Bangladeshi Students Survey

Online Survey Data of Bangladeshi Students

Importing Libraries

```
# importing libraries
import pandas as pd # data processing
import numpy as np # linear algebra
import matplotlib.pyplot as plt # visualization
%matplotlib inline

import seaborn as sns
# increases the size of sns plots
sns.set(rc={'figure.figsize':(8,6)})
```

Read Data

```
# raw data in panda dataframe
df = pd.read_csv('/content/Online Survey Data on Education Bd.csv')
print('Data Frame Shape: \n{}'.format(df.shape))
# shows five instances of the dataframe
df.head()
```

```
Data Frame Shape:
(8783, 17)
```

	Level of study?	Age?	Used smartphone/computer/laptop previously before online class?	Result increased after online education (comparatively)?	Knowledge increased after online education (comparatively)?	Happy o educa
0	Upto HSC	20.0	Yes	No	Yes	
1	Hons or Grater	25.0	No	No	No	
2	Hons or Grater	25.0	Yes	Yes	Yes	
3	Upto HSC	21.0	Yes	Yes	No	
	Hons					

Data Pre-processing

```
df.columns
```

```
Index(['Level of study?', 'Age?',
       'Used smartphone/computer/laptop previously before online class?',
       'Result increased after online education  (comparatively)?',
       'Knowledge increased after online education (comparatively)?',
       'Happy with online education?', 'Education Institute Area?',
       'Have Internet availability?', 'Broadband / Mobile Internet?',
       'Total hours of study before online education?',
       'Total hours of study after online education?',
       'Class performance increased in online education?', 'Institute Type',
       'Current location (During Study) ?', 'Gender',
```

```
       'Faced any issue with online class?',
       'Preferred device for an online course'],
      dtype='object')
```

```
# investigating all the elements whithin each Feature
for column in df:
  unique_vals = df[column].unique()
  nr_values = len(unique_vals)

  if nr_values < 10:
    print('The number of values for feature {} :{} -- {}'.format(column, nr_values,unique_vals))
  else:
    print('The number of values for feature {} :{}'.format(column, nr_values))
```

```
The number of values for feature Level of study? :2 -- ['Upto HSC' 'Hons or Grater']
The number of values for feature Age? :12
The number of values for feature Used smartphone/computer/laptop previously before online class? :3 -- ['Yes' 'No' nan]
The number of values for feature Result increased after online education  (comparatively)? :3 -- ['No' 'Yes' nan]
The number of values for feature Knowledge increased after online education (comparatively)? :2 -- ['Yes' 'No']
The number of values for feature Happy with online education? :2 -- ['No' 'Yes']
The number of values for feature Education Institute Area? :3 -- ['Urban' 'Rural' nan]
The number of values for feature Have Internet availability? :2 -- ['No' 'Yes']
The number of values for feature Broadband / Mobile Internet? :2 -- ['Broadband' 'Mobile Internet']
The number of values for feature Total hours of study before online education? :4 -- [4 5 3 6]
The number of values for feature Total hours of study after online education? :3 -- [3 4 2]
The number of values for feature Class performance increased in online education? :2 -- ['No' 'Yes']
The number of values for feature Institute Type :3 -- ['Public' 'Private' nan]
The number of values for feature Current location (During Study) ? :3 -- ['Rural' 'Urban' nan]
The number of values for feature Gender :3 -- ['Male' 'Female' nan]
The number of values for feature Faced any issue with online class? :3 -- ['Yes' 'No' nan]
The number of values for feature Preferred device for an online course :2 -- ['Mobile' 'Computer']
```

```
# checking for the null values
df.isnull().sum()
```

```
Level of study?                                                   0
Age?                                                            445
Used smartphone/computer/laptop previously before online class?   188
```

```
Result increased after online education  (comparatively)?          323
Knowledge increased after online education (comparatively)?          0
Happy with online education?                                         0
Education Institute Area?                                          529
Have Internet availability?                                          0
Broadband / Mobile Internet?                                         0
Total hours of study before online education?                        0
Total hours of study after online education?                         0
Class performance increased in online education?                     0
Institute Type                                                     726
Current location (During Study) ?                                  726
Gender                                                             676
Faced any issue with online class?                                 701
Preferred device for an online course                                0
dtype: int64
```