King Abdul Aziz University
EE-463
LAB-1
25-3-2023

OPERATION SYSTEMS

LAB_1

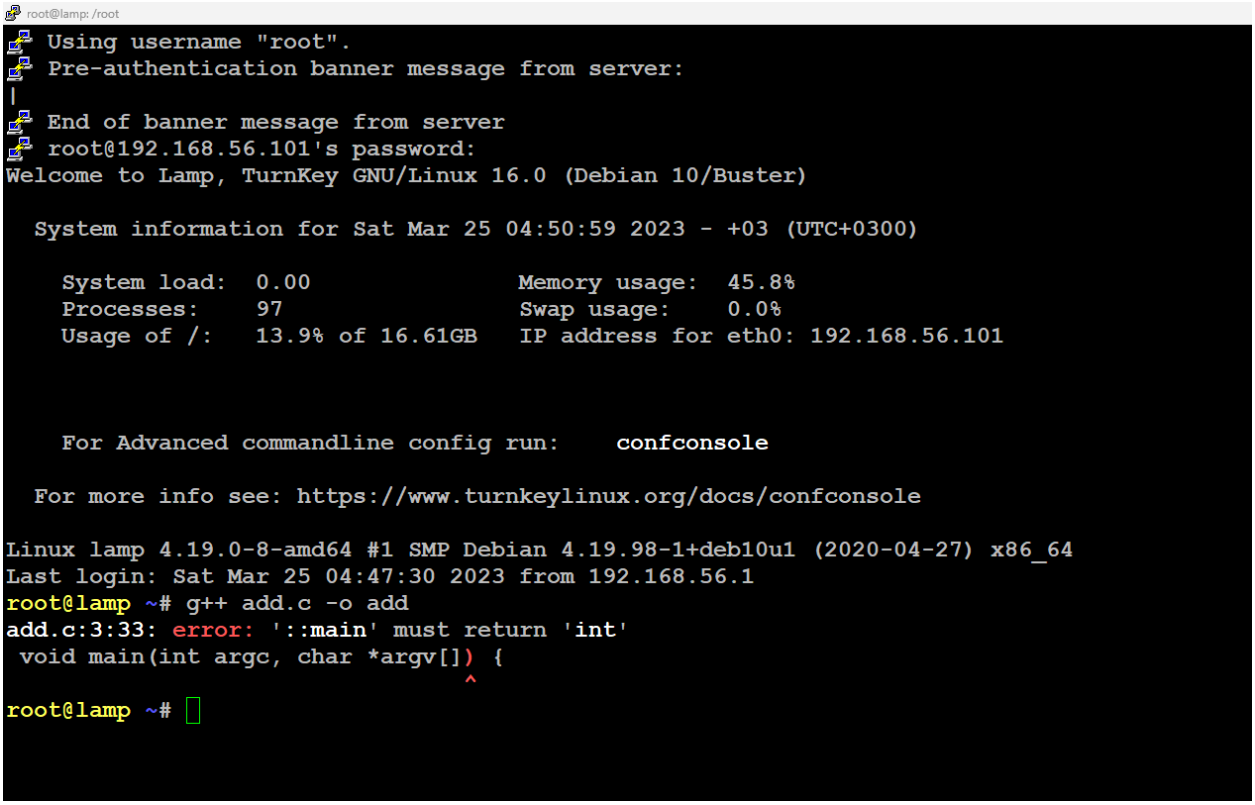
Omar alahamdi_1936683

```
Linux lamp 4.19.0-8-amd64 #1 SMP Debian 4.19.98-1+deb10u1 (2020-04-27) x86_64
omar_alahmadi@lamp ~$ g++ add.c -o add
g++: error: add.c: No such file or directory
g++: fatal error: no input files
compilation terminated.
omar_alahmadi@lamp ~$
```

root@lamp: /root

```
#include <stdlib.h>
#include <studio.h>
void main(int argc, char *argv[]) {
int a,b,c;
a=atoi(argv[1]);
b=atoi(argv[2]);
printf("a,b = %d %d \n", argv[1], argv[2]);
c=a+b;
printf(" c = %d \n",c);
}
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
"add.c" [noeol][dos] 10L, 206C
```

```
#include <stdlib.h>
#include <stdio.h>
void main(int argc, char *argv[]) {
int a,b,c;
a=atoi(argv[1]);
b=atoi(argv[2]);
printf("a,b = %d %d \n", argv[1], argv[2]);
c=a+b;
printf(" c = %d \n",c);
}
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
```


