Class LAB – create a new system call (MIPS)

1. open a terminal window

2. edit the file /opt/run_eclipse : change the path to /opt/mipssystem/toolchain/bin

3. run the script , close the welcome screen, uncheck project->build automatically

4. create a new makefile project: select new C project -> select the makefile project folder -> add name and click finish

5. import all the kernel source files: select file->import -> file system -> select the folder "/opt/mipssystem/kernelsource/linux-2.6.16.51" -> select all

6. edit the file "include/asm/unistd.h" , add a new system call number and update the total system calls count constants (2)

7. edit the file "include/linux/syscall.h" , add a prototype for the following function:

```
asmlinkage long sys_add(int x,int y)
{
        return x+y;
}
```

8. edit the file "kernel/exit.c", add the above function

9. edit the file "arch/mips/kernel/scall32-o32.S: add a new entry to the system calls table

10. build the kernel , copy the file to the output directory (/opt/mipsystem/output)

11. create a test project to call the system call
    a. using syscall
    b. using _syscall2 macro
    c. using inline assembly

12. copy the test application to "/opt/mipssystem/rootfs"

13. run the emulator:

```
cd /opt/mipssystem/output
./run_qemu2
```

14. test your work