

Assignment -2

Python Programming

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|---------------------|-------------------|
| Assignment Date | 25 September 2022 |
| Student Name | Hemanth |
| Student Roll Number | 720819106045 |
| Maximum Marks | 2 Marks |

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
```

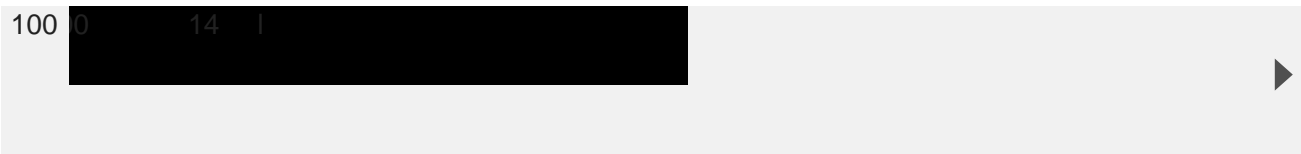
2.Loading the data Set

```
df=pd.read_csv("Churn_Modelling.csv")
df
```



| RowNumber CustomerId Surname CreditScore Geography Gender Age Tenure | | | | | | | | |
|--|------|----------|-----------|-----|--------|--------|-----|-----|
| 0 | 1 | 15634602 | Hargrave | 619 | France | Female | 42 | 2 |
| 1 | 2 | 15647311 | Hill | 608 | Spain | Female | 41 | 1 |
| 2 | 3 | 15619304 | Onio | 502 | France | Female | 42 | 8 |
| 3 | 4 | 15701354 | Boni | 699 | France | Female | 39 | 1 |
| 4 | 5 | 15737888 | Mitchell | 850 | Spain | Female | 43 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 9995 | 9996 | 15606229 | Obijaku | 771 | France | Male | 39 | 5 |
| 9996 | 9997 | 15569892 | Johnstone | 516 | France | Male | 35 | 10 |
| 9997 | 9998 | 15584532 | Liu | 709 | France | Female | 36 | 7 |

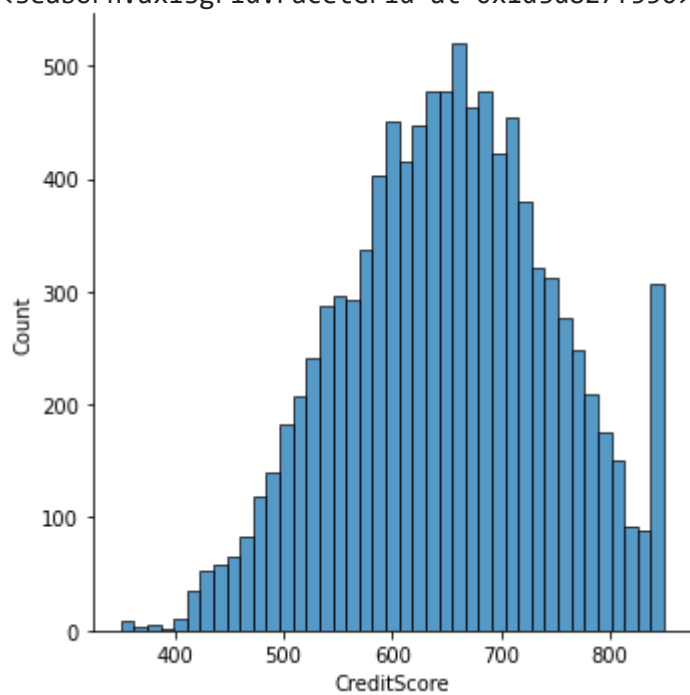
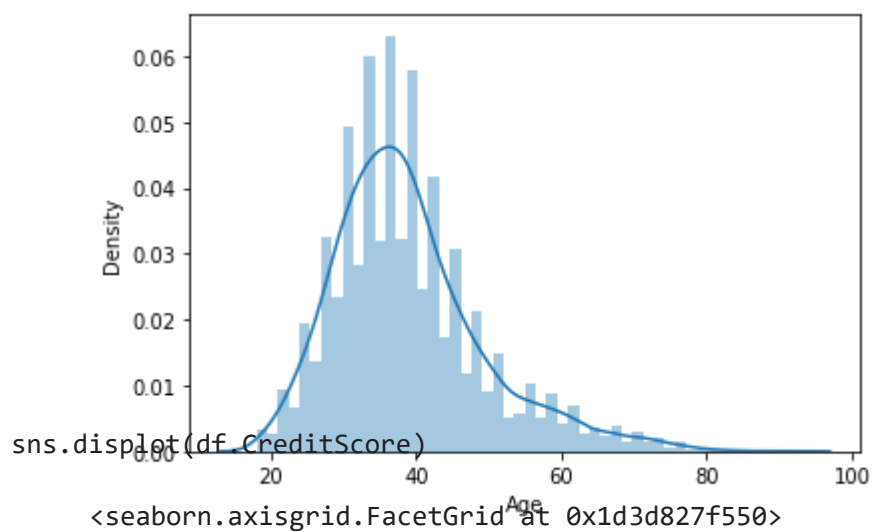
| | | | | | | | | |
|-------------|-------|----------|------------|--------|---------|------|----|---|
| 9998 | 9999 | 15682355 | Sabbatini | 772 | Germany | Male | 42 | 3 |
| 9999 | 10000 | 15628319 | Walker 792 | France | Female | | 28 | 4 |



3.Visulaizatoin 3.1

Univariate Analysis

