Analysis on ML Test Scores

Batch - Represents the Batch Name

User_ID - Represents the unique student id

Score - Represents the Score out of 7

Data URL Link : https://drive.google.com/file/d/1d5cLgsku0WUiEupuSlaNWhH3aKpo7shp/view?usp=sharing

A look into database

```
import numpy as np
import pandas as pd
```

```
df = pd.read_csv('/content/scores_data.csv')
```

```
df.head()
```

	Batch	User_ID	Score
0	AI_ELITE_7	uid_149	6 / 7
1	AI_ELITE_7	uid_148	6 / 7
2	AI_ELITE_7	uid_147	7 / 7
3	AI_ELITE_7	uid_146	7 / 7
4	AI_ELITE_7	uid_145	4 / 7

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 149 entries, 0 to 148
Data columns (total 3 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   Batch        149 non-null    object
 1   User_ID      149 non-null    object
 2      Score     149 non-null    object
dtypes: object(3)
memory usage: 3.6+ KB
```

```
# Clean the column names

df.columns = df.columns.str.replace(' ', '')
```

```
df.columns
```

```
Index(['Batch', 'User_ID', 'Score'], dtype='object')
```

```
# remove /
df['Score'] = df['Score'].apply(lambda x: x.replace('/',''))
```

```
# remove 7
df['Score'] = df['Score'].apply(lambda x: x.replace(' 7',''))
```

```
df['Score'].unique()
```

```
array(['6 ', '7 ', '4 ', '5 ', '3 ', '2 ', '0 ', '1 '], dtype=object)
```

```
df.head()
```

	Batch	User_ID	Score
0	AI_ELITE_7	uid_149	6
1	AI_ELITE_7	uid_148	6
2	AI_ELITE_7	uid_147	7
3	AI_ELITE_7	uid_146	7
4	AI_ELITE_7	uid_145	4

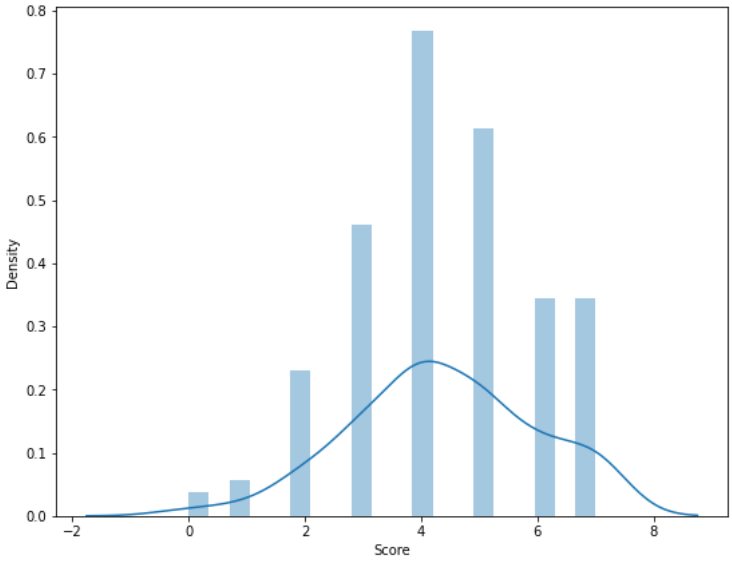
```
df.isnull().sum().sort_values(ascending=False)
```

```
Batch      0
User_ID    0
Score      0
dtype: int64
```

Plot Insights about three different batches according to their scores

