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1 Lab Assignment:

Take/Prepare any text files for any real life application. For Ex. “Stud.txt”, “Placement.csv” and “Result.csv” files for result Analysis. Combine into “StudentDetails.csv”. Perform all statistical analysis (Average, Max, Min, Count, Sum, Percentage) on it

2 1. Read Student Info File

[2]:
```
# Read File
file=open('stud_info.csv','r')
info_dataset=[]
while True:
    data=file.readline()
    if data:
        info_dataset.append(data.replace("\n",  "").split(','))
    else:
        break
print(info_dataset)
```

```
[['Roll No', 'name', 'Gender', 'DOB'], ['1', 'John', 'Male', '05-04-1988'],
['2', 'Mayur', 'Male', '04-05-1987'], ['3', 'Mangesh', 'Male', '25-05-1989'],
['4', 'Jessica', 'Female', '12-08-1990'], ['5', 'Jennifer', 'Female',
'02-09-1989'], ['6', 'Ramesh', 'Male', '03-09-1989'], ['7', 'Suresh', 'Male',
'04-09-1990'], ['8', 'Ganesh', 'Male', '05-10-1989'], ['9', 'Komal', 'Female',
'06-09-1989'], ['10', 'Mayuri', 'Female', '07-02-1988']]
```

[3]:
```
RollNo=[]
Name=[]
Gender=[]
DOB=[]
```

[4]:
```
for row in info_dataset[1:]:
    RollNo.append(row[0])
    Name.append(row[1])
    Gender.append(row[2])
    DOB.append(row[3])
```

[5]:
```
print(RollNo)
print(Name)
print(Gender)
print(DOB)
```

```
['1', '2', '3', '4', '5', '6', '7', '8', '9', '10']
['John', 'Mayur', 'Mangesh', 'Jessica', 'Jennifer', 'Ramesh', 'Suresh',
'Ganesh', 'Komal', 'Mayuri']
['Male', 'Male', 'Male', 'Female', 'Female', 'Male', 'Male', 'Male', 'Female',
'Female']
['05-04-1988', '04-05-1987', '25-05-1989', '12-08-1990', '02-09-1989',
'03-09-1989', '04-09-1990', '05-10-1989', '06-09-1989', '07-02-1988']
```

3 2. Read Student Marks

[6]:
```
# Read Student Marks
file=open('student_marks.csv','r')
marks_dataset=[]
while True:
    data=file.readline()
    if data:
        marks_dataset.append(data.replace("\n", "").split(','))
    else:
        break
print(marks_dataset)
```

```
[['Roll', 'Maths', 'Physics', 'Chemistry', 'Total', 'Percentage'], ['1', '55',
'45', '56', '156', '52.00'], ['2', '75', '55', '55', '185', '61.67'], ['3',
'25', '54', '89', '168', '56.00'], ['4', '78', '55', '86', '219', '73.00'],
['5', '58', '96', '78', '232', '77.33'], ['6', '88', '78', '58', '224',
'74.67'], ['7', '56', '89', '69', '214', '71.33'], ['8', '54', '55', '88',
'197', '65.67'], ['9', '46', '66', '65', '177', '59.00'], ['10', '89', '87',
'54', '230', '76.67']]
```

[7]:
```
Maths=[]
Physics=[]
Chemistry=[]
Total=[]
Percentage=[]
```

[8]:
```
for row in marks_dataset[1:]:
    Maths.append(row[1])
    Physics.append(row[2])
    Chemistry.append(row[3])
    Total.append(row[4])
    Percentage.append(row[5])
```

[9]:
```
print(Maths)
print(Physics)
print(Chemistry)
print(Total)
print(Percentage)
```

```
['55', '75', '25', '78', '58', '88', '56', '54', '46', '89']
['45', '55', '54', '55', '96', '78', '89', '55', '66', '87']
['56', '55', '89', '86', '78', '58', '69', '88', '65', '54']
['156', '185', '168', '219', '232', '224', '214', '197', '177', '230']
['52.00', '61.67', '56.00', '73.00', '77.33', '74.67', '71.33', '65.67',
'59.00', '76.67']
```