root@lamp: /root
Using username "root".
Pre-authentication banner message from server:
End of banner message from server
root@192.168.56.101's password:
Welcome to Lamp, TurnKey GNU/Linux 16.0 (Debian 10/Buster)
System information for Sat Mar 25 04:50:59 2023 - +03 (UTC+0300)
System load: 0.00
Memory usage: 45.8%
Processes: 97
Swap usage: 0.0%
Usage of /: 13.9% of 16.61GB
IP address for eth0: 192.168.56.101
For Advanced commandline config run: confconsole
For more info see: https://www.turnkeylinux.org/docs/confconsole
Linux lamp 4.19.0-8-amd64 #1 SMP Debian 4.19.98-1+deb10u1 (2020-04-27) x86_64
Last login: Sat Mar 25 04:47:30 2023 from 192.168.56.1
root@lamp ~# g++ add.c -o add
add.c:3:33: error: '::main' must return 'int'
void main(int argc, char *argv[]) {
^
root@lamp ~#

```
Linux lamp 4.19.0-8-amd64 #1 SMP Debian 4.19.98-1+deb10u1 (2020-04-27) x86_64
Last login: Sat Mar 25 04:47:30 2023 from 192.168.56.1
root@lamp ~# g++ add.c -o add
add.c:3:33: error: '::main' must return 'int'
 void main(int argc, char *argv[]) {
                                 ^
root@lamp ~# gcc add.c -o add
root@lamp ~# ./add 1076 764
a,b = -779589567 -779589562
 c = 1840
root@lamp ~#


    System load:  0.00               Memory usage:  45.1%
    Processes:    95                 Swap usage:    0.0%
    Usage of /:   13.9% of 16.61GB   IP address for eth0: 192.168.56.101



    For Advanced commandline config run:    confconsole

  For more info see: https://www.turnkeylinux.org/docs/confconsole

Linux lamp 4.19.0-8-amd64 #1 SMP Debian 4.19.98-1+deb10u1 (2020-04-27) x86_64
Last login: Sat Mar 25 04:12:12 2023 from 192.168.56.1
root@lamp ~# Error writing session log (raw mode) to file: putty.log
root@lamp ~# adduser OmarAlahmadi
adduser: Please enter a username matching the regular expression configured
via the NAME_REGEX configuration variable.  Use the `--force-badname'
option to relax this check or reconfigure NAME_REGEX.
root@lamp ~# adduser omar_alahmadi
Adding user `omar_alahmadi' ...
Adding new group `omar_alahmadi' (1000) ...
Adding new user `omar_alahmadi' (1000) with group `omar_alahmadi' ...
Creating home directory `/home/omar_alahmadi' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for omar_alahmadi
Enter the new value, or press ENTER for the default
        Full Name []: omar alahmadi
        Room Number []: 1
        Work Phone []: 056
        Home Phone []: 2
        Other []: non
Is the information correct? [Y/n] y
root@lamp ~#
```

1.1

```
omar_alahmadi@lamp ~$ % ls -a
-bash: fg: %: no such job
omar_alahmadi@lamp ~$ ls -a
.    .add.c.swp      .bash_logout   .bashrc.d   .profile     .sdirs
..   .bash_history   .bashrc        .penv       .profile.d   .ssh
omar_alahmadi@lamp ~$
```

1.2

```
omar_alahmadi@lamp ~$ mkdir unixstuff
omar_alahmadi@lamp ~$ ls
unixstuff
omar_alahmadi@lamp ~$
```

1.3

```
omar_alahmadi@lamp ~$ cd unixstuff
omar_alahmadi@lamp ~/unixstuff$ 1s
-bash: 1s: command not found
omar_alahmadi@lamp ~/unixstuff$ mkdir another
omar_alahmadi@lamp ~/unixstuff$ 1s
-bash: 1s: command not found
omar_alahmadi@lamp ~/unixstuff$ 1s -a
-bash: 1s: command not found
omar_alahmadi@lamp ~/unixstuff$ ls
another
```

