**Lesson 14 (Minibatches and Epochs)**
Write a Python routine that generates random samples, called **minibatches**, of size `BATCH_SIZE`, taken from a data set of size `N`. Each data point in the data set should occur *exactly once* in a minibatch. When each point in the data set has appeared once in a minibatch, we say that one **epoch** has been completed. Your code should be able to generate multiple epochs. For some combinations of `BATCH_SIZE` and `N`, the last minibatch will have to have a smaller size than `BATCH_SIZE`. If necessary, pad the last minibatch with a data from the first minibatch. For simplicity assume the data set is just the integers $\{0, 1, 2, \ldots, N-1\}$.

```
import numpy as np

BATCH_SIZE = 6
EPOCHS = 2
N = 40

np.random.seed(0)

< code omitted >

EPOCH = 1
minibatch = 1     [22 20 25  4 10 15]
minibatch = 2     [28 11 18 29 27 35]
minibatch = 3     [37  2 39 30 34 16]
minibatch = 4     [36  8 13  5 17 14]
minibatch = 5     [33  7 32  1 26 12]
minibatch = 6     [31 24  6 23 21 19]
minibatch = 7     [ 9 38  3  0 22 20]
EPOCH = 2
minibatch = 1     [12 13 26 36 25 18]
minibatch = 2     [22 33 14 38  2 34]
minibatch = 3     [24 27  3 16 29  7]
minibatch = 4     [19  1 37  9 30 15]
minibatch = 5     [17 20  8  6  5 21]
minibatch = 6     [ 4 39  0 28 11 35]
minibatch = 7     [23 10 31 32 12 13]
```

Some useful commands are given below.

```
np.arange
np.random.permutation
np.ceil
```