**Second Step Analysis (Kernel)**

**Sources used:**

# 1-Create Your Own Operating System (OS) – Kernel (<https://www.youtube.com/watch?v=4hJDOvwbTZs>)

2-<https://github.com/pritamzope/OS>

3-<https://www.cyberciti.biz/tips/compiling-linux-kernel-26.html>

4-<https://arjunsreedharan.org/post/82710718100/kernels-101-lets-write-a-kernel>

5-<https://wiki.ubuntu.com/Kernel/BuildYourOwnKernel>

6- <https://arjunsreedharan.org/post/82710718100/kernels-101-lets-write-a-kernel>

7- <https://www.instructables.com/id/Make-A-Simple-Operating-System/>

**Used tools:**

1-GNU GRUB (Linux mint)

2- Gcc (assembly language)

3- xorriso (creates, loads, manipulates ISO)

4- Grub-mkrescue (this package internally calls the xorriso functionality to build an iso image.)

5- Qemu (Emulator to boot our kernel in virtual machine)

**The result:**

1-Install xorriso and qemu

2-The Gcc must be version 7.4.0 or more

3-Creation folder called MyOS

4- creation document on MyOS folder called boot.s

5- creation document on MyOS folder called linker.ld

6- creation document on MyOS folder called **grub.cfg**

7- creation document on MyOS folder called **kernel.h**

8- creation document on MyOS folder called **kernel.c**

9- creation document on MyOS folder called **run.sh**

10- Run all of these documents by command (sh run.sh)

**Sources of the previous steps :**

**1-Create Your Own Operating System (OS) – Kernel** (<https://www.youtube.com/watch?v=4hJDOvwbTZs>)

**2-(**<https://www.codeproject.com/Articles/1225196/Create-Your-Own-Kernel-In-C-2>**)**

**Implementation**:

Qemu and xorriso are installed, MyOS folder is created and the following documents are created:( boot.s , linker.ld , **grub.cfg ,** **kernel.h ,** **kernel.c , run.sh**).

**Team Giants: Huda && Nour**