4 3. Read Student Placement File

[10]:
```
# Read Student Marks
file=open('stud_placement.csv','r')
placement_dataset=[]
while True:
    data=file.readline()
    if data:
        placement_dataset.append(data.replace("\n", "").split(','))
    else:
        break
print(placement_dataset)
```

```
[['Roll No', 'Company', 'JobRole', 'Package'], ['1', 'Infosys', 'Data Analyst',
'10.2'], ['2', 'TCS', 'Java Developer', '9.6'], ['3', 'TCS', 'Data Scientist',
'12.60'], ['4', 'Infosys', 'Data Analyst', '10.2'], ['5', 'Oracle', 'Java
Developer', '9.6'], ['6', 'Oracle', 'Data Scientist', '12.60'], ['7', 'TCS',
'Tester', '6.50'], ['8', 'Infosys', 'Tester', '6.51'], ['9', 'Mindtree',
'Database Admin', '8.30'], ['10', 'Mindtree', 'Database Admin', '8.31']]
```

[11]:
```
Company=[]
JobRole=[]
Package=[]
```

[12]:
```
for row in placement_dataset[1:]:
    Company.append(row[1])
    JobRole.append(row[2])
    Package.append(row[3])
```

[13]:
```
print(Company)
print(JobRole)
print(Package)
```

['Infosys', 'TCS', 'TCS', 'Infosys', 'Oracle', 'Oracle', 'TCS', 'Infosys',

```
'Mindtree', 'Mindtree']
['Data Analyst', 'Java Developer', 'Data Scientist', 'Data Analyst', 'Java
Developer', 'Data Scientist', 'Tester', 'Tester', 'Database Admin', 'Database
Admin']
['10.2', '9.6', '12.60', '10.2', '9.6', '12.60', '6.50', '6.51', '8.30', '8.31']
```

[14]:
```
studentdata=[]
studentdata.append(RollNo)
studentdata.append(Name)
studentdata.append(Gender)
studentdata.append(DOB)
studentdata.append(Maths)
studentdata.append(Physics)
studentdata.append(Chemistry)
studentdata.append(Total)
studentdata.append(Percentage)
studentdata.append(Company)
studentdata.append(JobRole)
studentdata.append(Package)
```

[15]:
```
studentdata
```

[15]:
```
[['1', '2', '3', '4', '5', '6', '7', '8', '9', '10'],
 ['John',
  'Mayur',
  'Mangesh',
  'Jessica',
  'Jennifer',
  'Ramesh',
  'Suresh',
  'Ganesh',
  'Komal',
  'Mayuri'],
 ['Male',
  'Male',
  'Male',
  'Female',
  'Female',
  'Male',
  'Male',
  'Male',
  'Female',
  'Female'],
 ['05-04-1988',
  '04-05-1987',
  '25-05-1989',
  '12-08-1990',
```

```
 '02-09-1989',
 '03-09-1989',
 '04-09-1990',
 '05-10-1989',
 '06-09-1989',
 '07-02-1988'],
['55', '75', '25', '78', '58', '88', '56', '54', '46', '89'],
['45', '55', '54', '55', '96', '78', '89', '55', '66', '87'],
['56', '55', '89', '86', '78', '58', '69', '88', '65', '54'],
['156', '185', '168', '219', '232', '224', '214', '197', '177', '230'],
['52.00',
 '61.67',
 '56.00',
 '73.00',
 '77.33',
 '74.67',
 '71.33',
 '65.67',
 '59.00',
 '76.67'],
['Infosys',
 'TCS',
 'TCS',
 'Infosys',
 'Oracle',
 'Oracle',
 'TCS',
 'Infosys',
'Mindtree',
'Mindtree'],
['Data Analyst',
'Java Developer',
'Data Scientist',
'Data Analyst',
'Java Developer',
'Data Scientist',
'Tester',
 'Tester',
'Database Admin',
'Database Admin'],
['10.2',
 '9.6',
 '12.60',
 '10.2',
 '9.6',
 '12.60',
 '6.50',
```

```
'6.51',
'8.30',
'8.31']]
```

