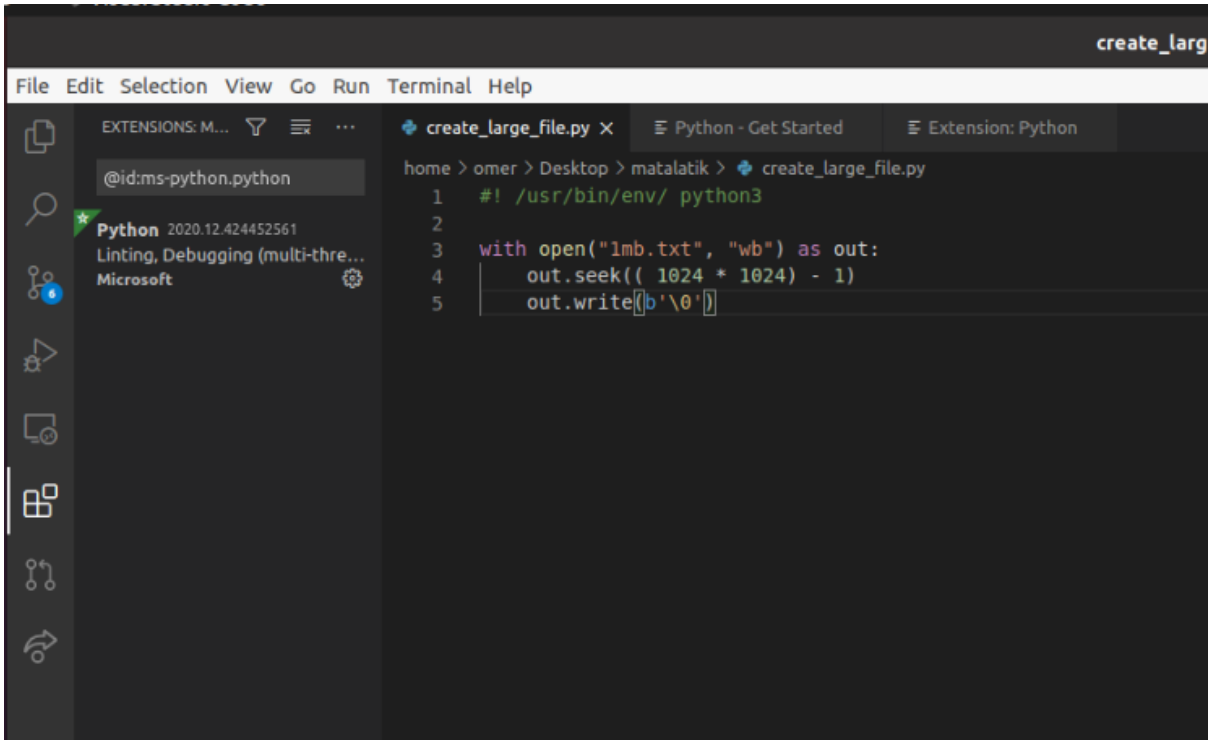