1.4

```
omar_alahmadi@lamp ~/unixstuff$ cd .
omar_alahmadi@lamp ~/unixstuff$ cd ..
omar_alahmadi@lamp ~$
```

1.5

```
omar_alahmadi@lamp ~$ pwd
/home/omar_alahmadi
omar_alahmadi@lamp ~$ ls
unixstuff
omar_alahmadi@lamp ~$ cd unixstuff
omar_alahmadi@lamp ~/unixstuff$ pwd
/home/omar_alahmadi/unixstuff
omar_alahmadi@lamp ~/unixstuff$ cd
omar_alahmadi@lamp ~$
```

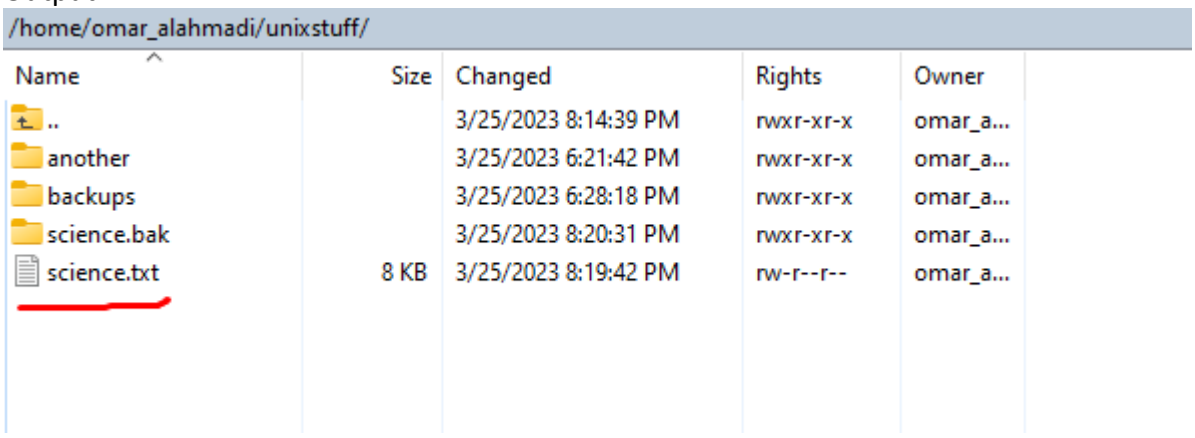
1.6

```
omar_alahmadi@lamp ~$ ls unixstuff
another
omar_alahmadi@lamp ~$ cd unixstuff
omar_alahmadi@lamp ~/unixstuff$ mkdir backups
omar_alahmadi@lamp ~/unixstuff$ ls backups
omar_alahmadi@lamp ~/unixstuff$ cd
omar_alahmadi@lamp ~$ ls backups
ls: cannot access 'backups': No such file or directory
omar_alahmadi@lamp ~$ ls unixstuff/backups
omar_alahmadi@lamp ~$ ls ~/unixstuff
another  backups
omar_alahmadi@lamp ~$ ls ~
unixstuff
omar_alahmadi@lamp ~$ ls ~/..
omar_alahmadi
omar_alahmadi@lamp ~$
```

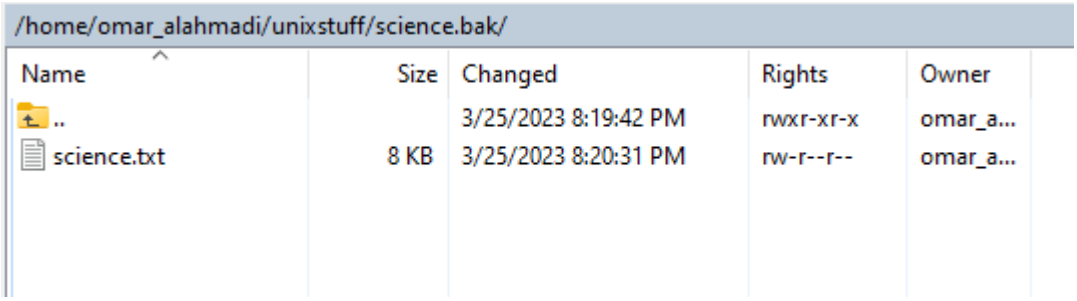
2.1

```
omar_alahmadi@lamp ~/unixstuff$ cp /vol/examples/tutorial/science.txt .
cp: cannot stat '/vol/examples/tutorial/science.txt': No such file or directory
omar_alahmadi@lamp ~/unixstuff$ cp ~/vol/examples/tutorial/science.txt .
omar_alahmadi@lamp ~/unixstuff$ mkdir science.bak
mkdir: cannot create directory 'science.bak': File exists
omar_alahmadi@lamp ~/unixstuff$ cd science.bak
omar_alahmadi@lamp ~/unixstuff/science.bak$ cp ~/vol/examples/tutorial/science.txt
omar_alahmadi@lamp ~/unixstuff/science.bak$
```

