

```
1 from torch.utils.data import Dataset
2 import torch
3 import numpy as np
4
5
6 class CustomDataset(Dataset):
7     """An implementation of torch.utils.data.Dataset .
8
9     Args:
10         Dataset (Class): generic pytorch dataset class.
11     """
12
13     def __init__(self, X: np.ndarray, y: np.ndarray):
14         """Initialize the dataset
15
16         Args:
17             X (np.ndarray): data.
18             y (np.ndarray): labels.
19         """
20         super(CustomDataset, self).__init__()
21         self.X = torch.from_numpy(X).float()
22         self.y = torch.from_numpy(y)
23
24     def __getitem__(self, index: int) -> tuple:
25         """Return data and label based on index.
26
27         Args:
28             index (int): index.
29
30         Returns:
31             tuple: data, label
32         """
33         return self.X[index], self.y[index]
34
35     def __len__(self) -> int:
36         """Return dataset length
37
38         Returns:
39             int: length
40         """
41         return self.X.shape[0]
```