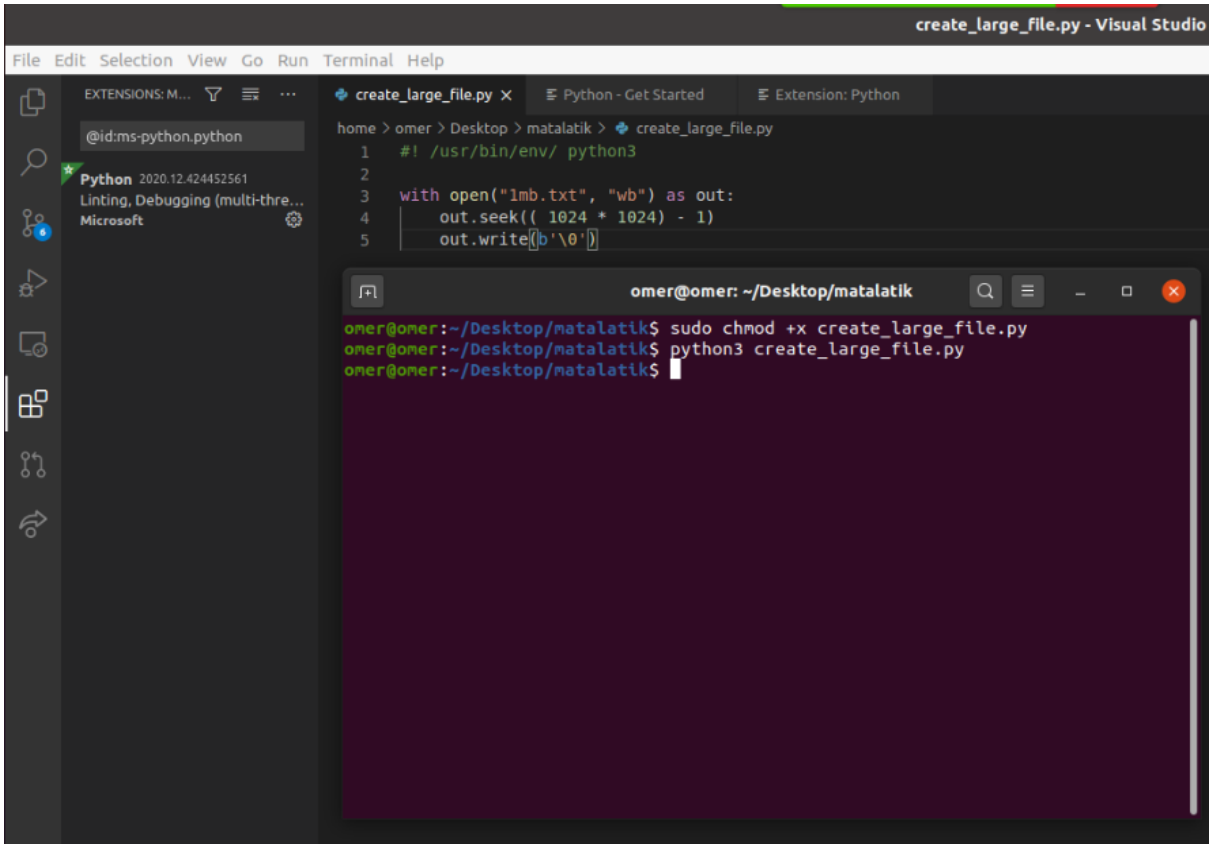
1. 

