

NUMBER 1

a

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ touch 22141013_1.txt 22141013_2.txt 22141013_t3.txt 22141013_t3.txt
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ mkdir atiq1 atiq2
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$
```

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ mv 22141013_1.txt 22141013_2.txt 22141013_3.txt atiq1
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd atiq1
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq1$ ls
22141013_1.txt 22141013_2.txt 22141013_3.txt
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq1$
```

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq1$ cp 22141013_1.txt 22141013_2.txt /home/atiq/atiq2
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq1$ cd ..
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd atiq2
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq2$ ls
22141013_1.txt 22141013_2.txt
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq2$
```

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ mkdir atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cp -r atiq1 atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ ls
atiq1
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ cd atiq1
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3/atiq1$ ls
22141013_1.txt 22141013_2.txt 22141013_3.txt
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3/atiq1$
```

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ ls -l
total 4
drwxr--r-- 2 atiq atiq 4096 Jul 10 18:21 atiq1
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ ls -l atiq1
total 0
-rw-rw-r-- 1 atiq atiq 0 Jul 10 18:21 22141013_1.txt
-rw-rw-r-- 1 atiq atiq 0 Jul 10 18:21 22141013_2.txt
-rw-rw-r-- 1 atiq atiq 0 Jul 10 18:21 22141013_3.txt
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ chmod -R go=rx atiq3
chmod: cannot access 'atiq3': No such file or directory
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ cd ..
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ chmod -R go=rx atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ls -l
total 52
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:17 atiq1
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:19 atiq2
drwxr-xr-x 3 atiq atiq 4096 Jul 10 18:21 atiq3
drwxr-xr-x 2 atiq atiq 4096 Jun  8 07:36 Desktop
drwxr-xr-x 2 atiq atiq 4096 Jun  8 07:36 Documents
drwxr-xr-x 2 atiq atiq 4096 Jul  3 20:26 Downloads
drwxr-xr-x 2 atiq atiq 4096 Jun  8 07:36 Music
drwxr-xr-x 3 atiq atiq 4096 Jul  3 19:56 Pictures
drwxrwxr-x 2 atiq atiq 4096 Jul  4 01:34 practice
drwxr-xr-x 2 atiq atiq 4096 Jun  8 07:36 Public
drwx----- 7 atiq atiq 4096 Jul  3 21:00 snap
drwxr-xr-x 2 atiq atiq 4096 Jun  8 07:36 Templates
drwxr-xr-x 2 atiq atiq 4096 Jun  8 07:36 Videos
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ ls -l
total 4
drwxr-xr-x 2 atiq atiq 4096 Jul 10 18:21 atiq1
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ ls -l atiq1
total 0
-rw-r-xr-x 1 atiq atiq 0 Jul 10 18:21 22141013_1.txt
-rw-r-xr-x 1 atiq atiq 0 Jul 10 18:21 22141013_2.txt
-rw-r-xr-x 1 atiq atiq 0 Jul 10 18:21 22141013_3.txt
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$
```