Output:



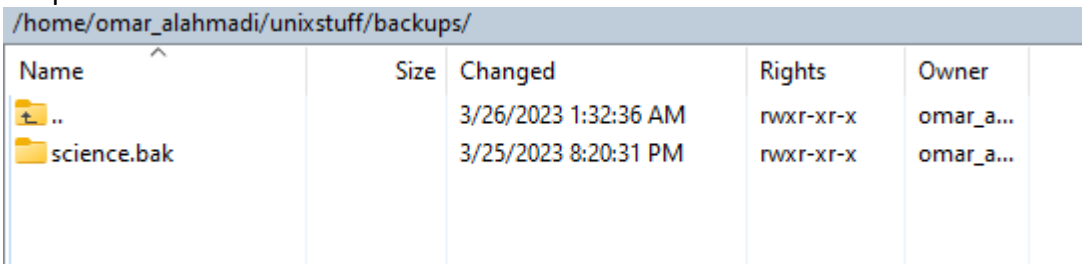
2a:



2.2

```
omar_alahmadi@lamp ~/unixstuff$ mv science.bak backups/.
omar_alahmadi@lamp ~/unixstuff$
```

Output:



2.3

```
omar_alahmadi@lamp ~/unixstuff$ cp science.txt tempfile.txt
omar_alahmadi@lamp ~/unixstuff$ ls
another  backups  science.txt  tempfile.txt
omar_alahmadi@lamp ~/unixstuff$ rm tempfile.txt
omar_alahmadi@lamp ~/unixstuff$ ls
another  backups  science.txt
omar_alahmadi@lamp ~/unixstuff$
```

2b

```
omar_alahmadi@lamp ~/unixstuff$ mkdir backups
mkdir: cannot create directory 'backups': File exists
omar_alahmadi@lamp ~/unixstuff$ mkdir tempstuff
omar_alahmadi@lamp ~/unixstuff$ ls
another  backups  science.txt  tempstuff
omar_alahmadi@lamp ~/unixstuff$ rmdir tempstuff
omar_alahmadi@lamp ~/unixstuff$ ls
another  backups  science.txt
omar_alahmadi@lamp ~/unixstuff$
```

2.4

After using clear command:

```
omar_alahmadi@lamp ~/unixstuff$
```

Cat command:

```
omar_alahmadi@lamp ~/unixstuff$ cat science.txt
The Electronic Telegraph  Thursday 28 September 1995  Science

This summer the Royal Observatory at Herstmonceux
found new life as a science centre. Andro Linklater
celebrates a partial victory for the heritage

THE SIGHT of a child's top spinning unsupported in mid-air should have been
surprising. Rotating there in space, it not only defied the rules of gravity,
it defied common sense, and at least three Fellows of the Royal Society gazed
at it in something close to wonder.

But this was Fabricators' Week at the Herstmonceux Science Centre, with
exhibitors from science centres all over Europe arriving to demonstrate
prototypes of experiments they hoped to produce as hands-on displays - a tube
of rocket-propelled rubber balls, a solar-powered toy car, a model of planetary
movement. They had a much tougher audience in mind. Would it astonish a child

Well I certainly found it surprising, Prof Michael Berry FRS, an expert in
gravitational physics and the top's demonstrator, said a trifle indignantly.
The physics of why the top doesn't topple over are extraordinarily complex,
and so far as I know, no one has ever demonstrated the experiment before.

So challenging are the physics indeed that Berry has written a paper on the
spinning top, invented by Bill Hones of Seattle, for the scientific journal
Nature. Its position in mid-air was maintained by the straightforward method of
positioning a magnet beneath it with reverse polarity, but its stability was
acquired in far more complicated fashion, through the interaction of the
magnetic field and the forces created by its spin. In technical terms, it had
become an adiabatic trap.

A child brought up on cinema special effects might think it quite normal to
have a top spinning in space

But Prof Richard Gregory, another FRS and emeritus professor of
```

