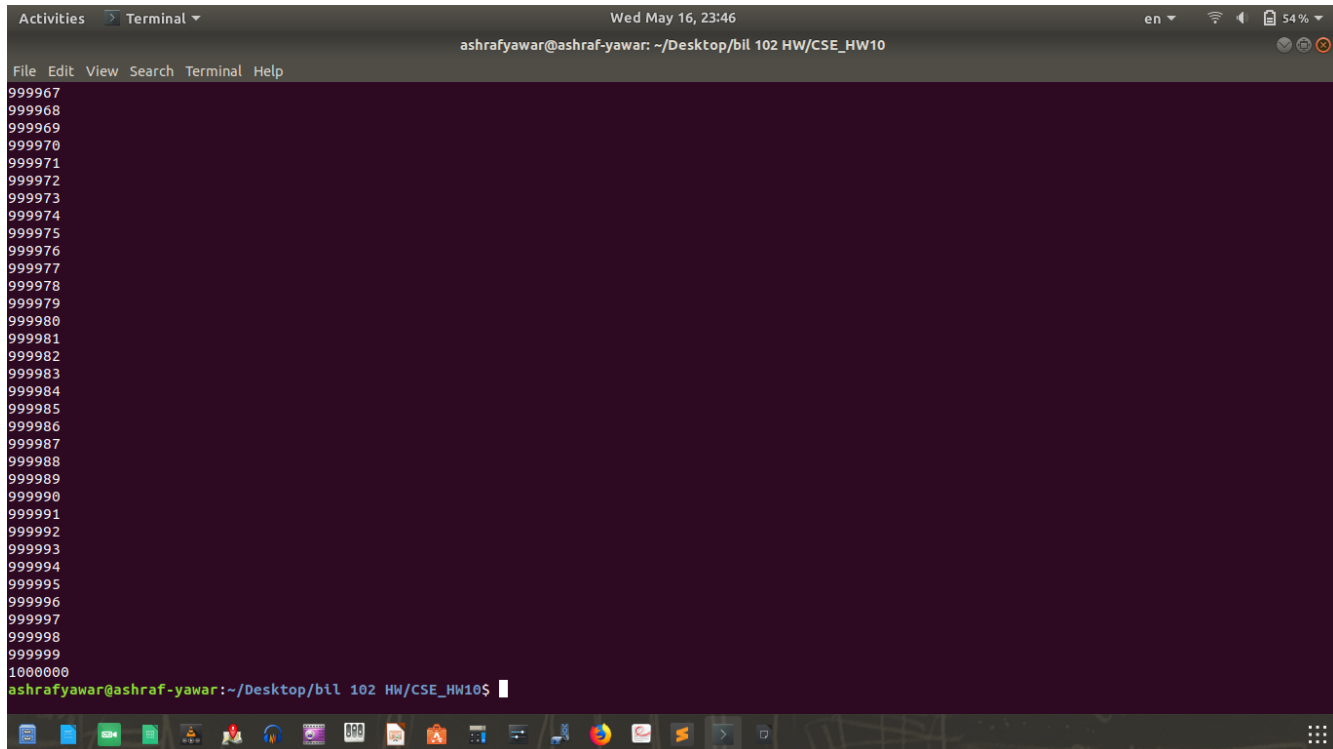


HW10 screen shot with explanations

in this home I has used some usefull functions startinf from the first functions :

in the first part we are asked to write a function which reads a given file a text file and reads it's contents and I read read is by ignoring the after commas in the file and converted them to the intger using (atoi) functions which is available in stdio.h .

>>>

A screenshot of a Linux terminal window. The title bar shows 'Activities', 'Terminal', and the date 'Wed May 16, 23:46'. The terminal window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal content shows a list of numbers from 999967 to 1000000, with the prompt 'ashrafyaware@ashraf-yawar: ~/Desktop/bil 102 HW/CSE_HW10\$' at the bottom. The numbers are listed in a single column, and the prompt is on a new line. The terminal window is titled 'ashrafyaware@ashraf-yawar: ~/Desktop/bil 102 HW/CSE_HW10'.

as you can see the above one reads the file and prints the result on the screen (the function read_file).

