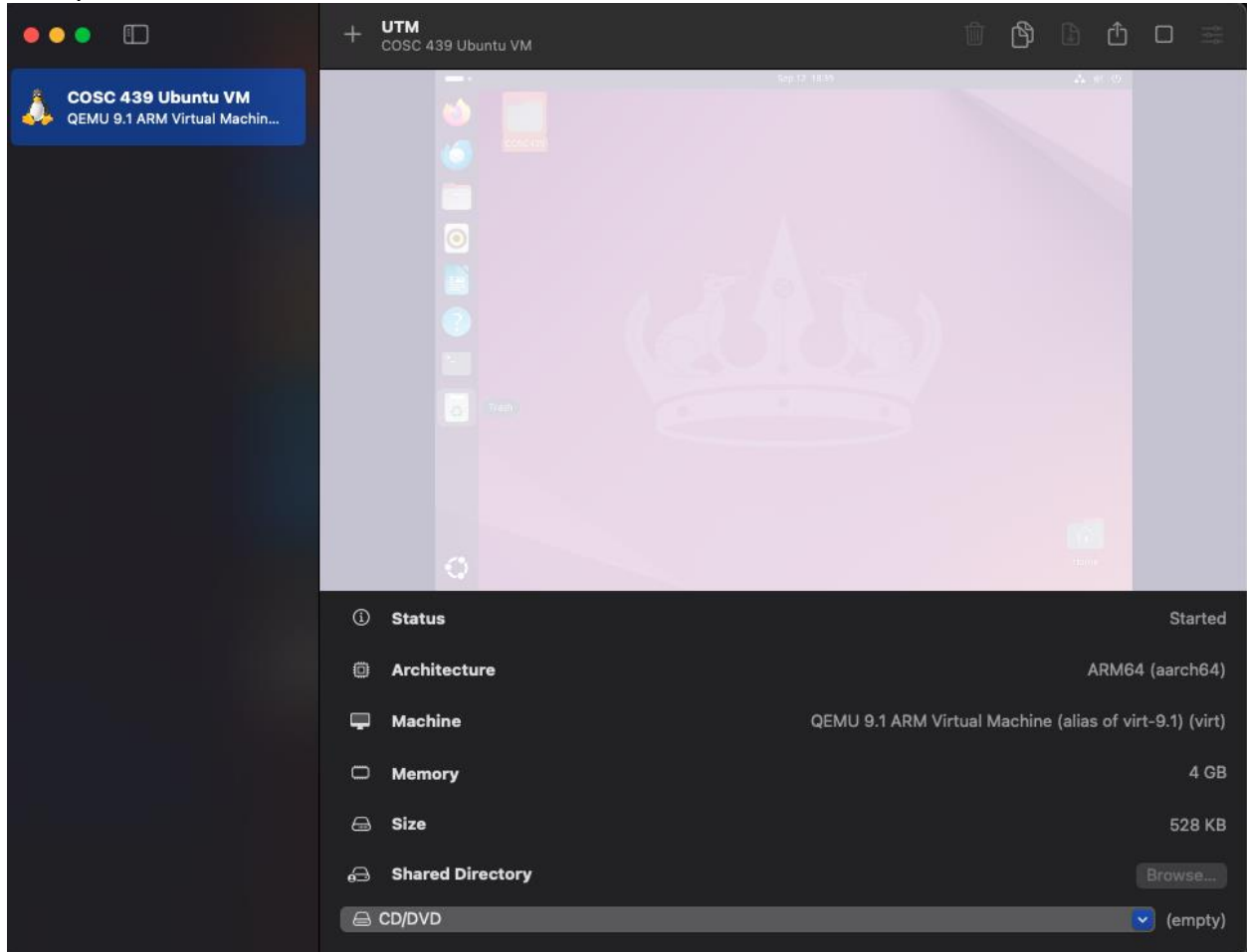
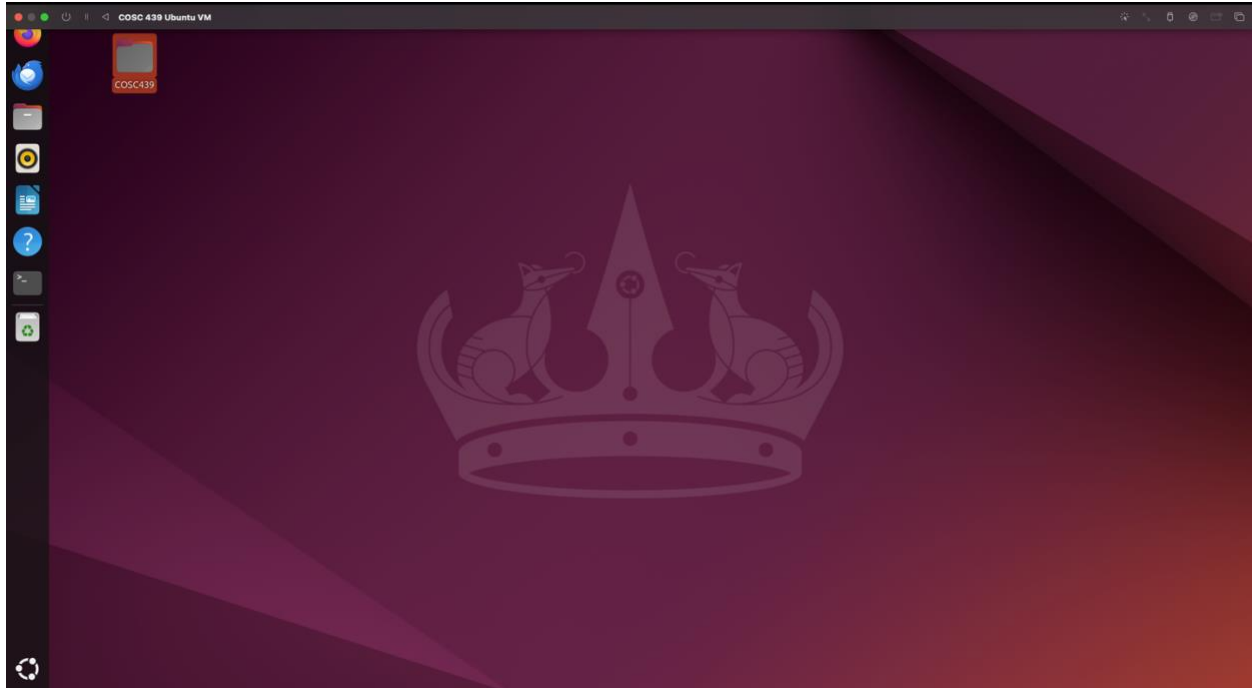