```
import matplotlib.pyplot as plt
import seaborn as sns
plt.figure(figsize=(9,7))
sns.distplot(df['Score'],bins=20)
```

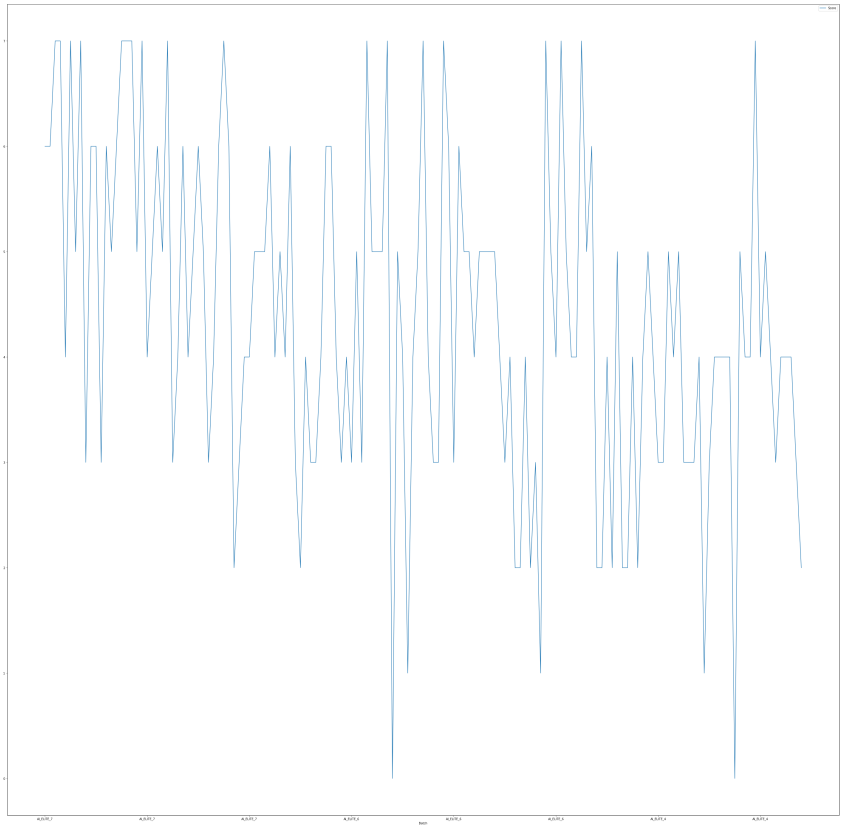
```
<ipython-input-17-0aa5440a4e75>:4: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(df['Score'],bins=20)
<Axes: xlabel='Score', ylabel='Density'>
```