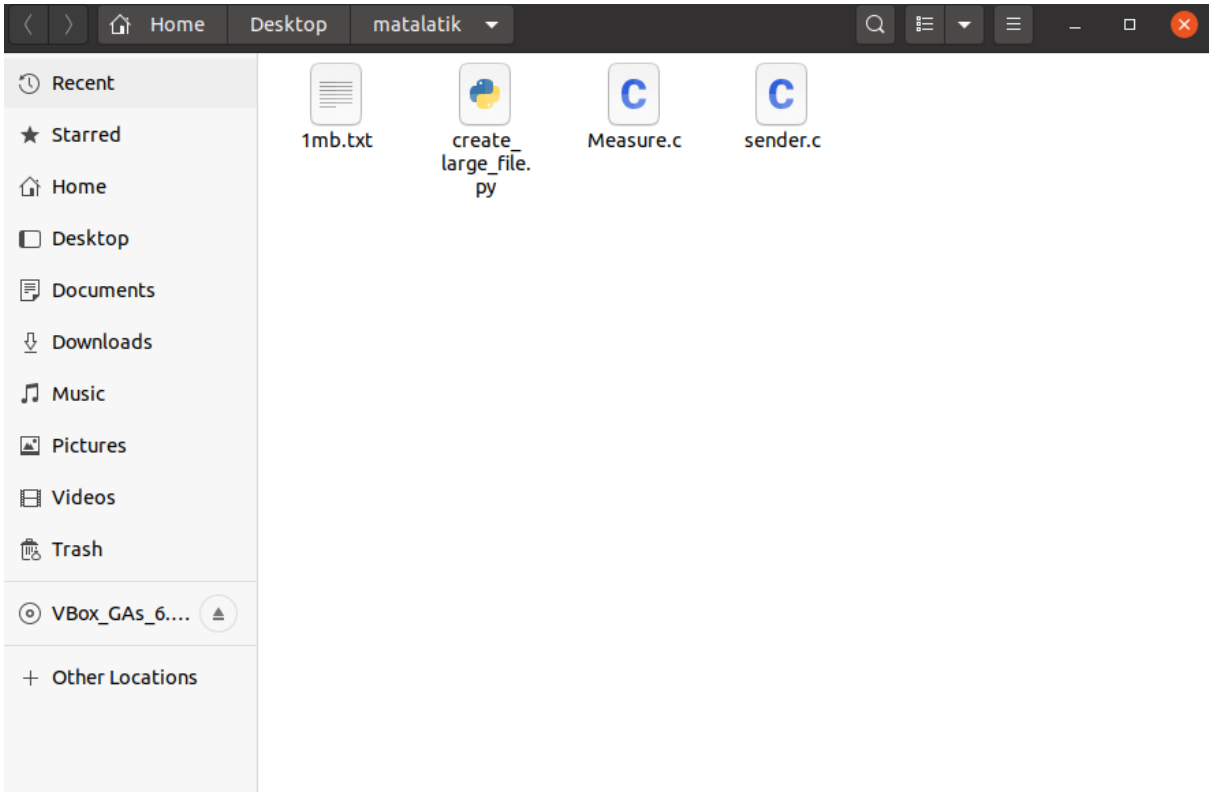
יצירת קובץ בגודל 1mg

.2



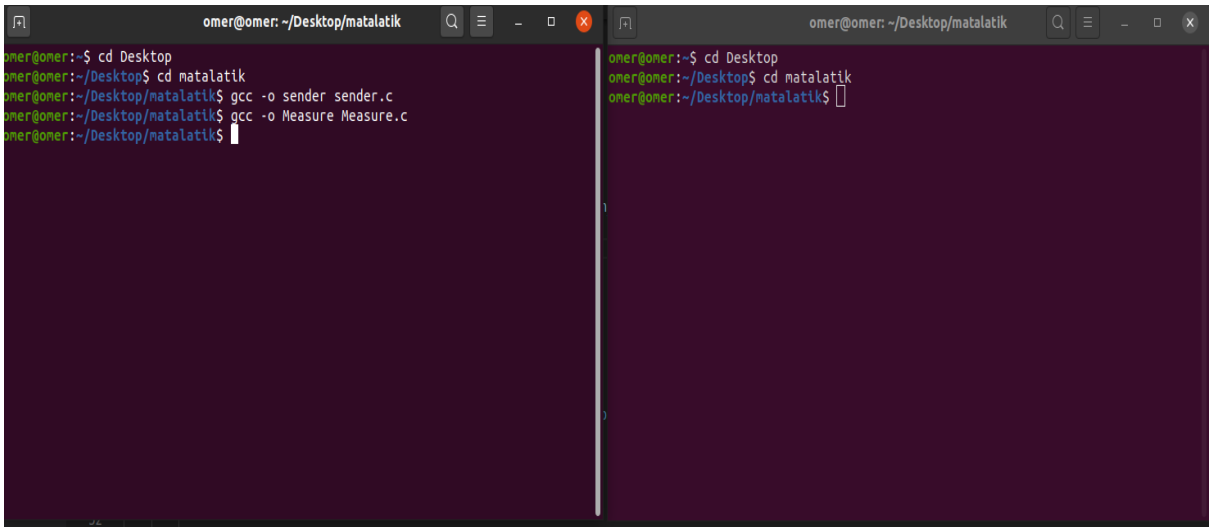
המשך יצירת הקובץ של mg1

.3



כאן ניתן למעשה לראות את קובץ ה1 mg בתוך התיקייה של הפרויקט.