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09/12/2025

Assignment #1

Newly Installed VM:





1. ls

```
ubuntu@ubuntu: ~  
ubuntu@ubuntu:~$ ls  
Desktop Documents Downloads Music Pictures Public Templates Videos snap  
ubuntu@ubuntu:~$
```

Prints out all the directories inside the current directory that I am in

2. pwd

```
ubuntu@ubuntu:~$ pwd  
/home/ubuntu  
ubuntu@ubuntu:~$
```

Prints the path of the current working directory

3. cd Downloads

```
ubuntu@ubuntu:~$ cd Downloads/  
ubuntu@ubuntu:~/Downloads$
```

Switches current working directory to the Downloads subdirectory (and generally helps you switches between directories)

4. top

```

top - 22:06:06 up 11 min, 2 users, load average: 0.20, 0.42, 0.43
Tasks: 215 total, 1 running, 214 sleeping, 0 stopped, 0 zombie
%Cpu(s): 1.3 us, 0.3 sy, 0.0 ni, 98.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 3896.0 total, 159.8 free, 1435.8 used, 2696.0 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used, 2460.2 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM     TIME+ COMMAND
 2029 ubuntu    20   0 5047596 388116 141804 S   4.9   9.7   1:11.62 gnome-shell
 4981 ubuntu    20   0 22000    5256  3208 R   0.7   0.1   0:00.07 top
   867 systemd+  20   0 17596    6616  5848 S   0.3   0.2   0:01.34 systemd-oomd
 1383 polkitd    20   0 310032   9888  7096 S   0.3   0.2   0:01.23 polkitd
 1449 root       20   0 473264  13000 10568 S   0.3   0.3   0:00.75 udisksd
 4931 ubuntu    20   0 571956  54304 43932 S   0.3   1.4   0:03.28 gnome-terminal-
    1 root     20   0 25220    14632  9640 S   0.0   0.4   0:07.86 systemd
    2 root     20   0      0      0      0 S   0.0   0.0   0:00.01 kthreadd
