

Operating System

Lab 1

pwd

```
haider@ubuntu:~/areeba$ cd ..
haider@ubuntu:~$ pwd
/home/haider
haider@ubuntu:~$
```

ls

```
/home/haider
haider@ubuntu:~$ ls
ali      examples.desktop  Public      tcp_srv
ali.c    file.c            server      tcp_two.c
areeba   first.cc          server.c    tcp_twsrv.c
cli      Music             serverthree.c Templates
clithree new file          srv         tests.c
Desktop  ns-allinone-3.20 tcp_cli     Videos
Documents ns-allinone-3.20.tar.bz2 tcp_cli.c
Downloads Pictures         tcp_serv.c
haider@ubuntu:~$
```

mkdir

```
Documents ns-allinone-3.20.tar.bz2 tcp_cli.c
Downloads Pictures            tcp_serv.c
haider@ubuntu:~$ mkdir areebatariq
haider@ubuntu:~$
```

cd

```
Documents ns-allinone-3.20.tar.bz2 tcp_cli.c
Downloads Pictures            tcp_serv.c
haider@ubuntu:~$ mkdir areebatariq
haider@ubuntu:~$ cd areebatariq
haider@ubuntu:~/areebatariq$
```

rmdir

```
rmdir: failed to remove 'areebatariq': No such file or directory
haider@ubuntu:~/areebatariq$ cd ..
haider@ubuntu:~$ rmdir areebatariq
haider@ubuntu:~$
```

cp

```
haider@ubuntu:~$ cd folder2
haider@ubuntu:~/folder2$ ls
file1.txt
haider@ubuntu:~/folder2$
```

```
haider@ubuntu:~$ mkdir folder1
haider@ubuntu:~$ cd folder1
haider@ubuntu:~/folder1$ touch file1.txt
haider@ubuntu:~/folder1$ cd ..
haider@ubuntu:~$ mkdir folder2
haider@ubuntu:~$ cp folder1/file1.txt folder2/
haider@ubuntu:~$
```

man

```
haider@ubuntu:~/folder2$ man ls
haider@ubuntu:~/folder2$
```

```
haider@ubuntu: ~/folder2
File Edit View Terminal Help
LS(1) User Commands LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILES (the current directory by default).
    Sort entries alphabetically if none of -cftuvSUX nor --sort.

    Mandatory arguments to long options are mandatory for short options
    too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
        with -l, print the author of each file

Manual page ls(1) line 1
```

sudo

```
haider@ubuntu:~/areeba$ sudo touch file2.txt
[sudo] password for haider:
haider@ubuntu:~/areeba$ ls
Downloads  file1.txt  file2.txt
```

apt-get

```
haider@ubuntu: ~
File Edit View Terminal Help
haider@ubuntu:~$ sudo apt-get update
Err http://security.ubuntu.com lucid-security Release.gpg
  Cannot initiate the connection to 192.168.244.244:8080 (192.168.244.244). - co
nnect (101: Network is unreachable)
Err http://security.ubuntu.com/ubuntu/ lucid-security/main Translation-en_US
  Cannot initiate the connection to 192.168.244.244:8080 (192.168.244.244). - co
nnect (101: Network is unreachable)
Err http://security.ubuntu.com/ubuntu/ lucid-security/restricted Translation-en_
US
  Cannot initiate the connection to 192.168.244.244:8080 (192.168.244.244). - co
nnect (101: Network is unreachable)
Err http://security.ubuntu.com/ubuntu/ lucid-security/universe Translation-en_US
  Cannot initiate the connection to 192.168.244.244:8080 (192.168.244.244). - co
nnect (101: Network is unreachable)
Err http://security.ubuntu.com/ubuntu/ lucid-security/multiverse Translation-en_
US
  Cannot initiate the connection to 192.168.244.244:8080 (192.168.244.244). - co
nnect (101: Network is unreachable)
Ign http://security.ubuntu.com lucid-security Release
Ign http://security.ubuntu.com lucid-security/main Packages
Ign http://security.ubuntu.com lucid-security/restricted Packages
Ign http://security.ubuntu.com lucid-security/main Sources
Ign http://security.ubuntu.com lucid-security/restricted Sources
Ign http://security.ubuntu.com lucid-security/universe Packages
```

Question 2

```
#include <stdio.h>
#include <stdlib.h>

int main(int argc, char *argv[]) {
    // Check if at least one command-line
    argument is provided (which is the course
    name).
```

```
    if (argc < 2) {  
        printf("The %s Course Name is  
missing\n", argv[0]);  
        return 1; // Exit with an error code.  
    }  
    else{  
        printf("Welcome to os lab %s",argv[1]);  
    }  
}
```

Output

```
~/lab1os$ gcc main.c -o main  
~/lab1os$ ./main os21SE  
Welcome to  Operating System Lab os21SE  
~/lab1os$ █
```

```
~/lab1os$ gcc main.c -o main  
~/lab1os$ ./main  
The ./main Course Name is missing  
~/lab1os$ █
```

Question 3

```
#include <stdio.h>  
#include <stdlib.h>
```

```
int main(int argc, char *argv[]) {

    // Check if there are at least 2
    command-line arguments (including the program
    name).
    if (argc < 2) {
        printf("The %s command line arguments
        are missing\n", argv[0]);
        return 1; // Exit with an error code.
    } else {
        int sum = 0;    // Variable to store
        the sum of integers.
        float avg = 0; // Variable to store
        the average of integers.

        // Iterate through the command-line
        arguments, starting from the second argument
        (index 1).
        for (int i = 1; i < argc; i++) {
            sum += atoi(argv[i]); // Convert
            the argument to an integer and add it to the
            sum.
        }

        // Calculate the average by dividing
```

the sum by the number of arguments (excluding the program name).

```
    avg = (float)sum / (argc - 1);

    // Print the sum and average.
    printf("The sum of Numbers: %d\n",
sum);
    printf("The avg of Numbers: %f\n",
avg);

    return 0; // Exit successfully
}
}
```

Output

```
welcome to operating system Lab 1
~/lab1os$ gcc main.c -o ques2
~/lab1os$ ./ques2 1 2 3 4 5
The sum of Numbers 15
The avg of Numbers 3.000000
~/lab1os$
```

```
~/lab1os$ ./ques22
The ./ques22 commad line arguments are missing~/lab1os$
```

Question 4

```
#include <ctype.h>
#include <stdio.h>

int main(int argc, char *argv[]) {

    FILE *input = fopen(argv[1], "r");
    FILE *output = fopen(argv[2], "w");
    char c = getc(input);
    while (c != EOF) {

        if (c >= 48 && c <= 57) {
            fprintf(output, "%c", c);
        }
        c = getc(input);
    }

    printf("Done.Check file2.txt\n");
    return 0;
}
```

Output

```
~/lab1os$ gcc main.c -o program
~/lab1os$ ./program "i.txt" "out.txt"
Done.Check file2.txt
~/lab1os$
```

≡ i.txt

1 2 a b c 3 4 5

⋮

≡ out.txt

1 2345