

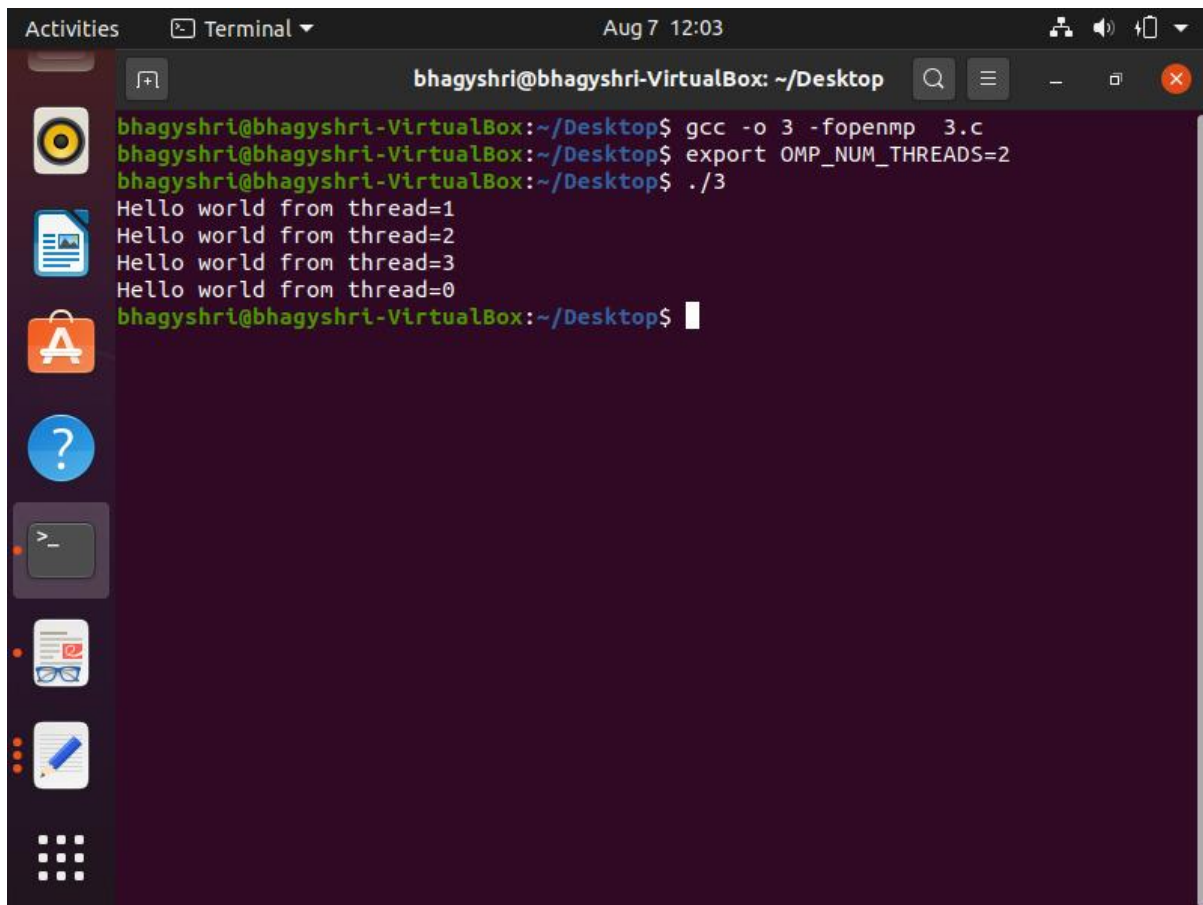
Q1) OUTPUT

```
-pthread
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ gcc -o 1 -fopenmp 1.c
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ export OMP_NUM_THREADS=2
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ ./1
Hello world from thread=0
Number of threads=1
bhagyshri@bhagyshri-VirtualBox:~/Desktop$
```