In the next step we were asked to write a function which check and prints the prime numbres by using linked list and dynamicly allocates array .i have written two seperate functions one for linked list wich read a structed array which contains the file contents in it ,and finds the prime of them and stores them in an linked list .and the second functions also does almost the same thing but by using dynamic allocated arrays principle.

>>> some of them are >>>

for example for the size 100 the prime nums inside the linked linked lists are >>>

```
Activities Terminal Wed May 16, 23:56 en 49%
ashrafyaware@ashraf-yaware: ~/Desktop/bil 102 HW/CSE_HW10
File Edit View Search Terminal Help
prime numbrs in link_list are >>> 155891
prime numbrs in link_list are >>> 155893
prime numbrs in link_list are >>> 155921
prime numbrs in link_list are >>> 156007
prime numbrs in link_list are >>> 156011
prime numbrs in link_list are >>> 156019
^C
ashrafyaware@ashraf-yaware:~/Desktop/bil 102 HW/CSE_HW10$ gcc a.c -o a
ashrafyaware@ashraf-yaware:~/Desktop/bil 102 HW/CSE_HW10$ ./a
prime numbrs in link_list are >>> 2
prime numbrs in link_list are >>> 3
prime numbrs in link_list are >>> 5
prime numbrs in link_list are >>> 7
prime numbrs in link_list are >>> 11
prime numbrs in link_list are >>> 13
prime numbrs in link_list are >>> 17
prime numbrs in link_list are >>> 19
prime numbrs in link_list are >>> 23
prime numbrs in link_list are >>> 29
prime numbrs in link_list are >>> 31
prime numbrs in link_list are >>> 37
prime numbrs in link_list are >>> 41
prime numbrs in link_list are >>> 43
prime numbrs in link_list are >>> 47
prime numbrs in link_list are >>> 53
prime numbrs in link_list are >>> 59
prime numbrs in link_list are >>> 61
prime numbrs in link_list are >>> 67
prime numbrs in link_list are >>> 71
prime numbrs in link_list are >>> 73
prime numbrs in link_list are >>> 79
prime numbrs in link_list are >>> 83
prime numbrs in link_list are >>> 89
prime numbrs in link_list are >>> 97
ashrafyaware@ashraf-yaware:~/Desktop/bil 102 HW/CSE_HW10$
```

and for dynamicly allocated arary it would be >>>

```
Activities Terminal Wed May 16, 23:59 en 47%
ashrafyaware@ashraf-yaware: ~/Desktop/bil 102 HW/CSE_HW10
File Edit View Search Terminal Help
primes are >>> 67
primes are >>> 71
primes are >>> 73
primes are >>> 79
primes are >>> 83
primes are >>> 89
primes are >>> 97
ashrafyaware@ashraf-yaware:~/Desktop/bil 102 HW/CSE_HW10$ gcc a.c -o a
ashrafyaware@ashraf-yaware:~/Desktop/bil 102 HW/CSE_HW10$ ./a
primes in dynamicly allocated arra are >>> 2
primes in dynamicly allocated arra are >>> 3
primes in dynamicly allocated arra are >>> 5
primes in dynamicly allocated arra are >>> 7
primes in dynamicly allocated arra are >>> 11
primes in dynamicly allocated arra are >>> 13
primes in dynamicly allocated arra are >>> 17
primes in dynamicly allocated arra are >>> 19
primes in dynamicly allocated arra are >>> 23
primes in dynamicly allocated arra are >>> 29
primes in dynamicly allocated arra are >>> 31
primes in dynamicly allocated arra are >>> 37
primes in dynamicly allocated arra are >>> 41
primes in dynamicly allocated arra are >>> 43
primes in dynamicly allocated arra are >>> 47
primes in dynamicly allocated arra are >>> 53
primes in dynamicly allocated arra are >>> 59
primes in dynamicly allocated arra are >>> 61
primes in dynamicly allocated arra are >>> 67
primes in dynamicly allocated arra are >>> 71
primes in dynamicly allocated arra are >>> 73
primes in dynamicly allocated arra are >>> 79
primes in dynamicly allocated arra are >>> 83
primes in dynamicly allocated arra are >>> 89
primes in dynamicly allocated arra are >>> 97
ashrafyaware@ashraf-yaware:~/Desktop/bil 102 HW/CSE_HW10$
```