.4



קימפול ראשוני.

.5

יצירת סרבר.

.6

```
omer@omer:~/Desktop/matalatik$ gcc -o Measure Measure.c
omer@omer:~/Desktop/matalatik$ gcc -o sender  sender.c
omer@omer:~/Desktop/matalatik$ ./Measure
create server
real time is 1 seconds
real time is 1 seconds
real time is 0 seconds
real time is 0 seconds
real time is 1 seconds
avarage time =  0.000316
general time = about 3 seconds
changed to reno algorithm
real time is 0 seconds
real time is 1 seconds
real time is 0 seconds
real time is 1 seconds
real time is 0 seconds
avarage time is=  0.000321
general time is= about 2 seconds
omer@omer:~/Desktop/matalatik$
```

```
omer@omer:~/Desktop/matalatik$ ./sender
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
after changing algorithm to reno
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
omer@omer:~/Desktop/matalatik$
```

. תוצאת סיום לאחר סיום הרצה ראשוני של הסרבר (שליחת פקטות).

.7

```
omer@omer:~/Desktop/matalatik$ sudo apt install iproute2
[sudo] password for omer:
Reading package lists... Done
Building dependency tree
Reading state information... Done
iproute2 is already the newest version (5.5.0-1ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 186 not upgraded.
omer@omer:~/Desktop/matalatik$
```

הורדת פאקג' בהתאם למדריך במטלה.

.8

```
omer@omer:~/Desktop/matalatik$ sudo tc qdisc change dev lo root netem loss 10%
omer@omer:~/Desktop/matalatik$ ./Measure
create server
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
avarage time =  0.000339
general time = about 0 seconds
changed to reno algorithm
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
avarage time is=  0.000508
general time is= about 0 seconds
omer@omer:~/Desktop/matalatik$
```

```
omer@omer:~/Desktop/matalatik$ ./sender
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
after changing algorithm to reno
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
omer@omer:~/Desktop/matalatik$
```

איבוד פקטות 10%.

.9

```
omer@omer:~/Desktop/matalatik$ sudo tc qdisc change dev lo root netem loss 15%
omer@omer:~/Desktop/matalatik$ ./Measure
create server
real time is 12 seconds
real time is 0 seconds
real time is 2 seconds
real time is 1 seconds
real time is 2 seconds
avarage time =  0.000279
general time = about 17 seconds
changed to reno algorithm
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
real time is 0 seconds
avarage time is=  0.000302
general time is= about 0 seconds
omer@omer:~/Desktop/matalatik$
```

```
omer@omer:~/Desktop/matalatik$ ./sender
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
after changing algorithm to reno
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
omer@omer:~/Desktop/matalatik$
```

איבוד פקטות 15%.

.10

```
omer@omer:~/Desktop/matalatik$ sudo tc qdisc change dev lo root netem loss 20%
omer@omer:~/Desktop/matalatik$ ./Measure
create server
real time is 3 seconds
real time is 33 seconds
real time is 3 seconds
real time is 1 seconds
real time is 1 seconds
avarage time =  0.000323
general time = about 41 seconds
changed to reno algorithm
real time is 1 seconds
real time is 1 seconds
real time is 1 seconds
real time is 63 seconds
real time is 0 seconds
avarage time is=  0.000367
general time is= about 66 seconds
omer@omer:~/Desktop/matalatik$
```

```
omer@omer:~/Desktop/matalatik$ ./sender
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
after changing algorithm to reno
sending file to the server 1
sending file to the server 2
sending file to the server 3
sending file to the server 4
sending file to the server 5
omer@omer:~/Desktop/matalatik$
```

איבוד פקטות 20%.