of each participants at each restaurant knowing there is only 4 menus for each of
# the restaurants, then we'll create a list of choices and from this list we'll do all the manipulations.
#=============================================================================================================
import random

participants=['Jean','Paul','Pierre','Louis','Carter','Henry','Ludo','Funzo','Jay','nicola','Jules',
          'Marie','Anne','Claire','Chantale','Paule','Victoire','Lorie','Gladys','Anie']
dict1={'resto1':[],'resto2':[],'resto3':[],'resto4':[],'resto5':[]}

list_menu=[]
menu_count=[]
for j in range(1,6): # les 5 resto5
   choice=random.sample(range(1,9),k=4) #choix de 4 nombres parmis [1,2,3,4,5,6,7,8]; choice=['2','5',8,4]
   menus=['menu_' + str(x) for x in choice] #
   #print(choice)

   plats={}
   list_plats_j=[]
   for i in range(20):
      choix=random.choice(menus) #menu=[menu_1,menu_5,menu_8,menu_3]
      list_plats_j.append(choix)
      dict1['resto' + str(j)].append({'name': participants[i], 'plat': choix})
   print(list_plats_j)
   list_menu.append(list_plats_j)

   menu_count_j=[list_plats_j.count(x) for x in ['menu_'+ str(k) for k in range(1,9)]]
   menu_count.append(menu_count_j)
   print(menu_count_j)

print(menu_count)
total_count=[]
for k in range(8):
   total_count.append(menu_count[0][k]+menu_count[1][k]+menu_count[2][k]+
            menu_count[3][k]+menu_count[4][k])
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print(total_count)

top_choice=total_count.index(max(total_count))
print("Popular Menu Consumed :",max(total_count),"times and is Menu_",top_choice+1 )
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