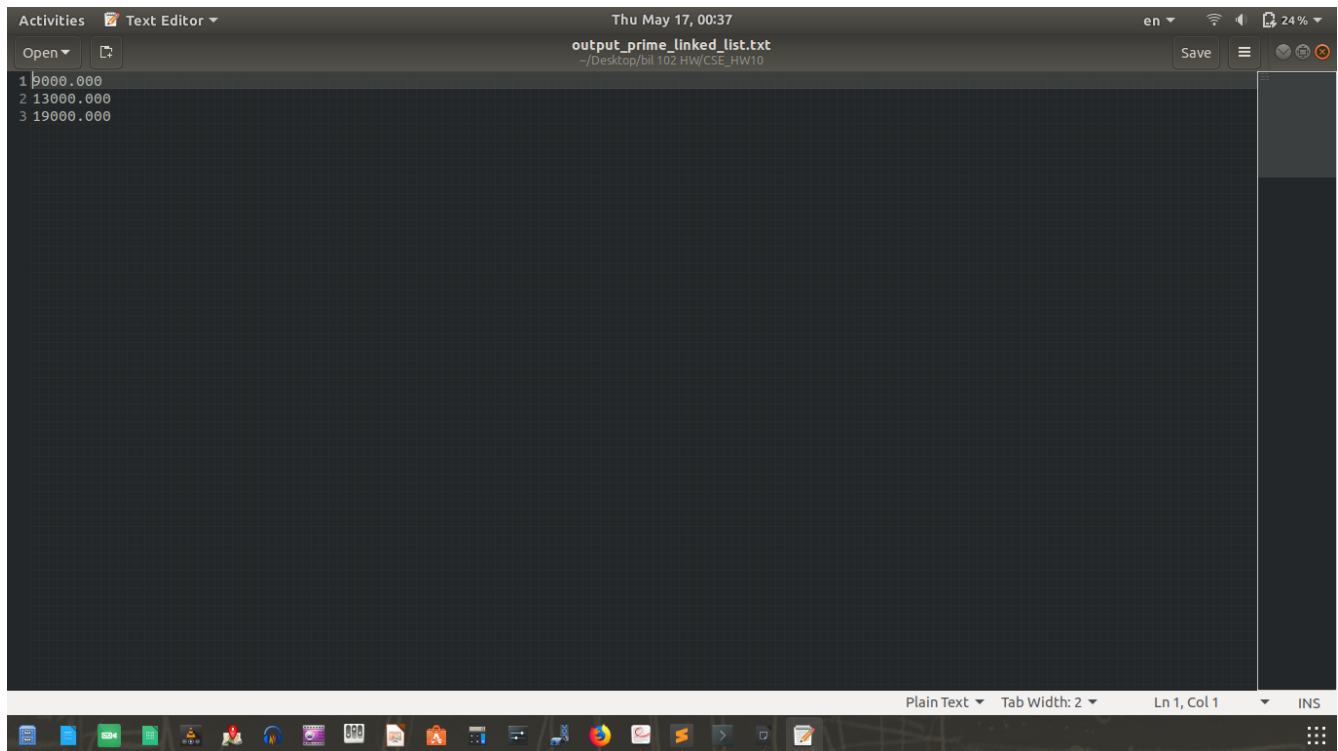
you can put number form 1 till 1000000>>>

in the their part we are asked to find the time taken by some proccess in the souce code which are>>>

a) time taken to copy the data from the linked list to and file between 1 – 500000, 1 – 750000 and 1-1000000 time takens >>>

