Philox PRNG

This program generates pseudorandom numbers using *numpy* built-in generator Philox

Required libraries: *numpy, numpy.random, argparse, pickle, pandas, time*

1. INPUT

This program takes five parameters – non of them is required and has default values:

- *n (default: 10000)* – number of numbers that we are generating; must be a float – if it is not an integer then floor is taken
- *M (default: 1024)* – modulus, generated numbers are in range [1, *M*-1]; must be a float – if it is not an integer then floor is taken
- *output-file (default: 'generated_numbers.pkl')* – name of pickle file where we are saving our numbers – if exists it is replaced, if does not new file is created
- *seeds (default: '')* – path/name of csv file containing seeds (one in every row) – for every seed creates new file; if default time is taken
- *output-dir (default: '')* - path/name of directiory where files with generated numbers are saved

2. OUTPUT

Creates new file(s) (depending on parameters). Every file contains *n* generated numbers, all in range [1, *M*-1]. If works on one default seed one *output-file* is created. If works on many seeds in *seeds* creates number of seeds files. If *output-dir* is entered files are created in this directory.

Every file also contains name of generator – *Philox*, modulus – *M* and *n*.

3. EXAMPLES

creates new files in *res* directory, every file contains *100* numbers, all in range [1, 31]:

```
python z4_philox.py --n 100 --M 32 --seeds
sample_seeds.csv --output-dir res
```

creates new files in *res* directory, every file contains *100* numbers, all in range [1, 31]:

```
python z4_philox.py --n 1000 --M 64 --output-file
numbers.pkl
```