```

atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ cd ..
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ls -l
total 52
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:17 atiq1
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:19 atiq2
drwxr-xr-x 3 atiq atiq 4096 Jul 10 18:21 atiq3
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Desktop
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Documents
drwxr-xr-x 2 atiq atiq 4096 Jul 3 20:26 Downloads
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Music
drwxr-xr-x 3 atiq atiq 4096 Jul 3 19:56 Pictures
drwxrwxr-x 2 atiq atiq 4096 Jul 4 01:34 practice
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Public
drwx----- 7 atiq atiq 4096 Jul 3 21:00 snap
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Templates
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Videos
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ mv atiq3 /
mv: cannot move 'atiq3' to '/atiq3': Permission denied
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ sudo mv atiq3 /
[sudo] password for atiq:
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd ../../
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:/$ ls -l
total 4194400
drwxr-xr-x 3 atiq atiq 4096 Jul 10 18:21 atiq3
lrwxrwxrwx 1 root root 7 Apr 22 19:08 bin -> usr/bin
drwxr-xr-x 2 root root 4096 Feb 26 18:58 bin.usr-is-merged
drwxr-xr-x 4 root root 4096 Jun 8 01:32 boot
drwxr-xr-x 2 root root 4096 Jan 1 1970 cdrom
drwxr-xr-x 21 root root 4080 Jul 10 2024 dev
drwxr-xr-x 139 root root 12288 Jul 10 18:02 etc
drwxr-xr-x 3 root root 4096 Jun 8 07:35 home
lrwxrwxrwx 1 root root 7 Apr 22 19:08 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Apr 22 19:08 lib64 -> usr/lib64
drwxr-xr-x 2 root root 4096 Apr 8 20:37 lib.usr-is-merged
drwx----- 2 root root 16384 Jun 8 01:20 lost+found
drwxr-xr-x 4 root root 4096 Jun 10 09:01 media
drwxr-xr-x 2 root root 4096 Apr 24 16:47 mnt
drwxr-xr-x 3 root root 4096 Jun 8 02:18 opt
dr-xr-xr-x 368 root root 0 Jul 10 2024 proc
drwx----- 5 root root 4096 Jun 8 07:35 root
drwxr-xr-x 37 root root 1000 Jul 10 18:34 run
lrwxrwxrwx 1 root root 8 Apr 22 19:08 sbin -> usr/sbin
drwxr-xr-x 2 root root 4096 Mar 31 15:00 sbin.usr-is-merged
drwxr-xr-x 16 root root 4096 Jul 3 18:40 snap
drwxr-xr-x 2 root root 4096 Apr 24 16:47 srv
-rw----- 1 root root 4294967296 Jun 8 01:26 swap.img
dr-xr-xr-x 13 root root 0 Jul 10 18:42 sys
drwxrwxrwt 21 root root 4096 Jul 10 18:59 tmp
drwxr-xr-x 12 root root 4096 Apr 24 16:47 usr
drwxr-xr-x 14 root root 4096 Jun 8 07:35 var
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:/$

```

```

atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd atiq3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~/atiq3$ cd ..
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ls -l
total 52
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:17 atiq1
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:19 atiq2
drwxr-xr-x 3 atiq atiq 4096 Jul 10 18:21 atiq3
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Desktop
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Documents
drwxr-xr-x 2 atiq atiq 4096 Jul 3 20:26 Downloads
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Music
drwxr-xr-x 3 atiq atiq 4096 Jul 3 19:56 Pictures
drwxrwxr-x 2 atiq atiq 4096 Jul 4 01:34 practice
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Public
drwx----- 7 atiq atiq 4096 Jul 3 21:00 snap
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Templates
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Videos
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ mv atiq3 /
mv: cannot move 'atiq3' to '/atiq3': Permission denied
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ sudo mv atiq3 /
[sudo] password for atiq:
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cd ../../
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:/$ ls -l
total 4194400
drwxr-xr-x 3 atiq atiq 4096 Jul 10 18:21 atiq3
lrwxrwxrwx 1 root root 7 Apr 22 19:08 bin -> usr/bin
drwxr-xr-x 2 root root 4096 Feb 26 18:58 bin.usr-is-merged
drwxr-xr-x 4 root root 4096 Jun 8 01:32 boot
drwxr-xr-x 2 root root 4096 Jan 1 1970 cdrom
drwxr-xr-x 21 root root 4880 Jul 10 20:24 dev
drwxr-xr-x 139 root root 12288 Jul 10 18:02 etc
drwxr-xr-x 3 root root 4096 Jun 8 07:35 home
lrwxrwxrwx 1 root root 7 Apr 22 19:08 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Apr 22 19:08 lib64 -> usr/lib64
drwxr-xr-x 2 root root 4096 Apr 8 20:37 lib.usr-is-merged
drwx----- 2 root root 16384 Jun 8 01:20 lost+found
drwxr-xr-x 4 root root 4096 Jun 10 09:01 media
drwxr-xr-x 2 root root 4096 Apr 24 16:47 mnt
drwxr-xr-x 3 root root 4096 Jun 8 02:18 opt
dr-xr-xr-x 368 root root 0 Jul 10 20:24 proc
drwx----- 5 root root 4096 Jun 8 07:35 root
drwxr-xr-x 37 root root 1000 Jul 10 18:34 run
lrwxrwxrwx 1 root root 8 Apr 22 19:08/sbin -> usr/sbin
drwxr-xr-x 2 root root 4096 Mar 31 15:00/sbin.usr-is-merged
drwxr-xr-x 16 root root 4096 Jul 3 18:40 snap
drwxr-xr-x 2 root root 4096 Apr 24 16:47 srv
-rw----- 1 root root 4294967296 Jun 8 01:26 swap.img
dr-xr-xr-x 13 root root 0 Jul 10 18:42 sys
drwxrwxrwt 21 root root 4096 Jul 10 18:59 tmp
drwxr-xr-x 12 root root 4096 Apr 24 16:47 usr
drwxr-xr-x 14 root root 4096 Jun 8 07:35 var
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:/$

```