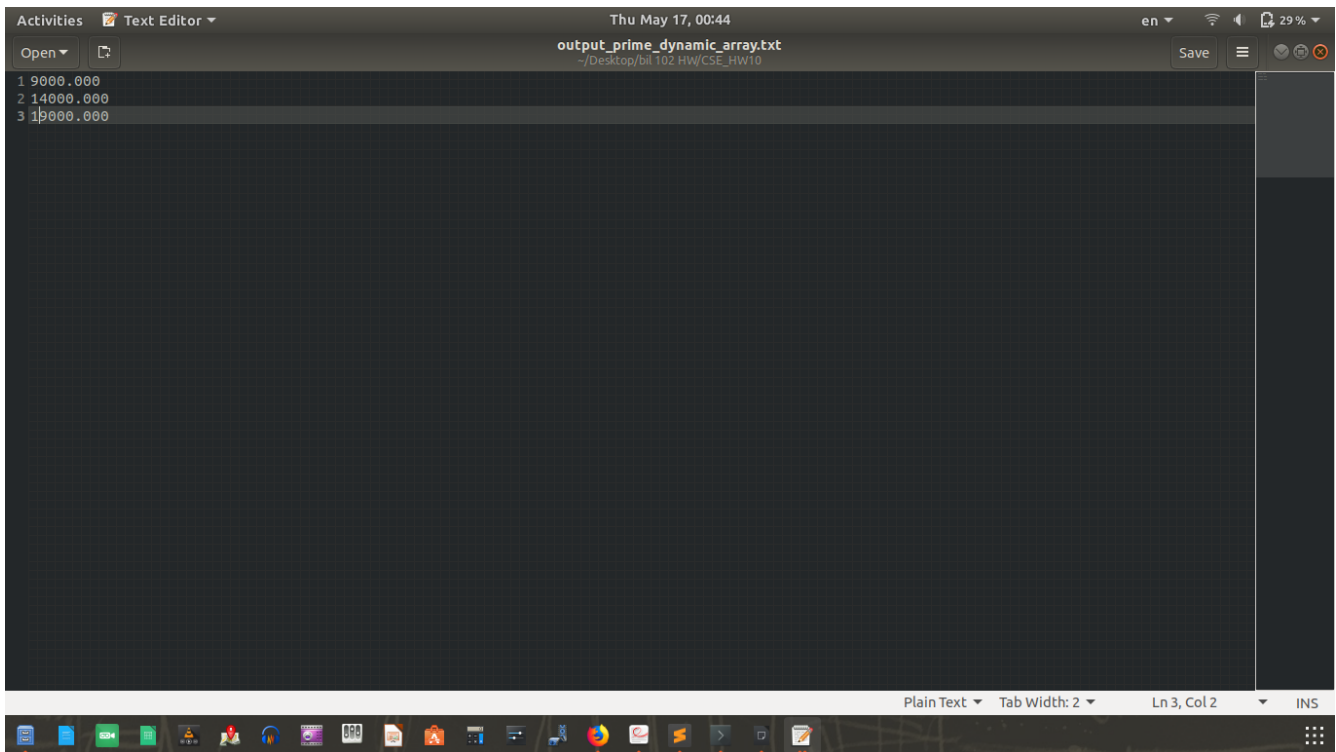
for the linked list these were >>>

1 – 50000, 1 – 60000 and 1-70000 time taken were in the file respectively >>>



```
1 0000.000
2 13000.000
3 19000.000
```

