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

1. Read Student Info File

In [2]:
```
# Read File
file=open('student_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'], ['101', 'Rahul', 'Male', '08-04-1991'], ['102',
'Aditya', 'Male', '12-03-1990'], ['103', 'Omkar', 'Male', '03-09-1990'], ['104', 'Abhije
et', 'Male', '12-11-1989'], ['105', 'Pooja', 'Female', '07-02-1990'], ['106', 'Shruti',
'Female', '08-06-1991'], ['107', 'Nikita', 'Female', '21-07-1992'], ['108', 'Ganesh', 'M
ale', '04-09-1990'], ['109', 'Mayuri', 'Female', '14-05-1988'], ['110', 'Shrikant', 'Mal
e', '07-02-1990']]
```

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

In [5]:
```
for row in info_dataset[1:]:
    RollNo.append(row[0])
    Name.append(row[1])
    Gender.append(row[2])
    DOB.append(row[3])
```

In [6]:
```
print(RollNo)
print(Name)
print(Gender)
print(DOB)
```

```
['101', '102', '103', '104', '105', '106', '107', '108', '109', '110']
['Rahul', 'Aditya', 'Omkar', 'Abhijeet', 'Pooja', 'Shruti', 'Nikita', 'Ganesh', 'Mayur
i', 'Shrikant']
```

```
['Male', 'Male', 'Male', 'Male', 'Female', 'Female', 'Female', 'Male', 'Female', 'Male']
['08-04-1991', '12-03-1990', '03-09-1990', '12-11-1989', '07-02-1990', '08-06-1991', '21
-07-1992', '04-09-1990', '14-05-1988', '07-02-1990']
```

2. Read Student Marks

In [7]:
```
# 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 No.', 'Maths', 'Physics', 'Chemistry', 'English', 'Total', 'Percentage'], ['10
1', '56', '89', '74', '80', '299', '74.75'], ['102', '60', '75', '86', '79', '300', '7
5'], ['103', '56', '75', '72', '64', '267', '66.75'], ['104', '78', '90', '56', '66', '2
90', '96.67'], ['105', '64', '74', '60', '75', '273', '68.25'], ['106', '69', '85', '5
9', '59', '272', '68'], ['107', '70', '82', '74', '66', '292', '73'], ['108', '75', '8
1', '81', '83', '320', '80'], ['109', '89', '76', '77', '89', '331', '82.75'], ['110',
'88', '73', '78', '90', '329', '82.25']]
```

In [9]:
```
Maths=[]
Physics=[]
Chemistry=[]
English=[]
Total=[]
Percentage=[]
```


In [10]:
```
for row in marks_dataset[1:]:
    Maths.append(row[1])
    Physics.append(row[2])
    Chemistry.append(row[3])
    English.append(row[3])
    Total.append(row[4])
    Percentage.append(row[5])
```

In [11]:
```
print(Maths)
print(Physics)
print(Chemistry)
print(English)
print(Total)
print(Percentage)
```

```
['56', '60', '56', '78', '64', '69', '70', '75', '89', '88']
['89', '75', '75', '90', '74', '85', '82', '81', '76', '73']
['74', '86', '72', '56', '60', '59', '74', '81', '77', '78']
['74', '86', '72', '56', '60', '59', '74', '81', '77', '78']
['80', '79', '64', '66', '75', '59', '66', '83', '89', '90']
['299', '300', '267', '290', '273', '272', '292', '320', '331', '329']
```

3. Read Student Placement File

In [13]:
```
# Read Student Marks
file=open('student_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 in LPA'], ['101', 'Oracle', 'Java develope
r', '8.9'], ['102', 'Deloitte', 'Graduate Software Engineer', '7.6'], ['103', 'Accentur
e', 'Engineer Trainee', '4.25'], ['104', 'Cognizant', 'Engineer Trainee', '4'], ['105',
'TCS', 'Software Developer', '8'], ['106', 'Siemens', 'Cloud Engineer', '5'], ['107', 'K
PMG', 'Dev ops Engineer', '10'], ['108', 'Infosys', 'Data Analyst', '9.5'], ['109', 'IB
M', 'Machine learning Engineer', '12.5'], ['110', 'Wipro', 'Data Analyst', '4.5']]
```

In [14]:
```
Company=[]
JobRole=[]
Package=[]
```

In [15]:
```
for row in placement_dataset[1:]:
    Company.append(row[1])
    JobRole.append(row[2])
    Package.append(row[3])
```

In [16]:
```
print(Company)
print(JobRole)
print(Package)
```

```
['Oracle', 'Deloitte', 'Accenture', 'Cognizant', 'TCS', 'Siemens', 'KPMG', 'Infosys', 'I
BM', 'Wipro']
['Java developer', 'Graduate Software Engineer', 'Engineer Trainee', 'Engineer Trainee',
'Software Developer', 'Cloud Engineer', 'Dev ops Engineer', 'Data Analyst', 'Machine lea
rning Engineer', 'Data Analyst']
['8.9', '7.6', '4.25', '4', '8', '5', '10', '9.5', '12.5', '4.5']
```

In [17]:
```
studentdata=[]
studentdata.append(RollNo)
studentdata.append(Name)
studentdata.append(Gender)
studentdata.append(DOB)
studentdata.append(Maths)
studentdata.append(Physics)
studentdata.append(Chemistry)
studentdata.append(English)
studentdata.append(Total)
studentdata.append(Percentage)
studentdata.append(Company)
studentdata.append(JobRole)
studentdata.append(Package)
```