Q2)output

```
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ gcc -o 2 -fopenmp 2.c
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ export OMP_NUM_THREADS=2
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ ./2
Enter 0: for serial 1: for parallel
0
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ ./2
Enter 0: for serial 1: for parallel
1
Parallel val=1 id= 1
Parallel val=1 id= 0
bhagyshri@bhagyshri-VirtualBox:~/Desktop$
```

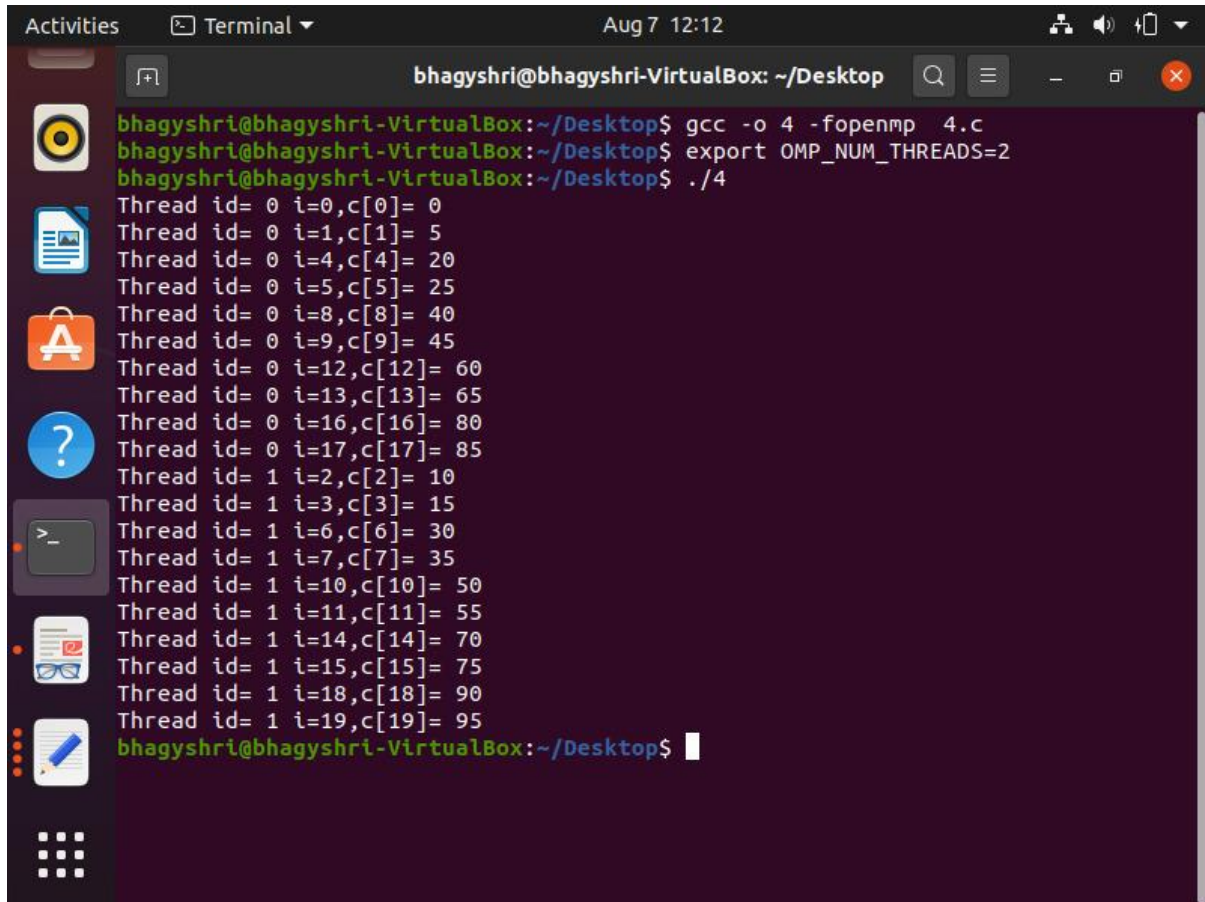
Q3) OUTPUT



A terminal window titled "bhagyshri@bhagyshri-VirtualBox: ~/Desktop" showing the execution of a C program. The user enters the command `gcc -o 3 -fopenmp 3.c`, then `export OMP_NUM_THREADS=2`, and finally `./3`. The program outputs four lines: "Hello world from thread=1", "Hello world from thread=2", "Hello world from thread=3", and "Hello world from thread=0". The terminal window has a dark background and a sidebar with various application icons on the left.

```
bhagyshri@bhagyshri-VirtualBox: ~/Desktop
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ gcc -o 3 -fopenmp 3.c
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ export OMP_NUM_THREADS=2
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ ./3
Hello world from thread=1
Hello world from thread=2
Hello world from thread=3
Hello world from thread=0
bhagyshri@bhagyshri-VirtualBox:~/Desktop$
```