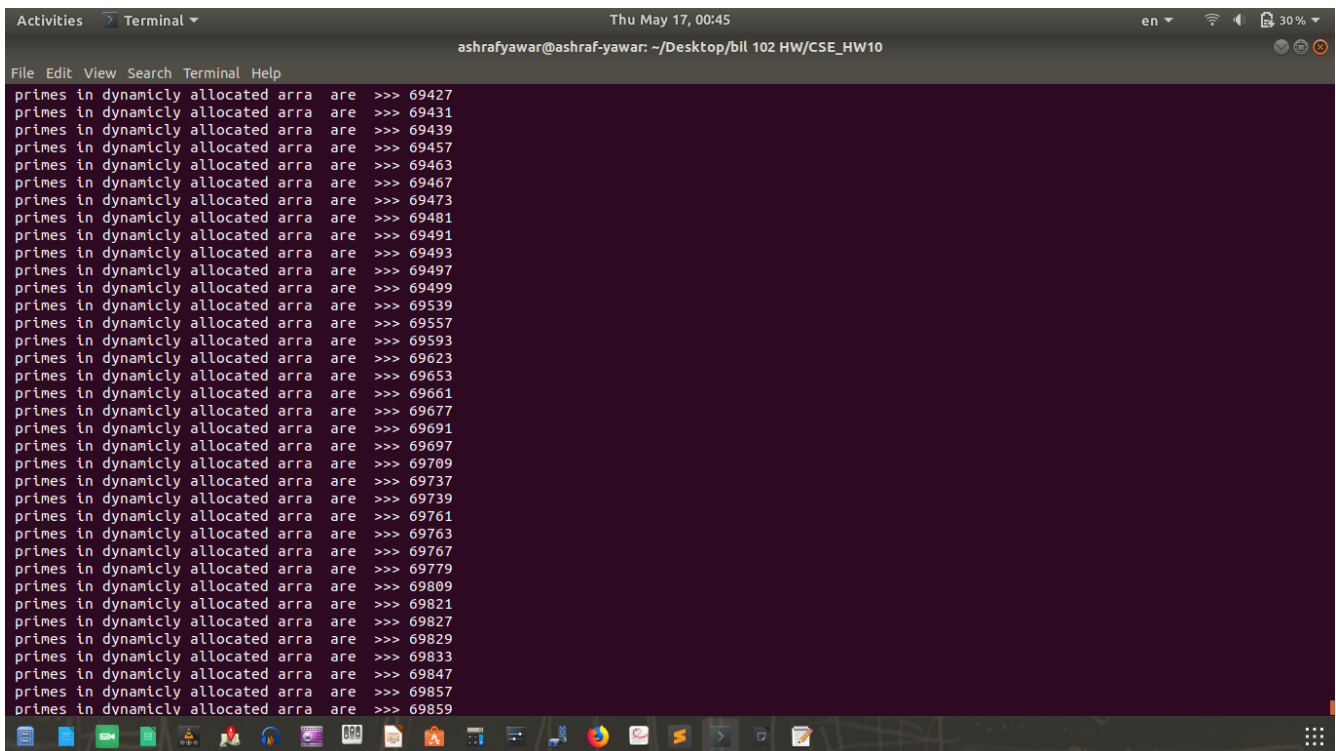
as we can see I chosed here the smal number so that I could get the result quicly but you could use the all desired numbers betwee 1 and 10000000 as well .the time taken between the above interval of numbers are written in the file in three lines respectively>>> and also do not forget that the time is measure in terms of mili second which makes *1000 times of one seconds .the screen shot above is belong to (output_prime_linked_list.txt) and the down one will be for the (output_prime_dynamic_array.txt) >>> which does the same thing and has printed the time taken values in a file for the endicated interval of numbers >>>



The screenshot shows a text editor window titled "output_prime_dynamic_array.txt" with the path "~/Desktop/bil102 HW/CSE_HW10". The editor contains three lines of text: "1 9000.000", "2 14000.000", and "3 19000.000". The status bar at the bottom indicates "Plain Text", "Tab Width: 2", "Ln 3, Col 2", and "INS".

```
1 9000.000
2 14000.000
3 19000.000
```