In [18]:
```
studentdata
```

Out[18]:
```
[['101', '102', '103', '104', '105', '106', '107', '108', '109', '110'],
 ['Rahul',
  'Aditya',
  'Omkar',
  'Abhijeet',
  'Pooja',
  'Shruti',
  'Nikita',
  'Ganesh',
  'Mayuri',
  'Shrikant'],
 ['Male',
  'Male',
  'Male',
  'Male',
  'Female',
  'Female',
  'Female',
  'Male',
  'Female',
  'Male'],
 ['08-04-1991',
  '12-03-1990',
  '03-09-1990',
  '12-11-1989',
  '07-02-1990',
  '08-06-1991',
  '21-07-1992',
  '04-09-1990',
  '14-05-1988',
  '07-02-1990'],
 ['56', '60', '56', '78', '64', '69', '70', '75', '89', '88'],
 ['89', '75', '75', '90', '74', '85', '82', '81', '76', '73'],
 ['74', '86', '72', '56', '60', '59', '74', '81', '77', '78'],
 ['74', '86', '72', '56', '60', '59', '74', '81', '77', '78'],
 ['80', '79', '64', '66', '75', '59', '66', '83', '89', '90'],
 ['299', '300', '267', '290', '273', '272', '292', '320', '331', '329'],
 ['Oracle',
  'Deloitte',
  'Accenture',
  'Cognizant',
  'TCS',
  'Siemens',
  'KPMG',
  'Infosys',
  'IBM',
  'Wipro'],
 ['Java developer',
  'Graduate Software Engineer',
  'Engineer Trainee',
  'Engineer Trainee',
  'Software Developer',
  'Cloud Engineer',
  'Dev ops Engineer',
  'Data Analyst',
  'Machine learning Engineer',
```

```
 'Data Analyst'],
['8.9', '7.6', '4.25', '4', '8', '5', '10', '9.5', '12.5', '4.5']]
```

4. Writing Data to New File

In [19]:
```
fw=open("StudentDetails.csv","w")
```

In [20]:
```
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))
```

In [21]:
```
data_to_write
```

Out[21]:
```
['101,Rahul,Male,08-04-1991,56,89,74,74,80,299,Oracle,Java developer,8.9,\n',
 '102,Aditya,Male,12-03-1990,60,75,86,86,79,300,Deloitte,Graduate Software Engineer,7.
6,\n',
 '103,Omkar,Male,03-09-1990,56,75,72,72,64,267,Accenture,Engineer Trainee,4.25,\n',
 '104,Abhijeet,Male,12-11-1989,78,90,56,56,66,290,Cognizant,Engineer Trainee,4,\n',
 '105,Pooja,Female,07-02-1990,64,74,60,60,75,273,TCS,Software Developer,8,\n',
 '106,Shruti,Female,08-06-1991,69,85,59,59,59,272,Siemens,Cloud Engineer,5,\n',
 '107,Nikita,Female,21-07-1992,70,82,74,74,66,292,KPMG,Dev ops Engineer,10,\n',
 '108,Ganesh,Male,04-09-1990,75,81,81,81,83,320,Infosys,Data Analyst,9.5,\n',
 '109,Mayuri,Female,14-05-1988,89,76,77,77,89,331,IBM,Machine learning Engineer,12.
5,\n',
 '110,Shrikant,Male,07-02-1990,88,73,78,78,90,329,Wipro,Data Analyst,4.5,\n']
```

In [22]:
```
fw.writelines(data_to_write)
```

In [23]:
```
fw.close()
```

5. Statistical Operation

In [26]:
```
# 1. Sum of Marks
# 2. Average Marks
print("Math Marks=",Maths)
print("Phyics Marks=",Physics)
print("Chemistry Marks=",Chemistry)
print("English Marks=",English)
math=[int(i) for i in Maths]
physics=[int(i) for i in Physics]
chemistry=[int(i) for i in Chemistry]
english=[int(i) for i in English]
sum_of_marks=[]
avg=[]
for i in range(len(math)):
    sum_of_marks.append(math[i]+physics[i]+chemistry[i]+english[i])
    avg.append(round(sum_of_marks[i],2))
```

```
print("Sum of Marks=",sum_of_marks)
print("Average Marks=",avg)
```

```
Math Marks= ['56', '60', '56', '78', '64', '69', '70', '75', '89', '88']
Phyics Marks= ['89', '75', '75', '90', '74', '85', '82', '81', '76', '73']
Chemistry Marks= ['74', '86', '72', '56', '60', '59', '74', '81', '77', '78']
English Marks= ['74', '86', '72', '56', '60', '59', '74', '81', '77', '78']
Sum of Marks= [293, 307, 275, 280, 258, 272, 300, 318, 319, 317]
Average Marks= [293, 307, 275, 280, 258, 272, 300, 318, 319, 317]
```

In [27]:

```
# 3. Max Marks
print("Maximum Marks=",max(avg))
```

```
Maximum Marks= 319
```

In [28]:

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

```
Maximum Marks= 258
```

In [29]:

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

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

In [30]:

```
#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= [108.52, 113.7, 101.85, 103.7, 95.56, 100.74, 111.11, 117.78, 118.15, 117.4
1]
```

In [ ]: