Pandas Series to numpy()

- **This** function is used to return a NumPy ndarray representing the values in given Series or Index.
- This function can convert the pandas **Series** to numpy **Array**. The concept behind this technique is very unique. Because we know the Series having index in the output. Whereas in numpy arrays we only have elements in the numpy arrays.

Syntax: Series.to_numpy()

Parameters:

dtype: Data type which we are passing like str.

copy : [bool, default False] Ensures that the returned value is a not a view on another array.

Code 1 :

- Always remember that when dealing with lot of data you should clean the data first to get the high accuracy. Although in this code we use the first five values of Weight column by using .head() method.
- Upload the csv file in google colab

```
# reading the csv
data = pd.read_csv("nba.csv")


# creating series form weight column
gfg = pd.Series(data['Weight'].head())

# using to_numpy() function
print(type(gfg.to_numpy()))
Output :
```

[180. 235. 185. 235. 238.]

Dataframe to numpy

Pandas DataFrame is two-dimensional size-mutable, with heterogeneous tabular data structure with labeled axes (rows and columns). This data structure can be converted to NumPy ndarray with the help of this method.

- **Syntax:** Dataframe.to_numpy(dtype = None, copy = False)
- **Parameters:**
  dtype: Data type which we are passing like str.
  copy: [bool, default False] Ensures that the returned value is a not a view on another array.
- **Returns:**
  numpy.ndarray

Example 1:

INTERNSHIPSTUDIO

- Changing the DataFrame into numpy array by using a method DataFrame.to_numpy(). Always remember that when dealing with lot of data you should clean the data first to get the high accuracy. Although in this code we use the first five values of Weight column by using .head() method.

```
# reading the csv
data = pd.read_csv("nba.csv")

# creating DataFrame form weight column
gfg = pd.DataFrame(data['Weight'].head())

# using to_numpy() function
print(gfg.to_numpy())
```

Output:

```
[[180.]
 [235.]
 [185.]
 [235.]
 [238.]]
```

Example 2:

- In this code we are just giving the parameters in the same code. So we provide the dtype here.

```
# read csv file
data = pd.read_csv("nba.csv")

# creating DataFrame form weight column
gfg = pd.DataFrame(data['Weight'].head())
   # providing dtype
print(gfg.to_numpy(dtype ='float32'))
```

Output:

```
[[180.]
 [235.]
 [185.]
 [235.]
 [238.]]
```

Pandas

INTERNSHIPSTUDIO

- Explain Pandas Series.to_numpy() with program?
- Explain Pandas Dataframe.to_numpy() with program?
- Pls run this code on your notebook and report the output.

```
import numpy as np
import pandas as pd
np_array = np.array([10, 20, 30, 40, 50])
print("NumPy array:")
print(np_array)
new_series = pd.Series(np_array)
print("Converted Pandas series:")
print(new_series)
```