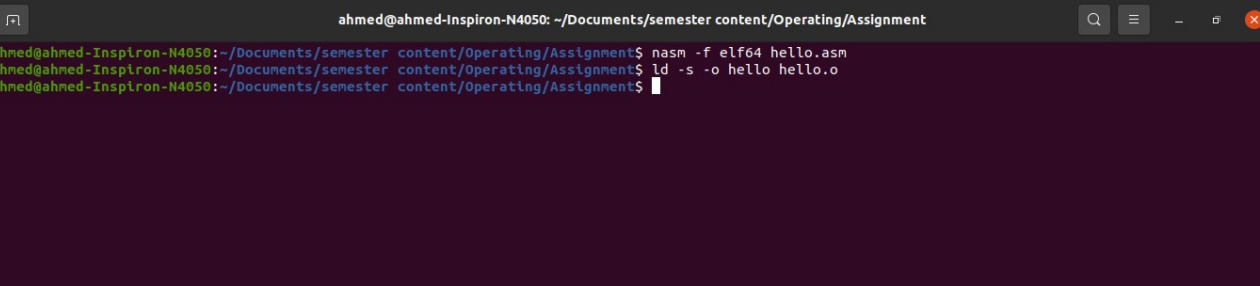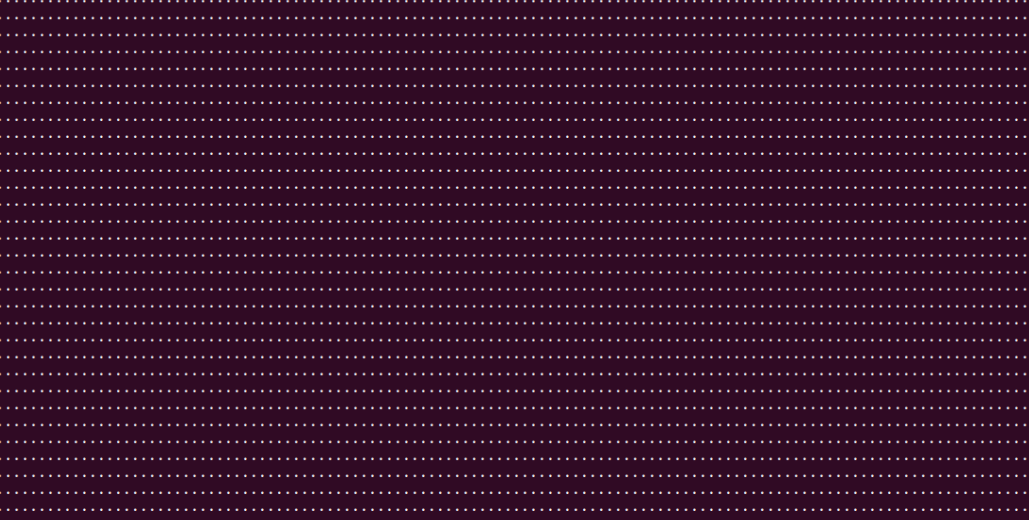Name: Ahmed Ali
Section: CS-4B
Roll No: P19-0042

```
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ nasm -f elf64 hello.asm
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ ld -s -o hello hello.o
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$
```

```
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$
```

```
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ time ./hello > /dev/null

real    0m0.351s
user    0m0.195s
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$
```

```
  command 'imv' from deb renameutils (0.12.0-7)
  command 'time' from deb time (1.7-25.1build1)

See 'snap info <snapname>' for additional versions.

ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ time ./hello > /dev/null

real    0m0.351s
user    0m0.195s
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Asahmed@ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment
$
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ nasm -f elf64 -o hello.o hello.asm
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ nasm -f elf64 -o hello2.o hello2.asm
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ ld -s -o hello hello.o
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ ld -s -o hello2 hello2.o
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ chmod +x runner.sh
chmod: cannot access 'runner.sh': No such file or directory
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$ chmod +x runner.sh
ahmed@ahmed-Inspiron-N4050:~/Documents/semester content/Operating/Assignment$
```

Number of experiments run: N = 50

Average 'user time' for hello (int-based calls): I = 0.19264s

Average 'user time' for hello2 (syscall-based calls): S =0.13914s

Percentage speedup: (I-S)*100/I =27.7720