Less command:

```
omar_alahmadi@lamp ~/unixstuff$ less science.txt
The Electronic Telegraph  Thursday 28 September 1995  Science

This summer the Royal Observatory at Herstmonceux
found new life as a science centre. Andro Linklater
celebrates a partial victory for the heritage

THE SIGHT of a child's top spinning unsupported in mid-air should have been
surprising. Rotating there in space, it not only defied the rules of gravity,
it defied common sense, and at least three Fellows of the Royal Society gazed
at it in something close to wonder.

But this was Fabricators' Week at the Herstmonceux Science Centre, with
exhibitors from science centres all over Europe arriving to demonstrate
prototypes of experiments they hoped to produce as hands-on displays - a tube
of rocket-propelled rubber balls, a solar-powered toy car, a model of planetary
movement. They had a much tougher audience in mind. Would it astonish a child

Well I certainly found it surprising, Prof Michael Berry FRS, an expert in
gravitational physics and the top's demonstrator, said a trifle indignantly.
The physics of why the top doesn't topple over are extraordinarily complex,
and so far as I know, no one has ever demonstrated the experiment before.

So challenging are the physics indeed that Berry has written a paper on the
spinning top, invented by Bill Hones of Seattle, for the scientific journal
Nature. Its position in mid-air was maintained by the straightforward method of
positioning a magnet beneath it with reverse polarity, but its stability was
acquired in far more complicated fashion, through the interaction of the
magnetic field and the forces created by its spin. In technical terms, it had
become an adiabatic trap.

A child brought up on cinema special effects might think it quite normal to
have a top spinning in space

But Prof Richard Gregory, another FRS and emeritus professor of
```

After space:

```
Neuro-Psychology at Bristol University, was not convinced that this was enough
to surprise a more blas<DA><98> audience.

A scientist might be impressed, he objected, but a child brought up on
cinema special effects might think it quite normal to have a top spinning in
space. The problem, then, would be to demonstrate how surprising it really is.

For Gregory, one of the world's leading authorities on the psychology of
perception, the challenge presented by the encounter of science with a child's
imagination has long been a passionate interest. In 1987 it led him to set up
the Exploratory, Britain's first hands-on science centre housed in Temple Meads
station in Bristol. All the exhibits, demonstrating phenomena as diverse as the
electrical effects of lightning and the length of sound waves, were designed to
be operated by children.

The point about a science centre is that the exhibits should be fun, he said.
By which I don't mean frivolous but interesting. They should trigger some
response in the child's mind - what I call a 'cortickle'.

This taste for deplorable puns belies Gregory's standing as a scientist whose
work on lunar photography, for example, made possible the successful docking
and landing of Nasa's Moon mission, but it is crucial to his achievement in
making science enjoyable. Both the Exploratory, which attracts 150,000 visitors
a year, and other centres inspired by its success, such as Birmingham's Light
on Science exhibition, all betray the same puckish outlook.

Herstmonceux, which opened in April this year, represents his most ambitious
attempt at cortex tickling. This time he aims not only to make science
entertaining but to rescue an irreplaceable part of Britain's scientific
heritage.

Much more challenging is the attempt to rescue a piece of scientific heritage

To judge by the response of both children and adults absorbed in working the
:
```

After using q:

```
omar_alahmadi@lamp ~/unixstuff$ less science.txt
omar_alahmadi@lamp ~/unixstuff$
```