Q4) output with chunk size=2 and Number of threads=2

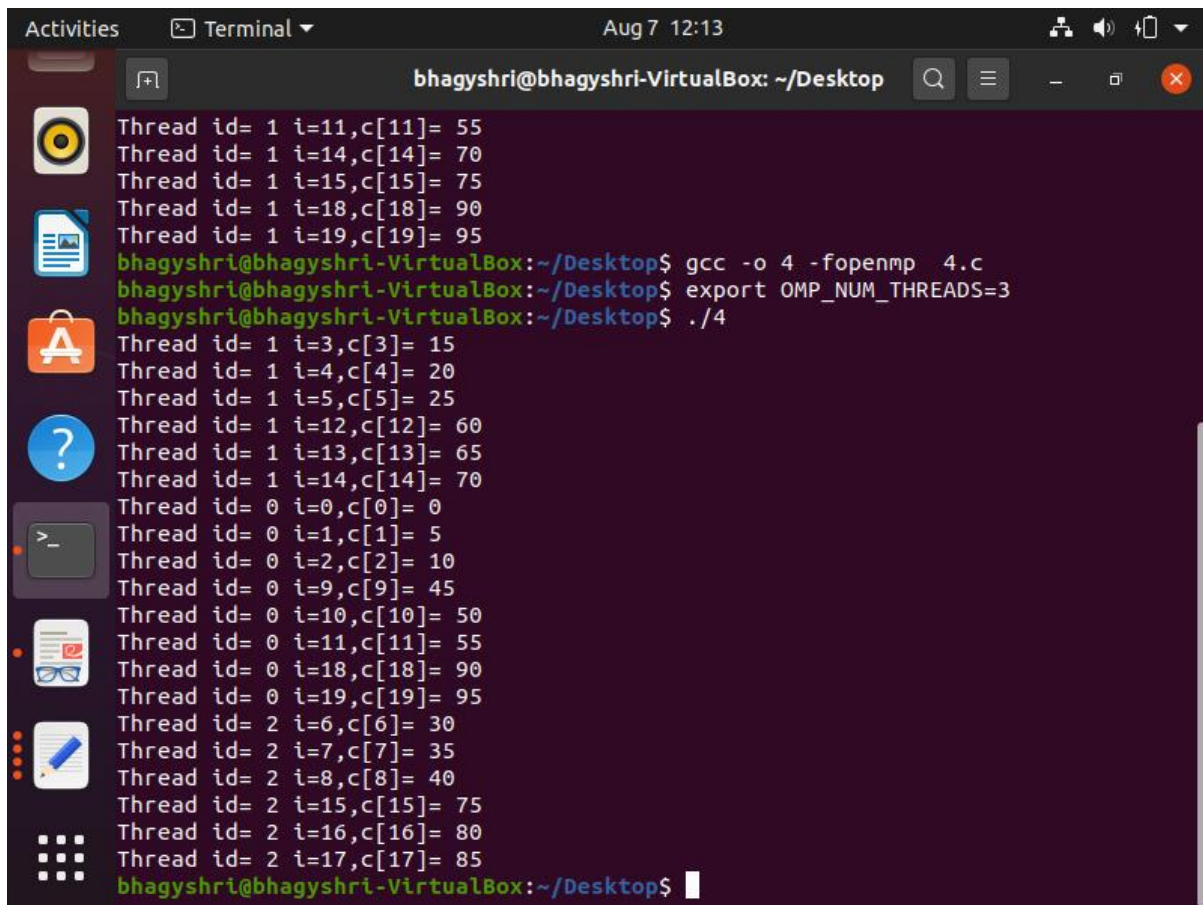


The image shows a terminal window titled "bhagyshri@bhagyshri-VirtualBox: ~/Desktop" with a search bar and window controls. The terminal displays the following commands and output:

```
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ gcc -o 4 -fopenmp 4.c
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ export OMP_NUM_THREADS=2
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ ./4
Thread id= 0 i=0,c[0]= 0
Thread id= 0 i=1,c[1]= 5
Thread id= 0 i=4,c[4]= 20
Thread id= 0 i=5,c[5]= 25
Thread id= 0 i=8,c[8]= 40
Thread id= 0 i=9,c[9]= 45
Thread id= 0 i=12,c[12]= 60
Thread id= 0 i=13,c[13]= 65
Thread id= 0 i=16,c[16]= 80
Thread id= 0 i=17,c[17]= 85
Thread id= 1 i=2,c[2]= 10
Thread id= 1 i=3,c[3]= 15
Thread id= 1 i=6,c[6]= 30
Thread id= 1 i=7,c[7]= 35
Thread id= 1 i=10,c[10]= 50
Thread id= 1 i=11,c[11]= 55
Thread id= 1 i=14,c[14]= 70
Thread id= 1 i=15,c[15]= 75
Thread id= 1 i=18,c[18]= 90
Thread id= 1 i=19,c[19]= 95
bhagyshri@bhagyshri-VirtualBox:~/Desktop$
```

The output shows two threads (id=0 and id=1) processing an array of 20 elements. Thread 0 processes elements at indices 0, 1, 4, 5, 8, 9, 12, 13, 16, and 17. Thread 1 processes elements at indices 2, 3, 6, 7, 10, 11, 14, 15, 18, and 19. The values in the array 'c' are calculated as i^2 .