```
sns.distplot(df.Age) C:\ProgramData\Anaconda3\lib\site-
packages\seaborn\distributions.py:2619: FutureWarni warnings.warn(msg, FutureWarning)
<AxesSubplot:xlabel='Age', ylabel='Density'>
```



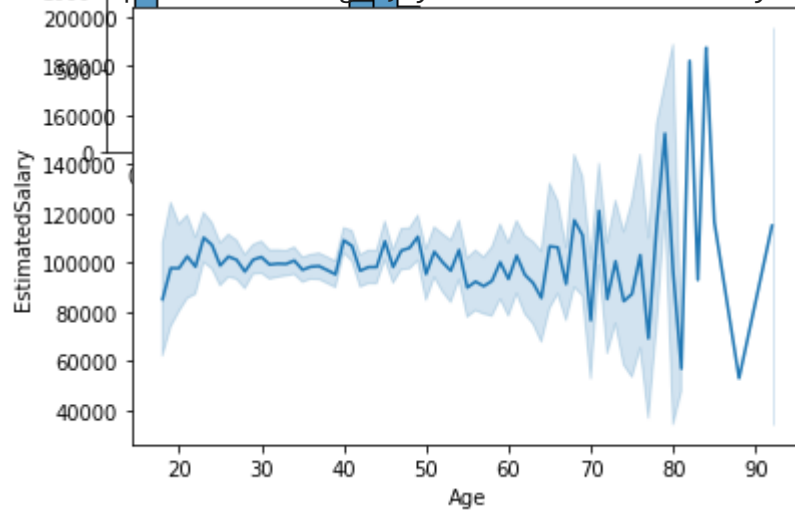
```
sns.displot(df.Balance)
<seaborn.axisgrid.FacetGrid at 0x1d3d40c6700>
sns.lineplot(df.Age,df.Balance)
```

C:\ProgramData\Anaconda3\lib\site-packages\seaborn_decorators.py:36: FutureWarning:

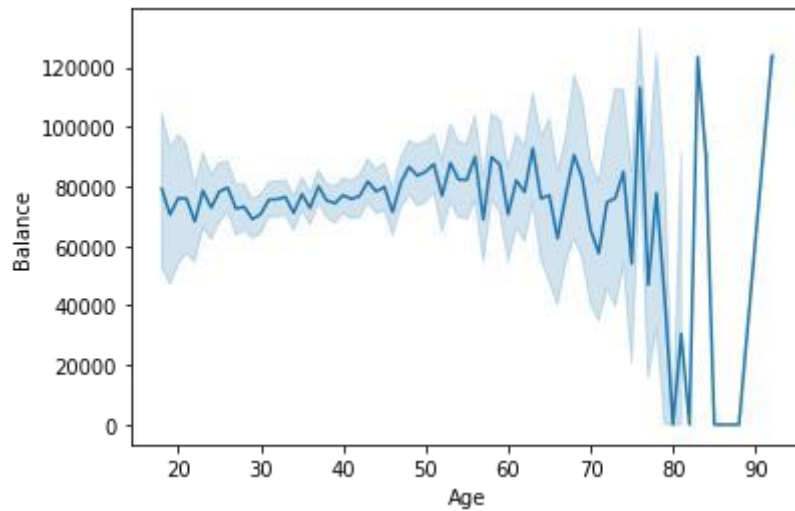
3.2 Bi - Variate analysis

