EXERCISE 2:

The folder “memory” contains a set of files. Each file stores information about where a certain data set is stored in the flash memory. This information is represented by two fields, the “FLASH_SECTORS_START_ADDRESS” and the “FLASH_SECTORS_STOP_ADDRESS”. These two fields represent the start and stop address of the given data set in the flash memory. An example of file is given below:

```
~$ cat dataSet1.memo
DATA_TYPE = file
DATE = 02-03-2023 12:15:23
FLASH_SECTORS_START_ADDRESS = 11000000
FLASH_SECTORS_STOP_ADDRESS = 16000000
~$
```

The memory we take into account has 48,000,000 flash sectors. The first 10,000,000 flash sectors are never used. The remaining flash sectors are instead nominally used to store data. Write a python program that parses all the files present in the memory folder and prints the percentage of free and used memory (considering the first 10M sectors as used). Moreover, the program should produce a plot similar to the one below, representing the portion of used and free memory. Memory taken by the files of the memory folder and reserved memory should be depicted with different colors. It’s up to you to choose the colors.