

## Assignment Day 4 Homework Solution¶

Data Science 101 Course

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Questions 1:

How to import pandas and check the version?

In [3]:

```
import pandas as pd
```

```
print(pd._version_)
```

```
1.1.4
```

Questions 2:

How to create a series from a numpy array?

In [4]:

```
# importing Pandas & numpy
```

```
import pandas as pd
```

```
import numpy as np
```

```
# numpy array
```

```
data = np.array(['a', 'b', 'c', 'd', 'e'])
```

```
# creating series
```

```
s = pd.Series(data)
```

```
print(s)
```

```
0    a
```

```
1    b
```

```
2    c
```

```
3    d
```

```
4    e
```

```
dtype: object
```

Questions 3:

How to convert the index of a series into a column of a dataframe?

In [6]:

```
import pandas as pd
```

```
df = pd.DataFrame({'Roll Number': ['CSE29', 'CSE49', 'CSE36', 'CSE44'],
```

```
'Name': ['Prakash', 'Raj', 'Shubham', 'Rahul'],
'Marks In Percentage': [97, 90, 70, 82],
'Grade': ['A', 'A', 'C', 'B'],
'Subject': ['Physics', 'Physics', 'Physics', 'Physics']})
```

# Printing the dataframe

```
df['index'] = df.index
```

```
df
```

Out[6]:

Roll Number	Name	Marks In Percentage	Grade	Subject	index
0	CSE29 Prakash	97	A	Physics	0
1	CSE49Raj	90	A	Physics	1
2	CSE36 Shubham	70	C	Physics	2
3	CSE44 Rahul	82	B	Physics	3

Questions 4:

Write the code to list all the datasets available in seaborn library. Load the 'mpg' dataset

Note: mpg dataset will be read from seaborn module in the manner sir has already shown(provided in the materials folder)

In [1]:

```
# importing seaborn
```

```
import seaborn as sns
```

```
mpg=sns.load_dataset('mpg')
```

```
print(mpg)
```

	mpg	cylinders	...	origin	name
0	18.0	8	...	usa	chevrolet chevelle malibu
1	15.0	8	...	usa	buick skylark 320
2	18.0	8	...	usa	plymouth satellite
3	16.0	8	...	usa	amc rebel sst
4	17.0	8	...	usa	ford torino
..	...	...	...	...	...
393	27.0	4	...	usa	ford mustang gl
394	44.0	4	...	europa	vw pickup
395	32.0	4	...	usa	dodge rampage
396	28.0	4	...	usa	ford ranger
397	31.0	4	...	usa	chevy s-10

[398 rows x 9 columns]

Questions 5:

Which country origin cars are a part of this dataset?

In [2]:

```
# importing seaborn
import seaborn as sns
# importing pandas with alias name
import pandas as pd
```

```
# loading the dataset from seaborn
mpg=sns.load_dataset('mpg')
```

```
# creating a dataframe
df = pd.DataFrame(mpg)
```

```
# Displaying the country origin from where cars belong
df.origin.unique()
```

Out[2]:

```
array(['usa', 'japan', 'europe'], dtype=object)
```

Question - 6:

Extract the part of the dataframe which contains cars belonging to 'usa'

In [3]:

```
# importing seaborn
import seaborn as sns
# importing pandas with alias name
import pandas as pd
```

```
# loading the dataset from seaborn
mpg=sns.load_dataset('mpg')
```

```
# creating a dataframe
df = pd.DataFrame(mpg)
```

```
# Displaying the part from dataframe where cars belong to "usa"
```

```
df[df['origin'].str.contains("usa")]
```

Out[3]:

mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin		
name									
0	18.0	8	307.0	130.0	3504	12.0	70	usa	chevrolet chevelle malibu
1	15.0	8	350.0	165.0	3693	11.5	70	usa	buick skylark 320
2	18.0	8	318.0	150.0	3436	11.0	70	usa	plymouth satellite
3	16.0	8	304.0	150.0	3433	12.0	70	usa	amc rebel sst
4	17.0	8	302.0	140.0	3449	10.5	70	usa	ford torino
...	...	...	...	...	...	...	...	...	...
392	27.0	4	151.0	90.0	2950	17.3	82	usa	chevrolet camaro
393	27.0	4	140.0	86.0	2790	15.6	82	usa	ford mustang gl

395	32.0	4	135.0	84.0	2295	11.6	82	usa	dodge rampage
396	28.0	4	120.0	79.0	2625	18.6	82	usa	ford ranger
397	31.0	4	119.0	82.0	2720	19.4	82	usa	chevy s-10

249 rows x 9 columns

In [ ]: