Answer to the question no:01

a)

Question: Create 4 files named 21301276_1.txt, 21301276_2.txt, 21301276_3.txt , 21301276_4.txt .

touch 21301276_1.txt 21301276_2.txt 21301276_3.txt 21301276_4.txt

```
nowshin@nowshin-VirtualBox:~$ mkdir lab1
nowshin@nowshin-VirtualBox:~$ cd lab1
nowshin@nowshin-VirtualBox:~/lab1$ touch 21301276_1.txt 21301276_2.txt 21301276_3.txt
 21301276_4.txt
nowshin@nowshin-VirtualBox:~/lab1$ ls
21301276_1.txt  21301276_2.txt  21301276_3.txt  21301276_4.txt
nowshin@nowshin-VirtualBox:~/lab1$
```

Question: Create 2 directories named nowshin1, nowshin2 .

mkdir nowshin1 nowshin2

```
nowshin@nowshin-VirtualBox:~/lab1$ mkdir nowshin1 nowshin2
nowshin@nowshin-VirtualBox:~/lab1$ ls
21301276_1.txt  21301276_2.txt  21301276_3.txt  21301276_4.txt  nowshin1  nowshin2
nowshin@nowshin-VirtualBox:~/lab1$
```

Question : Move 21301276_1.txt, 21301276_2.txt, 21301276_3.txt in nowshin1 directory .

mv 21301276_1.txt 21301276_2.txt 21301276_3.txt nowshin1

```
nowshin@nowshin-VirtualBox:~/lab1$ mv 21301276_1.txt 21301276_2.txt 21301276_3.txt nowshin1
nowshin@nowshin-VirtualBox:~/lab1$ ls
21301276_4.txt  nowshin1  nowshin2
nowshin@nowshin-VirtualBox:~/lab1$
```

Question: Copy 21301276_1.txt, 21301276_2.txt YourName2 directory:

cp 21301276_1.txt 21301276_2.txt /home/nowshin/lab1/nowshin2

```
nowshin@nowshin-VirtualBox:~/lab1$ cd nowshin2
nowshin@nowshin-VirtualBox:~/lab1/nowshin2$ ls
nowshin@nowshin-VirtualBox:~/lab1/nowshin2$ cd ..
nowshin@nowshin-VirtualBox:~/lab1$ cd nowshin1
nowshin@nowshin-VirtualBox:~/lab1/nowshin1$ ls
21301276_1.txt  21301276_2.txt  21301276_3.txt
nowshin@nowshin-VirtualBox:~/lab1/nowshin1$ cp 21301276_1.txt 21301276_2.txt /home/nowshin/lab1
/nowshin2
nowshin@nowshin-VirtualBox:~/lab1/nowshin1$ 
```

```
nowshin@nowshin-VirtualBox:~/lab1$ cd nowshin2
nowshin@nowshin-VirtualBox:~/lab1/nowshin2$ ls
21301276_1.txt  21301276_2.txt
nowshin@nowshin-VirtualBox:~/lab1/nowshin2$
```

 Question: Create another directory YourName3.

mkdir nowshin3

```
nowshin@nowshin-VirtualBox:~/lab1/nowshin2$ cd ..
nowshin@nowshin-VirtualBox:~/lab1$ mkdir nowshin3
nowshin@nowshin-VirtualBox:~/lab1$ 
```

Question: copy the nowshin1 directory along with its contents to the nowshin3 directory:

cp -r nowshin1 nowshin3/

```
nowshin@nowshin-VirtualBox:~/lab1$ cp -r nowshin1 nowshin3/
nowshin@nowshin-VirtualBox:~/lab1$ cd nowshin3
nowshin@nowshin-VirtualBox:~/lab1/nowshin3$ ls
nowshin1
nowshin@nowshin-VirtualBox:~/lab1/nowshin3$ 
```

Question : Now go into the YourName3 directory and check the permissions of the files/directory and change the permissions for both groups and others to only read-execute for all the files. Now go back to one directory and print all the directories and files in the current working directory.