```

atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ls -l
total 48
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:17 atiq1
drwxrwxr-x 2 atiq atiq 4096 Jul 10 18:19 atiq2
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Desktop
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Documents
drwxr-xr-x 2 atiq atiq 4096 Jul 3 20:26 Downloads
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Music
drwxr-xr-x 3 atiq atiq 4096 Jul 3 19:56 Pictures
drwxrwxr-x 2 atiq atiq 4096 Jul 4 01:34 practice
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Public
drwx----- 7 atiq atiq 4096 Jul 3 21:00 snap
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Templates
drwxr-xr-x 2 atiq atiq 4096 Jun 8 07:36 Videos
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ rm -r atiq1 atiq2
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ls
Desktop Documents Downloads Music Pictures practice Public snap Templates Videos
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$

```

b

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cat >>course.txt
CSE321
Operating Systems
02
CSE330
Numerical Methods
08
CSE446
Advance Algorithms
01
MAT215
Mathematics III:Complex Variables & Laplace Transformations
^C
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cat course.txt
CSE321
Operating Systems
02
CSE330
Numerical Methods
08
CSE446
Advance Algorithms
01
MAT215
Mathematics III:Complex Variables & Laplace Transformations
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ grep -c CSE course.txt
3
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$
```

C

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:/$ ls -a
.      bin.usr-is-merged  etc      lib.usr-is-merged  opt      sbin      swap.img  var
..     boot             home     lost+found         proc     sbin.usr-is-merged  sys
atiq3  cdrom               lib      media              root     snap      tmp
bin    dev                 lib64    mnt                run      srv        usr
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:/$
```

d

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ sed -n '5,17p' course.txt
Numerical Methods
08
CSE446
Advance Algorithms
01
MAT215
Mathematics III:Complex Variables & Laplace Transformations
Semester:
Summer 2024
Lab Faculties:-
CSE321:-
MAO
FBL
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$
```

