Assignment Day 11
By Akash Nauhwar

Question) Find out the correlation of Attrition with other variables. For example Attrition with Age, income, employee performance.

In [8]:
```
from scipy.stats import pearsonr
```

In [9]:
```
# 1) Correaltion between Attrition and Distance from home
```

In [10]:
```
stats,p=pearsonr(database.Attrition,database.DistanceFromHome)
```

In [11]:
```
print(stats,p)
```

```
-0.00944863851515625 0.5317715668019558
```

In [12]:
```
# 2) Correaltion between Attrition and Age
```

In [13]:
```
stats,p=pearsonr(database.Attrition,database.Age)
print(stats,p)
```

```
-0.1583986795409671 5.1265982193780794e-26
```

In [14]:
```
# 3) Correaltion between Attrition and Education
```

In [15]:
```
stats,p=pearsonr(database.Attrition,database.Education)
print(stats,p)
```

```
-0.017106307050278727 0.25757539308157945
```

In [16]:
```
# 4) Correaltion between Attrition and percent salary hike
```

In [17]:
```
stats,p=pearsonr(database.Attrition,database.PercentSalaryHike)
print(stats,p)
```

```
0.03315303713546663 0.028192446935112747
```

In [18]:
```
# 5) Correaltion between Attrition and TotalWorkingYears
```

In [19]:
```
stats,p=pearsonr(database.Attrition,database.TotalWorkingYears)
print(stats,p)
```

```
-0.1696699168472392 1.1645434967091854e-29
```

In [20]:
```
# 6) Correaltion between Attrition and NumCompaniesWorked
```

In [21]:
```
stats,p=pearsonr(database.Attrition,database.NumCompaniesWorked)
print(stats,p)
```

```
0.04283056724472089 0.004572057121620842
```

In [22]:
```
# 7) Correaltion between Attrition and TrainingTimesLastYear
```

In [23]:
```
stats,p=pearsonr(database.Attrition,database.TrainingTimesLastYear)
print(stats,p)
```

```
-0.04758573693081737 0.0016276603635477602
```

In [24]:
```
# 8) Correaltion between Attrition and YearsAtCompany
```

In [25]:
```
stats,p=pearsonr(database.Attrition,database.YearsAtCompany)
print(stats,p)
```

```
-0.13300261842521538 9.476118084840815e-19
```

In [26]:
```
# 9) Correaltion between Attrition and YearsSinceLastPromotion
```

In [27]:
```
stats,p=pearsonr(database.Attrition,database.YearsSinceLastPromotion)
print(stats,p)
```

```
-0.031423150563309944 0.03752293607395154
```

```
In [28]: # 10) Correaltion between Attrition and YearsWithCurrManager

In [29]: stats,p=pearsonr(database.Attrition,database.YearsWithCurrManager)
         print(stats,p)

         -0.15469153690287274 7.105369646771178e-25
```

The inference of the above analysis are as follows:

Attrition & DistanceFromHome:

As r = -0.009, there's low negative correlation between Attrition and DistanceFromHome

As the P value of 0.518 is > 0.05, we are accepting H0 and hence there's no significant correlation between Attrition & DistanceFromHome

Attrition & MonthlyIncome:

As r = -0.031, there's low negative correlation between Attrition and MonthlyIncome

As the P value of 0.038 is < 0.05, we are accepting Ha and hence there's significant correlation between Attrition & MonthlyIncome

Attrition & TotalWorkingYears:

As r = -0.17, there's low negative correlation between Attrition and TotalWorkingYears

As the P value is < 0.05, we are accepting Ha and hence there's significant correlation between Attrition & TotalWorkingYears

Attrition & YearsAtCompany:

As r = -0.1343, there's low negative correlation between Attrition and YearsAtCompany

As the P value is < 0.05, we are accepting Ha and hence there's significant correlation between Attrition & YearsAtCompany

Attrition & YearsWithCurrManager:

As r = -0.1561, there's low negative correlation between Attrition and YearsWithCurrManager

As the P value is < 0.05, we are accepting Ha and hence there's significant correlation between Attrition & YearsWithCurrManager