```
sns.lineplot(df.Age,df.EstimatedSalary)
```

C:\ProgramData\Anaconda3\lib\site-packages\seaborn_decorators.py:36: FutureWarning: warnings.warn(
<AxesSubplot:xlabel='Age', ylabel='EstimatedSalary'>

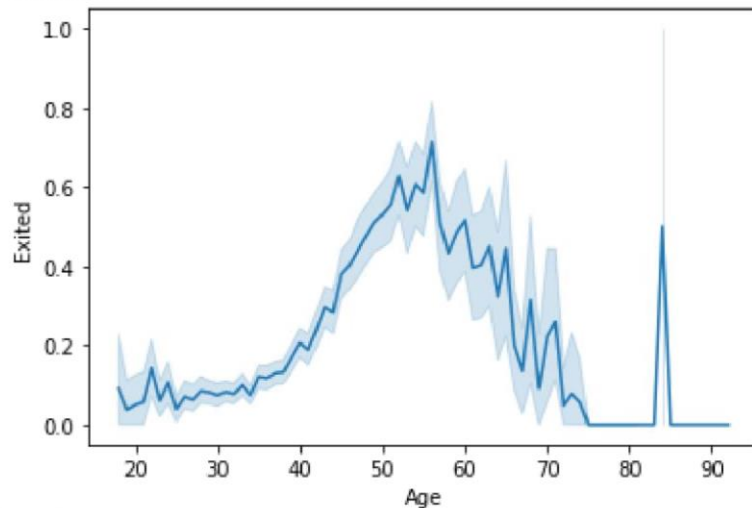


```
warnings.warn( <AxesSubplot:xlabel='Age',  
ylabel='Balance'>
```

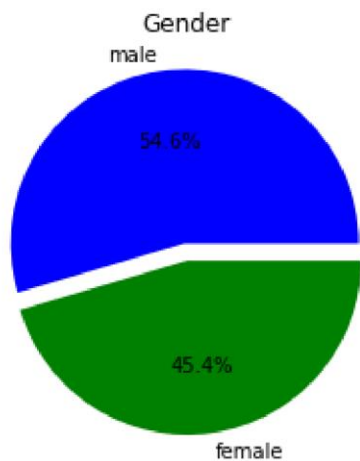


```
sns.lineplot(df.Age,df.Exited)
```

```
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning:
warnings.warn(
<AxesSubplot:xlabel='Age', ylabel='Exited'>
```

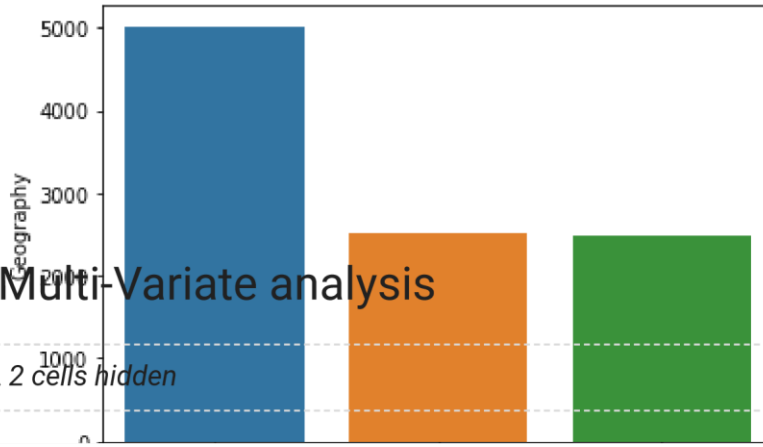


```
plt.pie(df.Gender.value_counts(), [0.1, 0], labels=["male", "female"], autopct="%1.1f%%", colors
plt.title("Gender")
plt.show()
```



```
sns.barplot(df.Geography.value_counts().index, df.Geography.value_counts())
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning:
warnings.warn(
```

<AxesSubplot:ylabel='Geography'>



▶ 3.3 Multi-Variate analysis

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▶ 4. Perform the descriptive Statistics

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▶ 5. Handling the missing Values

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▶ 6. Finding Outliers

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▶ 7. Check for Categorical columns and perform encoding

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▶ 8. Split the data into dependent and independent variables

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▶ 9. Scale the independent variables

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▶ 10. Split the data into training and testing

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