After Head:

```
omar_alahmadi@lamp ~/unixstuff$ less science.txt
omar_alahmadi@lamp ~/unixstuff$ head science.txt
The Electronic Telegraph  Thursday 28 September 1995  Science

This summer the Royal Observatory at Herstmonceux
found new life as a science centre. Andro Linklater
celebrates a partial victory for the heritage

THE SIGHT of a child's top spinning unsupported in mid-air should have been
surprising. Rotating there in space, it not only defied the rules of gravity,
it defied common sense, and at least three Fellows of the Royal Society gazed
at it in something close to wonder.
omar_alahmadi@lamp ~/unixstuff$
```

Head -5

```
omar_alahmadi@lamp ~/unixstuff$ head -5 science.txt
The Electronic Telegraph  Thursday 28 September 1995  Science

This summer the Royal Observatory at Herstmonceux
found new life as a science centre. Andro Linklater
celebrates a partial victory for the heritage
omar_alahmadi@lamp ~/unixstuff$
```

Tail:

```
omar_alahmadi@lamp ~/unixstuff$ tail science.txt
the top, and with the magnetic force interrupted, the top dropped to the
ground.

That's the sort of cortickling thing you learn at science centres - a Swiss
Army knife not only has a tool for removing stones from horses' hooves but one
for destroying adiabatic traps.

  Herstmonceux Science Centre is open daily 10am-6pm (tel 01323-832731),
nearest stations Battle and Polgate. The International Study Centre offers
limited accommodation (01323-834444).
omar_alahmadi@lamp ~/unixstuff$
```

2.5

2.5.1:

```
omar_alahmadi@lamp ~/unixstuff$ grep science science.txt
found new life as a science centre. Andro Linklater
exhibitors from science centres all over Europe arriving to demonstrate
perception, the challenge presented by the encounter of science with a child's
the Exploratory, Britain's first hands-on science centre housed in Temple Mead
The point about a science centre is that the exhibits should be fun, he said.
making science enjoyable. Both the Exploratory, which attracts 150,000 visitor
attempt at cortex tickling. This time he aims not only to make science
light-sensitive acoustic chimes, its success as a science centre is not in
That's the sort of cortickling thing you learn at science centres - a Swiss
omar_alahmadi@lamp ~/unixstuff$
```

2.5.2:

```
omar_alahmadi@lamp ~/unixstuff$ grep Science science.txt
The Electronic Telegraph  Thursday 28 September 1995  Science
But this was Fabricators' Week at the Herstmonceux Science Centre, with
on Science exhibition, all betray the same puckish outlook.
director, Steve Pizzey, whose Science Projects company devised the exhibits,
  Herstmonceux Science Centre is open daily 10am-6pm (tel 01323-832731),
omar_alahmadi@lamp ~/unixstuff$
```

2.5.3:

```
omar_alahmadi@lamp ~/unixstuff$ grep -i science science.txt
The Electronic Telegraph  Thursday 28 September 1995  Science
found new life as a science centre. Andro Linklater
But this was Fabricators' Week at the Herstmonceux Science Centre, with
exhibitors from science centres all over Europe arriving to demonstrate
perception, the challenge presented by the encounter of science with a child's
the Exploratory, Britain's first hands-on science centre housed in Temple Meads
The point about a science centre is that the exhibits should be fun, he said.
making science enjoyable. Both the Exploratory, which attracts 150,000 visitors
on Science exhibition, all betray the same puckish outlook.
attempt at cortex tickling. This time he aims not only to make science
light-sensitive acoustic chimes, its success as a science centre is not in
director, Steve Pizzey, whose Science Projects company devised the exhibits,
That's the sort of cortickling thing you learn at science centres - a Swiss
  Herstmonceux Science Centre is open daily 10am-6pm (tel 01323-832731),
omar_alahmadi@lamp ~/unixstuff$
```

2.5.4:

```
omar_alahmadi@lamp ~/unixstuff$ grep -i 'spinning top' science.txt
spinning top, invented by Bill Hones of Seattle, for the scientific journal
the spinning top had potential if it could be made more surprising.
```

2.5.5:

```
omar_alahmadi@lamp ~/unixstuff$ grep -ivc science science.txt
128
```

WC:

```
omar_alahmadi@lamp ~/unixstuff$ wc -w science.txt
1250 science.txt
```

WC -1:

```
omar_alahmadi@lamp ~/unixstuff$ wc -l science.txt
142 science.txt
```