NUMBER 2

a

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cat a.c
#include <stdio.h>
int main(){
int value1,value2;
printf("Enter value 1:- \n");
scanf("%d",&value1);
printf("Enter value 2:- \n");
scanf("%d",&value2);
if (value1>value2){
int result=value1-value2;
printf("The result is :- %d\n",result);
}
else if (value1<value2){
int result=value2+value1;
printf("The result is:- %d\n",result);
}
else{
int result=value1*value2;
printf("The result is:- %d\n",result);
}
return 0;
}
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ gcc -o a1 a.c
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./a1
Enter value 1:-
20
Enter value 2:-
10
The result is :- 10
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./a1
Enter value 1:-
10
Enter value 2:-
20
The result is:- 30
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./a1
Enter value 1:-
10
Enter value 2:-
10
The result is:- 100
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ □
```

b

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cat b.c
#include <stdio.h>
#include <string.h>

int main() {
FILE *source = NULL, *destination = NULL;
char src[] = "/home/atiq/input.txt";
char desti[] = "/home/atiq/output.txt";
char st[1024];
char *st1;

source = fopen(src, "r");
destination = fopen(desti, "w");

while (fgets(st, sizeof(st), source) != NULL) {
st1 = strtok(st, " ");
while (st1 != NULL)
{fputs(st1, destination);
st1 = strtok(NULL, " ");
if (st1 != NULL) {
fputc(' ', destination);
}
}
}
fclose(source);
fclose(destination);
return 0;
}

atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ █
```


C

```

atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ gcc -o c1 c.c
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./c1
Enter the password:-
BR@CU$pring
Digit missing
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./c1
Enter the password:-
bracuspring
Uppercase character missing, Digit missing, Special character missing
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./c1
Enter the password:-
BR@CU20spring22
OK
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cat c.c
#include <stdio.h>
#include <string.h>

int main(){
    char input[1024];
    int upper = 0, lower = 0, special = 0, number = 0;
    printf("Enter the password:- \n");
    scanf("%s", input);
    for (int i = 0; i < strlen(input); i++)
    {
        if (input[i] >= 'a' && input[i] <= 'z')
        {
            lower = 1;
        }
        if (input[i] >= 'A' && input[i] <= 'Z')
        {
            upper = 1;
        }
        if (input[i] >= '0' && input[i] <= '9')
        {
            number = 1;
        }
        if (input[i]=='!' || input[i]=='_' || input[i]=='@' || input[i]=='#' || input[i]=='$' || input[i]=='%' || input[i]=='^' || input[i]=='&' || input[i]=='*' || input[i]=='(' || input[i]==')') {
            special = 1;
        }
        if (upper && lower && special && number) {
            printf("OK");
        }
        else
        {
            int status = 1;
            if (!upper)
            {
                if (!status) printf(", ");
                printf("Uppercase character missing");
                status = 0;
            }
            if (!lower)
            {
                if (!status) printf(", ");
                printf("Lowercase character missing");
                status = 0;
            }
            if (!number)
            {
                if (!status) printf(", ");
                printf("Digit missing");
                status = 0;
            }
            if (!special)
            {
                if (!status) printf(", ");
                printf("Special character missing");
                status = 0;
            }
        }
        printf("\n");
        return 0;
    }
}

```

```

}
if (!lower)
{
    if (!status) printf(", ");
    printf("Lowercase character missing");
    status = 0;
}
if (!number) {
    if (!status) printf(", ");
    printf("Digit missing");
    status = 0;
}
if (!special)
{
    if (!status) printf(", ");
    printf("Special character missing");
    status = 0;
}
}
printf("\n");
return 0;
}
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ █

```

d

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ gcc -o d1 d.c
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./d1
Please enter the email: atiq@sheba.xyz
Email address is ok
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./d1
Please enter the email: atiq@gmail.com
Email address is outdated
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ cat d.c
#include <stdio.h>
#include <string.h>

int main() {
char email[1024];
int j;
printf("Please enter the email: ");
scanf("%s", email);
for (int i = 0; i < strlen(email); i++) {
if (email[i] == '@')
{
j = i + 1;
break;
}
}
if (strcmp(email + j, "sheba.xyz")==0)
{
printf("Email address is ok\n");
}
else
{
printf("Email address is outdated\n");
}
return 0;
}

atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ █
```

e

```
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ gcc -o e1 e.c
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./e1
AAABBAAA
Pallindrome
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./e1
AABBABA
Not Pallindrome
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$ ./e1
aabcbaa
Pallindrome
atiq@atiq-VivoBook-ASUSLaptop-X512FL-X512FL:~$
```