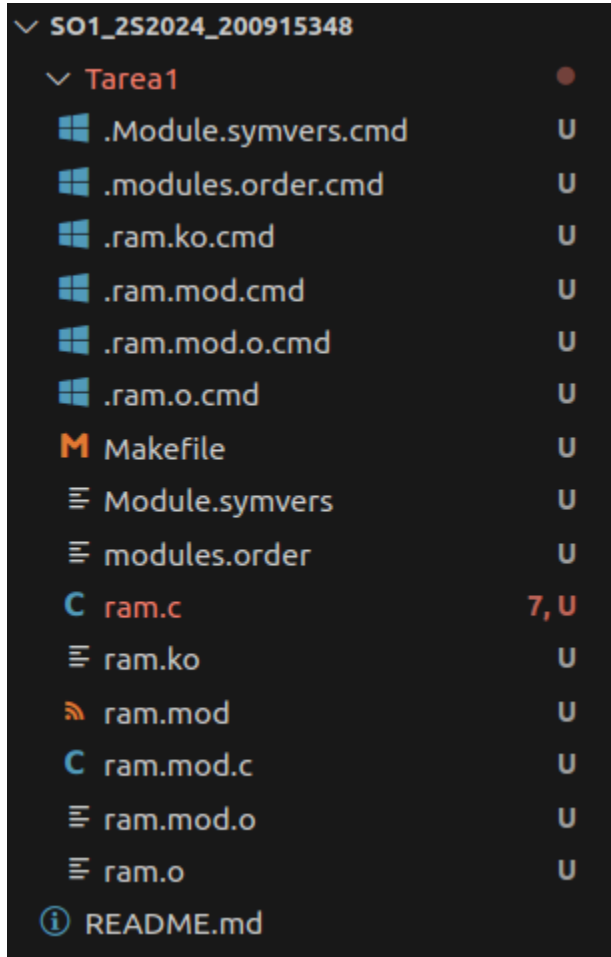


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TAREA 1

Archivos usados ram.c y Make file junto a los archivos generados al compilar



Compilando con el comando make

```
PROBLEMAS 7 SALIDA CONSOLA DE DEPURACIÓN TERMINAL PUERTOS
● kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$ make
make -C /lib/modules/6.5.0-45-generic/build M=/home/kevin/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1 modules
make[1]: se entra en el directorio '/usr/src/linux-headers-6.5.0-45-generic'
warning: the compiler differs from the one used to build the kernel
The kernel was built by: x86_64-linux-gnu-gcc-12 (Ubuntu 12.3.0-1ubuntu1~22.04) 12.3.0
You are using: gcc-12 (Ubuntu 12.3.0-1ubuntu1~22.04) 12.3.0
make[1]: se sale del directorio '/usr/src/linux-headers-6.5.0-45-generic'
○ kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$
```

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Instalando el modulo con sudo insmod ram.ko

```
• kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$ make
make -C /lib/modules/6.5.0-45-generic/build M=/home/kevin/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1 modules
make[1]: se entra en el directorio '/usr/src/linux-headers-6.5.0-45-generic'
warning: the compiler differs from the one used to build the kernel
The kernel was built by: x86_64-linux-gnu-gcc-12 (Ubuntu 12.3.0-1ubuntu1-22.04) 12.3.0
You are using: gcc-12 (Ubuntu 12.3.0-1ubuntu1-22.04) 12.3.0
make[1]: se sale del directorio '/usr/src/linux-headers-6.5.0-45-generic'
• kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$ sudo insmod ram.ko
• kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$
```