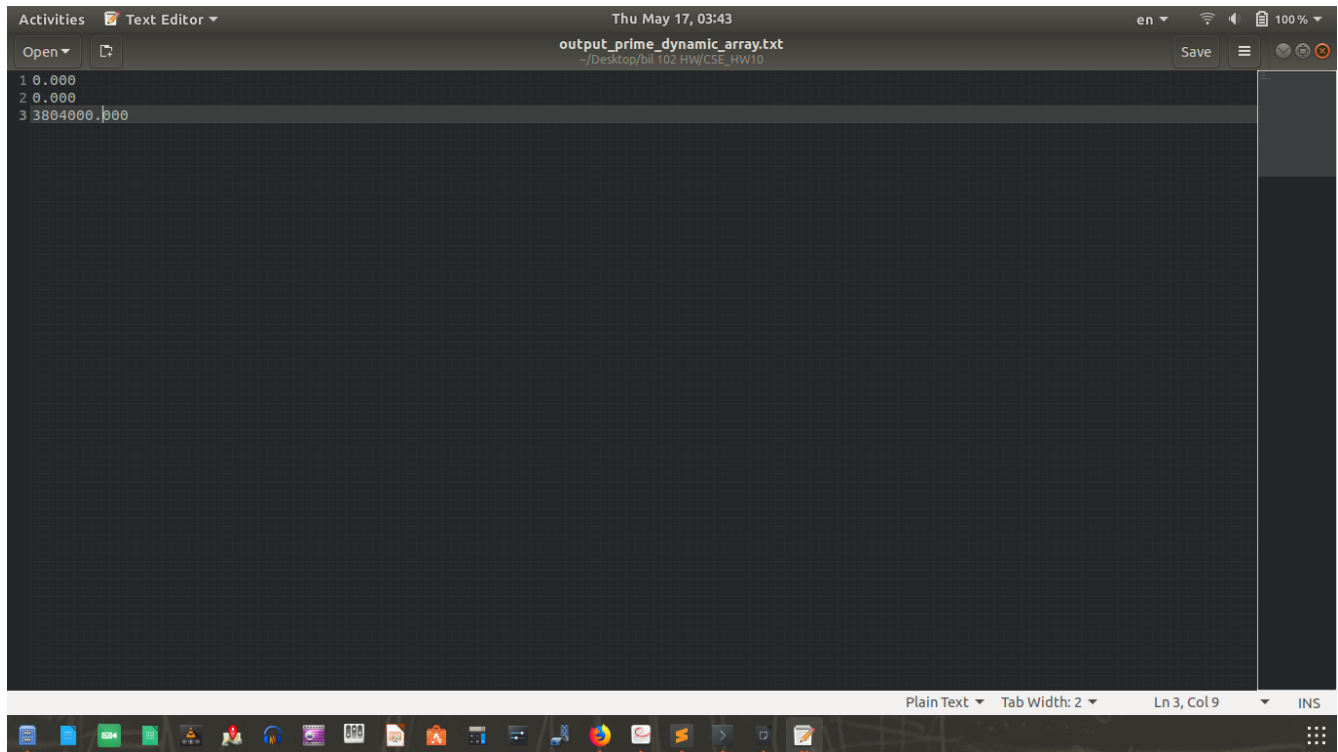
as you can see it also printed in three lines respectively.
And here some more screen shots>>>



The screenshot shows a terminal window with the prompt "ashrafyawar@ashraf-yawar: ~/Desktop/bil 102 HW/CSE_HW10". The terminal displays a list of primes, each followed by the text "primes in dynamically allocated array are" and a memory address. The list starts with 69427 and ends with 69859.

