May 8, 2023

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

```python
[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']]
```

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

```python
[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]:
```python
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]:
```python
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

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

```python
[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))
```

```python
[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']
```

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

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

6 5. Statistical Operation

```python
[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]
```

[ ]: