Question 2:
Kernel memory copy (kernel 2d memcpy())

This code copy the two 2 matrix by using __copy_from_user and copy to_ user() to read data bytes from user space and write back to user space.
In other words, this is a version of memcpy() that relies on the kernel to do the necessary copy operations,
In my artix kernel_linux folder:
We have to change in three places
Firsty, open linux kernel folder and update the sys.c folder by using the code
As show in **Question 2/kernel_2d_memcpy.c**
Secondly, change in **syscall_64.tbl** file at your kernel_linux folder at **arch/x86/entry/syscalls**
And add 451 line like this :

```
448 common  process_mrelease    sys_process_mrelease
449 common  futex_waitv     sys_futex_waitv
450 common  set_mempolicy_home_node sys_set_mempolicy_home_node
451 common  Kernel_2D_memcpy   sys_kernel_2d_memcpy
#
```

Thirdly, agin compile your kernel again and by **make -j$(nproc)** afterthat run
Make modules_install
sudo cp -v arch/x86_64/boot/bzImage /boot/vmlinuz-*
Now , reboot your kernel and
Check your program is running or not by checking run code question2.c
In which i make a hard code of 2D matrix and calling syscall function and copy that matrix to another matrix and checking that matrix is equal or not by passing the matri1, matrix2 in equal function.
And result tell that your process is correct as shown below:

```
| 4.20 |
| 5.20 |
| 8.90 |
Message : Success LHS = RHS
[vickey@vickey assigement2]$ gcc question2.c
[vickey@vickey assigement2]$ ./a.out
Message : System Call 451 successfuly invoked
 1.10  2.10  3.10  4.10  3.40
 5.10  6.10  7.10  7.10  4.30
 2.20  3.20  4.20  5.20  6.50
 2.20  3.20  4.20  5.20  7.60
 2.20  3.20  4.20  5.20  8.90
Message : Success LHS = RHS
[vickey@vickey assigement2]$
```

I uploaded all related file in this folder