

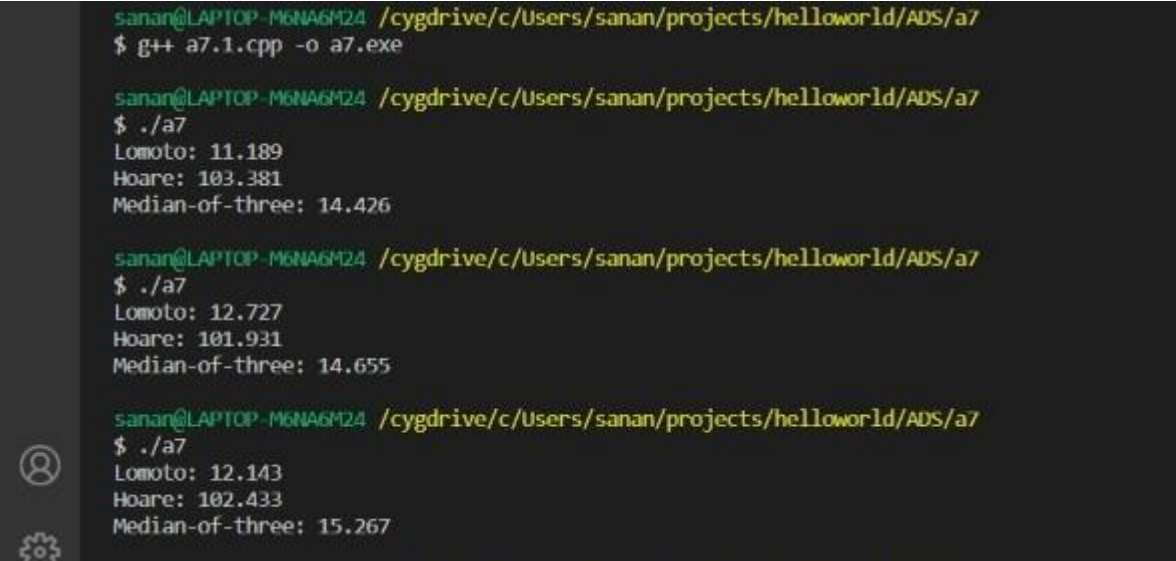
# Assignment 7

P.1

a, b, c) all of these partitioning methods have been implemented in "a7.1.cpp".

d) The implementation is in the "a7.1.cpp". From my observations I have run the code for three times to get the average running times of all of the three partitioning methods. From results which you can see below Lomuto and "Median-of-three" partitioning methods have similarly same running times,(nevertheless, Lomuto has been bit faster than "Median-of-three in my tests, but I don't want to make sure accusation that Lomuto is fastest one as I have only tested 3 times), nevertheless the Hoare partitioning method took much more longer time which makes it not that optimal.

The results are in seconds.



```
sanan@LAPTOP-M6NA6M24 /cygdrive/c/Users/sanan/projects/helloworld/ADS/a7
$ g++ a7.1.cpp -o a7.exe

sanan@LAPTOP-M6NA6M24 /cygdrive/c/Users/sanan/projects/helloworld/ADS/a7
$ ./a7
Lomuto: 11.189
Hoare: 103.381
Median-of-three: 14.426

sanan@LAPTOP-M6NA6M24 /cygdrive/c/Users/sanan/projects/helloworld/ADS/a7
$ ./a7
Lomuto: 12.727
Hoare: 101.931
Median-of-three: 14.655

sanan@LAPTOP-M6NA6M24 /cygdrive/c/Users/sanan/projects/helloworld/ADS/a7
$ ./a7
Lomuto: 12.143
Hoare: 102.433
Median-of-three: 15.267
```