5 4. Writing Data to New File

[16]:
```
fw=open("StudentDetails.csv","w")
```

[18]:
```
data_to_write=[]
for i in range(len(studentdata[0])):# 10 rows
    row=list()
    for j in range(len(studentdata)):#12 col
        data=studentdata[j][i]
        row.append(data)
    row.append('\n')
    data_to_write.append(",".join(row))
```

[20]:
```
data_to_write
```

[20]:
```
['1,John,Male,05-04-1988,55,45,56,156,52.00,Infosys,Data Analyst,10.2,\n',
 '2,Mayur,Male,04-05-1987,75,55,55,185,61.67,TCS,Java Developer,9.6,\n',
 '3,Mangesh,Male,25-05-1989,25,54,89,168,56.00,TCS,Data  Scientist,12.60,\n',
 '4,Jessica,Female,12-08-1990,78,55,86,219,73.00,Infosys,Data Analyst,10.2,\n',
 '5,Jennifer,Female,02-09-1989,58,96,78,232,77.33,Oracle,Java Developer,9.6,\n',
 '6,Ramesh,Male,03-09-1989,88,78,58,224,74.67,Oracle,Data Scientist,12.60,\n',
 '7,Suresh,Male,04-09-1990,56,89,69,214,71.33,TCS,Tester,6.50,\n',
 '8,Ganesh,Male,05-10-1989,54,55,88,197,65.67,Infosys,Tester,6.51,\n',
'9,Komal,Female,06-09-1989,46,66,65,177,59.00,Mindtree,Database Admin,8.30,\n',
'10,Mayuri,Female,07-02-1988,89,87,54,230,76.67,Mindtree,Database
Admin,8.31,\n']
```

[21]:
```
fw.writelines(data_to_write)
```

[22]:
```
fw.close()
```

6 5. Statistical Operation

[24]:
```
# 1. Sum of Marks
# 2. Average Marks
print("Math Marks=",Maths)
print("Phyics Marks=",Physics)
print("Chemistry Marks=",Chemistry)
math=[int(i) for i in Maths]
physics=[int(i) for i in Physics]
chemistry=[int(i) for i in Chemistry]
```

```
sum_of_marks=[]
avg=[]
for i in range(len(math)):
    sum_of_marks.append(math[i]+physics[i]+chemistry[i])
    avg.append(round(sum_of_marks[i],2))
print("Sum of Marks=",sum_of_marks)
print("Average Marks=",avg)
```

```
Math Marks= ['55', '75', '25', '78', '58', '88', '56', '54', '46', '89']
Phyics Marks= ['45', '55', '54', '55', '96', '78', '89', '55', '66', '87']
Chemistry Marks= ['56', '55', '89', '86', '78', '58', '69', '88', '65', '54']
Sum of Marks= [156, 185, 168, 219, 232, 224, 214, 197, 177, 230]
Average Marks= [156, 185, 168, 219, 232, 224, 214, 197, 177, 230]
```

[25]:
```
# 3. Max Marks
print("Maximum Marks=",max(avg))
```

```
Maximum Marks= 232
```

[26]:
```
# 4. Min Marks
# Max Marks
print("Maximum Marks=",min(avg))
```

```
Maximum Marks= 156
```

[27]:
```
# 5. Count total no of student
print("Total No of Student=",len(studentdata[0]))
```

```
Total No of Student= 10
```

[28]:
```
#6. Percentage
#assume math marks=90, physic=90, chem=90
per=[]
for i in range(len(sum_of_marks)):
    per.append(round((100*sum_of_marks[i]/270),2))
print("Percentage=",per)
```

```
Percentage= [57.78, 68.52, 62.22, 81.11, 85.93, 82.96, 79.26, 72.96, 65.56,
85.19]
```

[ ]:
```

```