    3 root     20   0      0      0      0 S   0.0   0.0   0:00.00 pool_workqueue_release
    4 root     20  -20      0      0      0 I   0.0   0.0   0:00.00 kworker/R-rcu_gp
    5 root     20  -20      0      0      0 I   0.0   0.0   0:00.00 kworker/R-sync_wq
    6 root     20  -20      0      0      0 I   0.0   0.0   0:00.00 kworker/R-kvfree_rcu_reclaim
    7 root     20  -20      0      0      0 I   0.0   0.0   0:00.00 kworker/R-slub_flushwq
    8 root     20  -20      0      0      0 I   0.0   0.0   0:00.00 kworker/R-netns
   10 root     20   0      0      0      0 I   0.0   0.0   0:00.65 kworker/0:1-events
   11 root     20  -20      0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
   13 root     20  -20      0      0      0 I   0.0   0.0   0:00.00 kworker/R-mm_percpu_wq
   14 root     20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
   15 root     20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
   16 root     20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
   17 root     20   0      0      0      0 S   0.0   0.0   0:00.42 ksoftirqd/0
   18 root     20   0      0      0      0 I   0.0   0.0   0:01.59 rcu_preempt
   19 root     20   0      0      0      0 S   0.0   0.0   0:00.00 rcu_exp_par_gp_kthread_worker/0
   20 root     20   0      0      0      0 S   0.0   0.0   0:00.12 rcu_exp_gp_kthread_worker
   21 root     rt   0      0      0      0 S   0.0   0.0   0:00.02 migration/0

```

Displays all currently running processes along with detailed system and resource usage information

5. `grep "test" test.txt`

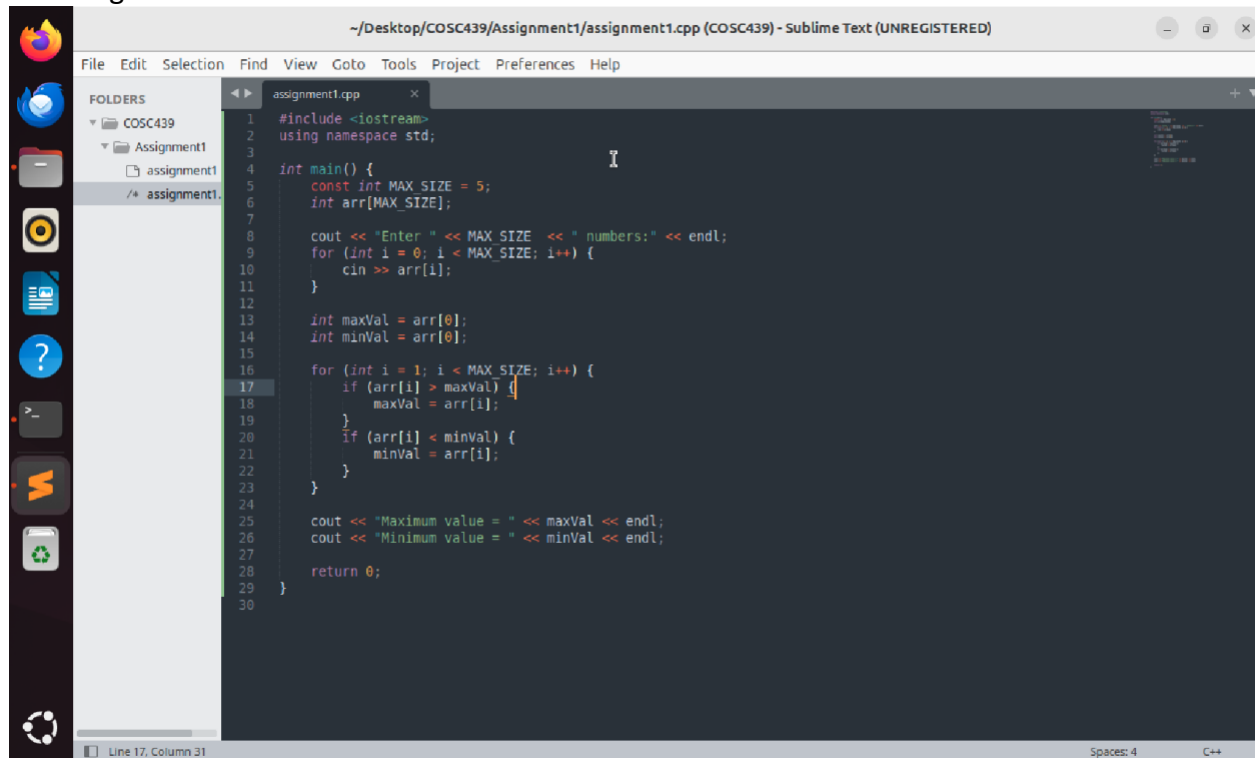
```

ubuntu@ubuntu:~/Downloads$ grep "test" test.txt
test

