Performance_Testing

February 19, 2018

1 CS35L: HW5 Performance Comparison

We have just finished the implementation of all the programs. Now we are going to time all of them, including the previous ones created in the last assignment:

- `sfrob`
- `sfrobu`
- `sfrobs`
- `sfrobu -f`
- `sfrobs -f`

First we created a testing file consisting of 1,000,000 randomly generated and encrypted words named `rand_words.txt` with a custom Python script `rand_words.py`.

```
In [1]: ls
```

```
CS35L_Lab_5.ipynb           rand_words.py   sfrob    sfrobs  test.txt  tr2u.c
Performance_Testing.ipynb  rand_words.txt  sfrob.c  sfrobu  tr2b.c
```

```
In [2]: cat rand_words.py
```

```
from random import choices

def encrypt(word):
  result_builder = []
  for char in word:
    encrypted_char = chr(ord(char) ^ 42)
    result_builder.append(encrypted_char)
  result = ''.join(result_builder)
  return result

words = [word.strip() for word in open("/usr/share/dict/words", 'r').readlines()]
output = open("rand_words.txt", 'w')

for word in choices(words, k = 1000000):
  output.write(encrypt(word) + ' ')
```

Now we are going to use the testing file to time the performance of the above mentioned 5 programs.

```
In [3]: time ./sfrob < rand_words.txt > /dev/null


real        0m2.938s
user        0m2.871s
sys        0m0.035s


In [4]: time ./sfrobu < rand_words.txt > /dev/null


real        0m22.789s
user        0m10.453s
sys        0m12.185s


In [5]: time ./sfrobs < rand_words.txt > /dev/null


real        0m14.241s
user        0m14.070s
sys        0m0.116s


In [6]: time ./sfrobu -f < rand_words.txt > /dev/null


real        0m23.274s
user        0m10.935s
sys        0m12.134s


In [7]: time ./sfrobs -f < rand_words.txt > /dev/null


real        0m14.205s
user        0m14.060s
sys        0m0.107s
```

Here is a summary of the performance of the 5 programs:

- sfrob 0m2.938s
- sfrobu 0m22.789s
- sfrobs 0m14.241s
- sfrobu 0m23.274s
- sfrobs 0m14.205s