Q1. Create a Pandas Series that contains the following data: 4, 8, 15, 16, 23, and 42. Then, print the series.

In [1]:

```
import pandas as pd
s  = [4, 8, 15, 16, 23, 42 ]
s1 = pd.Series(s)
s1
```

Out[1]:

```
0     4
1     8
2    15
3    16
4    23
5    42
dtype: int64
```

Q2. Create a variable of list type containing 10 elements in it, and apply pandas.Series function on the variable print it.

In [2]:

```
l = [i for i in range(10)]
s2  = pd.Series(l)
s2
```

Out[2]:

```
0    0
1    1
2    2
3    3
4    4
5    5
6    6
7    7
8    8
9    9
dtype: int64
```

Q3. Create a Pandas DataFrame that contains the following data:

In [3]:

```
data  = {"Name" : ['Alice','Bob','Claire'],
         "Age" :  [25,30,27],
        "Gender" : ['female','male','female']}
df = pd.DataFrame(data)
df
```

Out[3]:

	Name	Age	Gender
0	Alice	25	female
1	Bob	30	male
2	Claire	27	female

Q4. What is 'DataFrame' in pandas and how is it different from pandas.series? Explain with an example.

Series can only contain single list with index, whereas dataframe can be made of more than one series or we can say that a dataframe is a collection of series that can be used to analyse the data.

In [4]:

```
#example :
data  = {"Name" : ['Alice','Bob','Claire'],
         "Age" :  [25,30,27],
        "Gender" : ['female','male','female']}
df = pd.DataFrame(data)
df
```

Out[4]:

	Name	Age	Gender
0	Alice	25	female
1	Bob	30	male
2	Claire	27	female

Q5. What are some common functions you can use to manipulate data in a Pandas DataFrame? Can you give an example of when you might use one of these functions?

```
head()

tail()

describe()

drop()

fillna()

groupby()
```

Q6. Which of the following is mutable in nature Series, DataFrame, Panel?

A mutable object is an object whose value can be changed after it is created. In Pandas, both Series and DataFrame can be modified after they are created by adding, deleting or modifying values or columns. This is in contrast to immutable objects like tuples, where the values cannot be changed after creation.

Q7. Create a DataFrame using multiple Series. Explain with an example.

In [5]:

```
Name =  pd.Series(['Alice','Bob','Claire'])
marks = pd.Series([25,30,27])
Gender = pd.Series( ['female','male','female'])

df1 = pd.DataFrame({'name' : Name,'mark' : marks, 'gender' : Gender})
df1
```

Out[5]:

	name	mark	gender
0	Alice	25	female
1	Bob	30	male
2	Claire	27	female