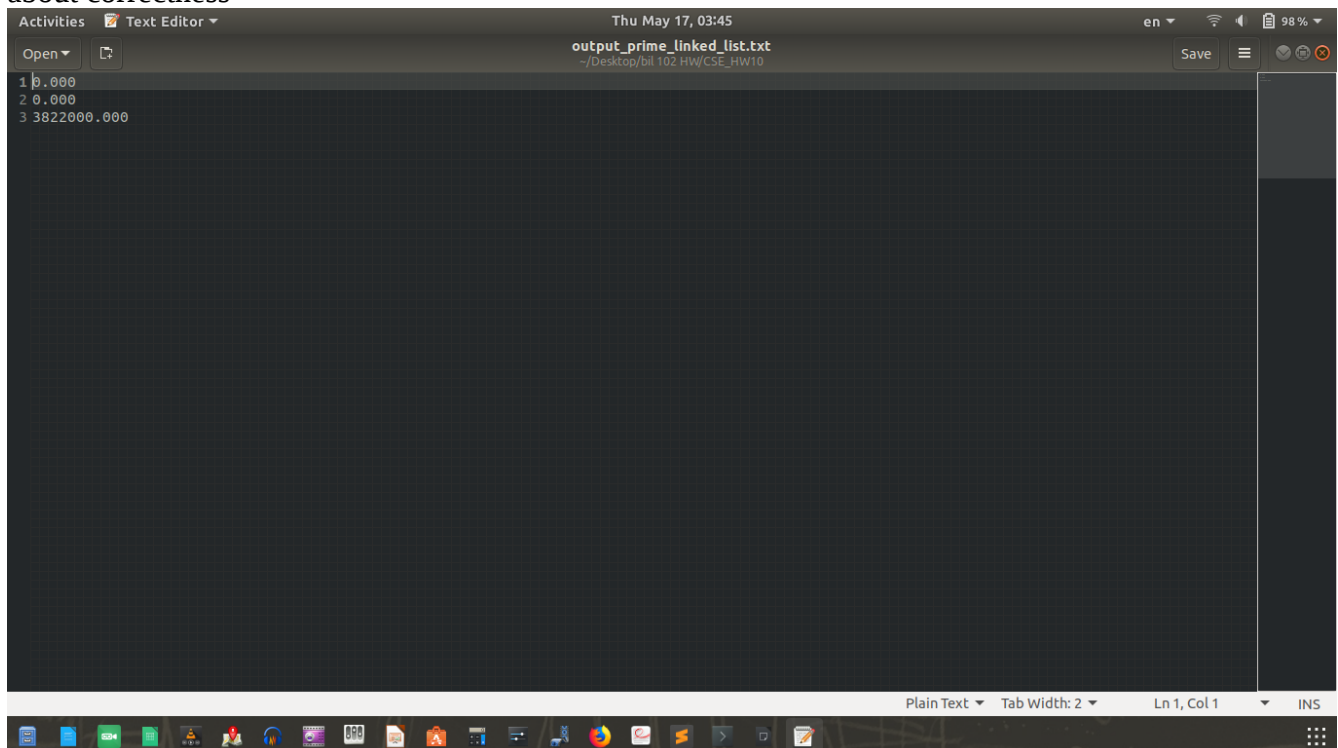
```
primes in dynamically allocated array are >>> 69427
primes in dynamically allocated array are >>> 69431
primes in dynamically allocated array are >>> 69439
primes in dynamically allocated array are >>> 69457
primes in dynamically allocated array are >>> 69463
primes in dynamically allocated array are >>> 69467
primes in dynamically allocated array are >>> 69473
primes in dynamically allocated array are >>> 69481
primes in dynamically allocated array are >>> 69491
primes in dynamically allocated array are >>> 69493
primes in dynamically allocated array are >>> 69497
primes in dynamically allocated array are >>> 69499
primes in dynamically allocated array are >>> 69539
primes in dynamically allocated array are >>> 69557
primes in dynamically allocated array are >>> 69593
primes in dynamically allocated array are >>> 69623
primes in dynamically allocated array are >>> 69653
primes in dynamically allocated array are >>> 69661
primes in dynamically allocated array are >>> 69677
primes in dynamically allocated array are >>> 69691
primes in dynamically allocated array are >>> 69697
primes in dynamically allocated array are >>> 69709
primes in dynamically allocated array are >>> 69737
primes in dynamically allocated array are >>> 69739
primes in dynamically allocated array are >>> 69761
primes in dynamically allocated array are >>> 69763
primes in dynamically allocated array are >>> 69767
primes in dynamically allocated array are >>> 69779
primes in dynamically allocated array are >>> 69809
primes in dynamically allocated array are >>> 69821
primes in dynamically allocated array are >>> 69827
primes in dynamically allocated array are >>> 69829
primes in dynamically allocated array are >>> 69833
primes in dynamically allocated array are >>> 69847
primes in dynamically allocated array are >>> 69857
primes in dynamically allocated array are >>> 69859
```

and this down one shows the time taken to write a file the digists between 1 and 10000000 in the dynamic array the third line >>>



```
1 0.000
2 0.000
3 3804000.000
```

and the down one shows the time taken in the linked list to copy to file the data between 1 and 10000000 in linked list the third line consider the difference of the names of the files to make sure about correctness >>>



```
1 0.000
2 0.000
3 3822000.000
```