Para ver los logs del kernel con el modulo instalado

```
• kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$ sudo insmod ram.ko
• kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$ sudo dmesg | tail -n 20
[13883.808485] ata2: SATA link up 6.0 Gbps (SStatus 133 SControl 300)
[13883.808506] ata2.00: Entering active power mode
[13883.972195] ata2.00: configured for UDMA/133
[13884.267975] RTL8208 Fast Ethernet r8169-0-300:00: attached PHY driver (mii_bus:phy_addr=r8169-0-300:00, irq=MAC)
[13884.558444] r8169 0000:03:00.0 enp3s0: Link is Down
[13884.571875] iwlmwifi 0000:02:00.0: Applying debug destination EXTERNAL_DRAM
[13884.650060] iwlmwifi 0000:02:00.0: Applying debug destination EXTERNAL_DRAM
[13884.651678] iwlmwifi 0000:02:00.0: FW already configured (0) - re-configuring
[13888.323128] wlp2s0: authenticate with a4:15:88:a3:3f:00
[13888.323143] wlp2s0: 80 MHz not supported, disabling VHT
[13888.328080] wlp2s0: send auth to a4:15:88:a3:3f:00 (try 1/3)
[13888.331782] wlp2s0: authenticated
[13888.331909] wlp2s0: associating to AP a4:15:88:a3:3f:00 with corrupt probe response
[13888.332326] wlp2s0: associate with a4:15:88:a3:3f:00 (try 1/3)
[13888.336449] wlp2s0: RX AssocResp from a4:15:88:a3:3f:00 (capab=0xc31 status=0 aid=1)
[13888.337798] wlp2s0: associated
[13934.880325] sysinfo module unloaded
[14254.064510] audit: type=1400 audit(1723259995.571:99): apparmor="ALLOWED" operation="open" class="file" profile="libreoffice-soffice" name="/usr/s
hare/zoneinfo-icu/44/le/zoneinfo64.res" pid=15925 comm="soffice.bin" requested_mask="r" denied_mask="r" fsuid=1000 ouid=0
[14254.066618] audit: type=1400 audit(1723259995.571:100): apparmor="ALLOWED" operation="open" class="file" profile="libreoffice-soffice" name="/usr/
share/zoneinfo-icu/44/le/timezoneTypes.res" pid=15925 comm="soffice.bin" requested_mask="r" denied_mask="r" fsuid=1000 ouid=0
[14312.688741] sysinfo module loaded
• kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$
```

Mostrando la salida del modulo con la linea de comandos cat /proc/sysinfo

* Información de Ram total y Ram libre y el primer proceso padre con algunos hijos

```
kevin@kevin-Inspiron-5567: ~
kevin@kevin-Inspiron-5567:~$ cat /proc/sysinfo
Total RAM: 16264424 KB
Free RAM: 7484940 KB
Number of processes: 4
{
  {
    "PID": 1,
    "Name": "systemd",
    "RSS": 12689408,
    "UID": 0,
    "Children": [
      {
        "PID": 232,
        "Name": "systemd-journal",
        "RSS": 80048128,
        "UID": 0
      },
      {
        "PID": 301,
        "Name": "systemd-udevd",
        "RSS": 8376320,
        "UID": 0
      },
      {
        "PID": 735,
        "Name": "systemd-oomd",
        "RSS": 6987776,
        "UID": 108
      },
      {
        "PID": 745,
```

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* Otro proceso padre y algunos de sus hijos

```

[+] kevin@kevin-Inspiron-5567: ~
RSS: 1531904,
"UID": 123
},
{
  "PID": 16557,
  "Name": "fwupd",
  "RSS": 34504704,
  "UID": 0
},
]
},
{
  "PID": 2,
  "Name": "kthreadd",
  "RSS": null,
  "UID": 0,
  "Children": [
    {
      "PID": 3,
      "Name": "rcu_gp",
      "RSS": null,
      "UID": 0
    },
    {
      "PID": 4,
      "Name": "rcu_par_gp",
      "RSS": null,
      "UID": 0
    },
    {
      "PID": 5,
      "Name": "slub_flusher",

```

Ultimos procesos

```

kevin@kevin-Inspiron-5567: ~
{"PID": 17578,
 "Name": "org.gnome.Chara",
 "RSS": 46444544,
 "UID": 1000,
 "Children": [
 ]
},
{
 "PID": 17634,
 "Name": "bash",
 "RSS": 5505024,
 "UID": 1000,
 "Children": [
 {
 "PID": 17646,
 "Name": "cat",
 "RSS": 1966080,
 "UID": 1000
 }
 ],
 },
 {
 "PID": 17646,
 "Name": "cat",
 "RSS": 1966080,
 "UID": 1000,
 "Children": [
 ]
 },
 ]
}
kevin@kevin-Inspiron-5567: ~$

```

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Eliminación del modulo con sudo rmmod ram.ko

```
[14512:000741] sysinfo module loaded  
● kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$ sudo rmmod ram.ko  
○ kevin@kevin-Inspiron-5567:~/Documentos/2S2024/Sopes1/Lab/S01_2S2024_200915348/Tarea1$
```

Enlace a repositorio github:

https://github.com/kmsu/SO1_2S2024_200915348/tree/main/Tarea1