21BDS0340
Abhinav Dinesh Srivatsa
BCSE101E, VL2021220107100 – TC2 (Theory)
BCSE101E, VL2021220107101 – L15+L16+L29+L30 (Lab)

Question 1

PAC:

Data	Processing	Output	Alternative Solutions
Teachers = input Students = input	Sep = ceiling round of Students / Teachers Assign = List of Teacher - Student pairs	Assign	Input can be entered separately instead of in one line

Algorithm:

Read N
Read M
Calculate Sep as ceiling round of length M / length N
Initialise Assign as list
Loop while length of N is not 0
    Append the first teacher from N to Assign
    Delete first teacher from N
    If length of N is not 0, then
        Append the 1st to 1 + Sep students of M to Assign
    Else, append the 1st till last students of M to Assign
    Delete the 1st to 1 + Sep students from M
    Display Assign
    Initialise Assign as empty list

Code:

```
n = input().split(',')
m = input().split(',')
length = len(m)

while length % len(n) != 0:
    length += 1

sep = int(length/len(n))
assign = []

while len(n) != 0:
    assign.append(n[0])
```

```
    del n[0]
    if len(n) != 0:
        for i in m[0 : sep]:
            assign.append(i)
    else:
        for i in m[0 :]:
            assign.append(i)
    del m[0 : sep]
    print(assign)
    assign = []
```

Output:

```
['14713', '18BDS2001', '18BDS2002', '18BDS2003']
['14714', '18BDS2004', '18BDS2005', '18BDS2006']
['14715', '18BDS2007']
```

Question 2

PAC:

Data	Processing	Output	Alternative Solutions
N = input M = input Teacher_Id = input Teacher_Name = input Teacher_Phone = input Student_Id = input Student_Name = input Student_Phone = input	Sep = ceiling round of Students / Teachers Assign = List of Teacher - Student pairs	Teacher tuple Assign	Input can be entered in one line

Algorithm:

Read N
Read M
Initialise Teachers as list
Initialise Students as list

Loop from 0 to N
    Read Id, Name and Phone
    Append the above to a tuple and display
    Append also to a list and append this list to Teachers

Loop from 0 to M
    Read Id, Name and Phone
    Append the above data to a list and append this list to Students

Calculate Sep as ceiling round of length M / length N
Initialise Assign as dictionary
Loop for I in Teachers
    Initialise Assign of Ith Teacher id as list
    If I is not the last teacher, then
        Append Students id's 1 to 1 + Sep as a list to the dictionary of the newly created list in Assign
    Else, Append the rest of the Students id's as a list to the dictionary of the newly created list in Assign
    Delete Students 1 to 1 + Sep
    Display Assign
    Initialise Assign as an empty list

Code:

```
n = int(input())
teachers = []
```

```
for i in range(n):
    id  = input().upper()
    name = input()
    phnum = input()
    teacher = ((id, name, phnum))
    print(teacher)
    teacher = [id, name, phnum]
    teachers.append(teacher)

m = int(input())
students = []

for i in range(m):
    id  = input().upper()
    name = input()
    phnum = input()
    student = [id, name, phnum]
    students.append(student)

length = m
while length % n != 0:
    length += 1
sep = int(length/n)

assign = {}
for i in teachers:
    assign[i[0]] = []
    if i != teachers[len(teachers) - 1]:
        for j in students[0 : sep]:
            assign[i[0]].append(j[0])
    else:
        for j in students[0 :]:
            assign[i[0]].append(j[0])
    del students[0 : sep]
    print(assign)
    assign = {}
```

Output:

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```
2
14713
FacA
9000011111
('14713', 'FacA', '9000011111')
14714
FacB
9111122222
('14714', 'FacB', '9111122222')
3
18bce1001
StudA
9222233333
18bce1002
StudB
9222233334
18bce1003
StudC
9222233335
{'14713': ['18BCE1001', '18BCE1002']}
{'14714': ['18BCE1003']}
```