output with chunk size=3 and Number of threads=3

A terminal window titled "bhagyshri@bhagyshri-VirtualBox: ~/Desktop" showing the execution of a program. The output displays thread IDs and their corresponding values for an array 'c'. The threads are numbered 0, 1, and 2, and the values are grouped by thread. The program was compiled with 'gcc -o 4 -fopenmp 4.c' and executed with 'export OMP_NUM_THREADS=3 ./4'.

```
Aug 7 12:13
bhagyshri@bhagyshri-VirtualBox: ~/Desktop
Thread id= 1 i=11,c[11]= 55
Thread id= 1 i=14,c[14]= 70
Thread id= 1 i=15,c[15]= 75
Thread id= 1 i=18,c[18]= 90
Thread id= 1 i=19,c[19]= 95
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ gcc -o 4 -fopenmp 4.c
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ export OMP_NUM_THREADS=3
bhagyshri@bhagyshri-VirtualBox:~/Desktop$ ./4
Thread id= 1 i=3,c[3]= 15
Thread id= 1 i=4,c[4]= 20
Thread id= 1 i=5,c[5]= 25
Thread id= 1 i=12,c[12]= 60
Thread id= 1 i=13,c[13]= 65
Thread id= 1 i=14,c[14]= 70
Thread id= 0 i=0,c[0]= 0
Thread id= 0 i=1,c[1]= 5
Thread id= 0 i=2,c[2]= 10
Thread id= 0 i=9,c[9]= 45
Thread id= 0 i=10,c[10]= 50
Thread id= 0 i=11,c[11]= 55
Thread id= 0 i=18,c[18]= 90
Thread id= 0 i=19,c[19]= 95
Thread id= 2 i=6,c[6]= 30
Thread id= 2 i=7,c[7]= 35
Thread id= 2 i=8,c[8]= 40
Thread id= 2 i=15,c[15]= 75
Thread id= 2 i=16,c[16]= 80
Thread id= 2 i=17,c[17]= 85
bhagyshri@bhagyshri-VirtualBox:~/Desktop$
```