```

Searches/Greps a file e.g. test.txt for some matching word e.g. 'test' (or regex) and print the matching line(s)

C++ Program:

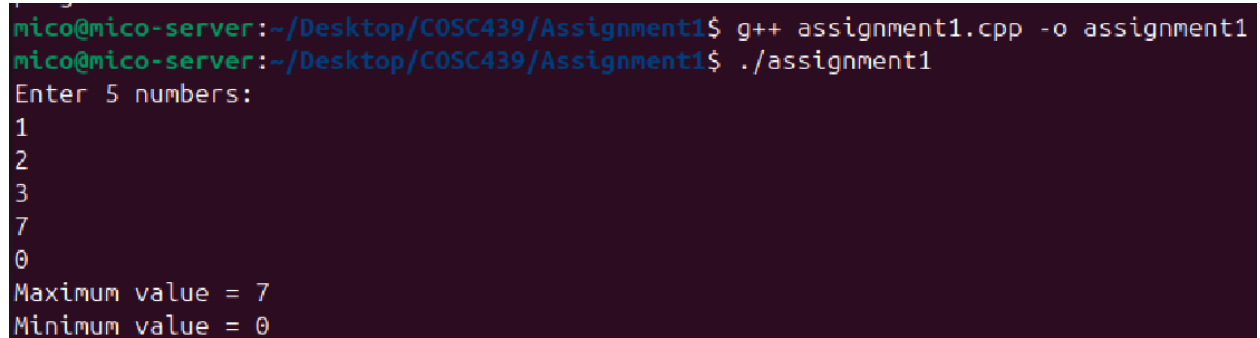


The screenshot shows the Sublime Text editor with a C++ program open. The file is named 'assignment1.cpp' and is located at '~/Desktop/COSC439/Assignment1/assignment1.cpp'. The code is as follows:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     const int MAX_SIZE = 5;
6     int arr[MAX_SIZE];
7
8     cout << "Enter " << MAX_SIZE << " numbers:" << endl;
9     for (int i = 0; i < MAX_SIZE; i++) {
10         cin >> arr[i];
11     }
12
13     int maxVal = arr[0];
14     int minVal = arr[0];
15
16     for (int i = 1; i < MAX_SIZE; i++) {
17         if (arr[i] > maxVal) {
18             maxVal = arr[i];
19         }
20         if (arr[i] < minVal) {
21             minVal = arr[i];
22         }
23     }
24
25     cout << "Maximum value = " << maxVal << endl;
26     cout << "Minimum value = " << minVal << endl;
27
28     return 0;
29 }
```

The status bar at the bottom indicates 'Line 17, Column 31', 'Spaces: 4', and 'C++'.

Results:



The terminal shows the execution of the program. The user enters 5 numbers: 1, 2, 3, 7, and 0. The program outputs the maximum value as 7 and the minimum value as 0.

```
mico@mico-server:~/Desktop/COSC439/Assignment1$ g++ assignment1.cpp -o assignment1
mico@mico-server:~/Desktop/COSC439/Assignment1$ ./assignment1
Enter 5 numbers:
1
2
3
7
0
Maximum value = 7
Minimum value = 0
```