```
# convert score's datatype into int
df['Score']=df['Score'].astype('int')
```

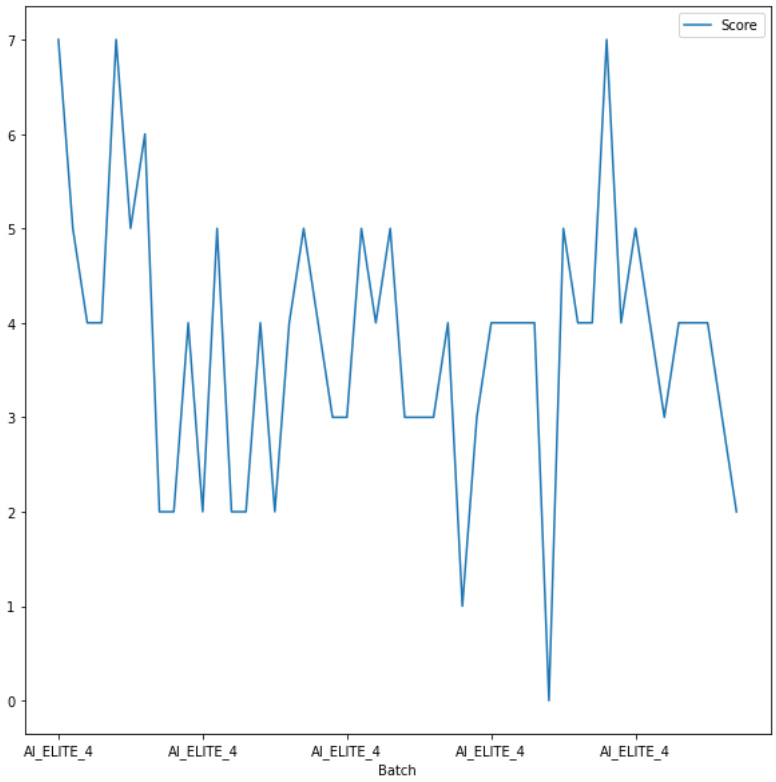
```
df.plot(x='Batch',y='Score',kind="line",figsize=(50, 50))
```

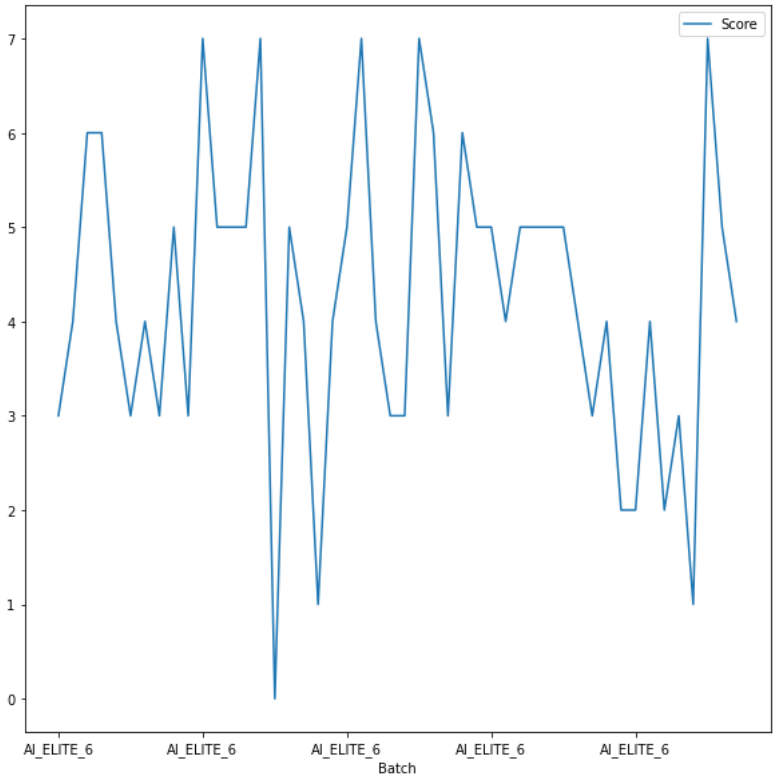
<Axes: xlabel='Batch'>

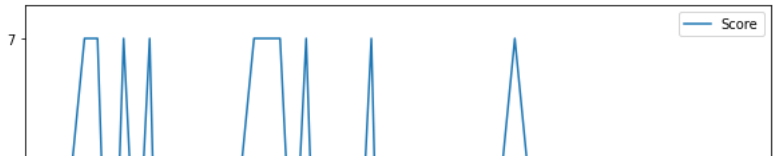


```
df1=df.groupby('Batch')
df1.plot(x='Batch',y='Score',kind="line",figsize=(10, 10))
```

```
Batch
AI_ELITE_4    Axes(0.125,0.125;0.775x0.755)
AI_ELITE_6    Axes(0.125,0.125;0.775x0.755)
AI_ELITE_7    Axes(0.125,0.125;0.775x0.755)
dtype: object
```

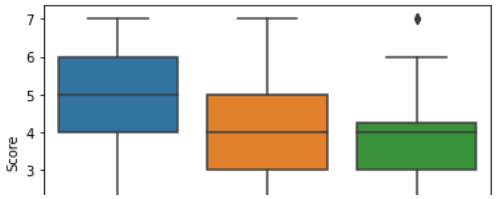






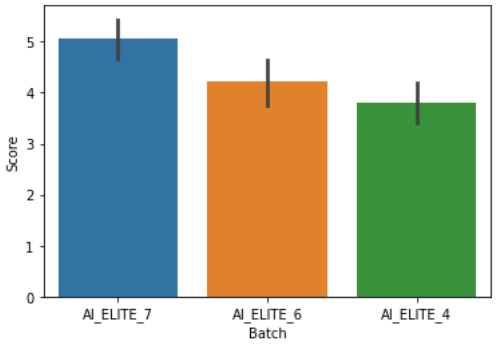

```
sns.boxplot(data=df,x='Batch',y='Score')
```

```
<Axes: xlabel='Batch', ylabel='Score'>
```




```
sns.barplot(data=df,x='Batch',y='Score')
```

```
<Axes: xlabel='Batch', ylabel='Score'>
```




```
sns.violinplot(x=df["Score"],y=df['Batch'])
```

```
<Axes: xlabel='Score', ylabel='Batch'>
```