ls -l
cd nowshin1
ls -l
cd ..
chmod -R 755 nowshin1
ls -ld
cd nowshin1
ls -l

```
nowshin@nowshin-VirtualBox:~/lab1/nowshin3$ ls -l
total 4
drwxrwxr-x 2 nowshin nowshin 4096 Sep  3 00:36 nowshin1
nowshin@nowshin-VirtualBox:~/lab1/nowshin3$ cd nowshin1
nowshin@nowshin-VirtualBox:~/lab1/nowshin3/nowshin1$ ls -l
total 0
-rw-rw-r-- 1 nowshin nowshin 0 Sep  3 00:36 21301276_1.txt
-rw-rw-r-- 1 nowshin nowshin 0 Sep  3 00:36 21301276_2.txt
-rw-rw-r-- 1 nowshin nowshin 0 Sep  3 00:36 21301276_3.txt
nowshin@nowshin-VirtualBox:~/lab1/nowshin3/nowshin1$
```

```
nowshin@nowshin-VirtualBox:~/lab1/nowshin3/nowshin1$ cd ..
nowshin@nowshin-VirtualBox:~/lab1/nowshin3$ chmod -R 755 nowshin1
nowshin@nowshin-VirtualBox:~/lab1/nowshin3$ ls -ld
drwxrwxr-x 3 nowshin nowshin 4096 Sep  3 00:36 .
nowshin@nowshin-VirtualBox:~/lab1/nowshin3$ cd nowshin1
nowshin@nowshin-VirtualBox:~/lab1/nowshin3/nowshin1$ ls -l
total 0
-rwxr-xr-x 1 nowshin nowshin 0 Sep  3 00:36 21301276_1.txt
-rwxr-xr-x 1 nowshin nowshin 0 Sep  3 00:36 21301276_2.txt
-rwxr-xr-x 1 nowshin nowshin 0 Sep  3 00:36 21301276_3.txt
nowshin@nowshin-VirtualBox:~/lab1/nowshin3/nowshin1$
```

Question: move the YourName3 folder to the root directory and delete the rest of the files and folders in the current working directory.

sudo mv nowshin3/
ls
rm -rf 21301276_4.txt nowshin1 nowshin2

```
nowshin@nowshin-VirtualBox:~/lab1$ ls
21301276_4.txt   nowshin1   nowshin2   nowshin3
```

```
nowshin@nowshin-VirtualBox:~/lab1$ sudo mv nowshin3 /
nowshin@nowshin-VirtualBox:~/lab1$ ls
21301276_4.txt   nowshin1   nowshin2
nowshin@nowshin-VirtualBox:~/lab1$ 
```

```
nowshin@nowshin-VirtualBox:~/lab1$ ls
21301276_4.txt   nowshin1   nowshin2
nowshin@nowshin-VirtualBox:~/lab1$ rm -rf 21301276_4.txt nowshin1 nowshin2
nowshin@nowshin-VirtualBox:~/lab1$ ls
nowshin@nowshin-VirtualBox:~/lab1$ 
```

----

b) cat > course.txt

course_code: CSE321 , course_name: operating system , section:11
course_code: CSE350 , course_name: digital electronics and pulse techniques , section:06
course_code: CSE461 , course_name: introduction to robotics , section:02
course_code: CSE470 , course_name: software engineeting , section:08

grep -c "CSE" course.txt

```
nowshin@nowshin-VirtualBox:~/lab1$ cat > course.txt
course_code: CSE321 , course_name: operating system , section:11
course_code: CSE350 , course_name: digital electronics and pulse techniques , section:06
course_code: CSE461 , course_name: introduction to robotics , section:02
course_code: CSE470 , course_name: software engineeting , section:08
nowshin@nowshin-VirtualBox:~/lab1$ grep -c "CSE" course.txt
4
nowshin@nowshin-VirtualBox:~/lab1$
```

----

c)

   ls-a

```
nowshin@nowshin-VirtualBox:~/lab1$ cd ../
nowshin@nowshin-VirtualBox:~$ cd /
nowshin@nowshin-VirtualBox:/$ ls -a
.                  cdrom   lib64                nowshin3   sbin                  sys
..                 dev     lib.usr-is-merged    opt        sbin.usr-is-merged    tmp
bin                etc     lost+found           proc       snap                  usr
bin.usr-is-merged  home    media                root       srv                   var
boot               lib     mnt                  run        swap.img
nowshin@nowshin-VirtualBox:/$
```

----

d)
cat > cartoonList.txt

dragon tales
spongebob
dora
bob the builder
cat dog
johnny bravo
mickey mouse
scooby doo
tom and jerry
popeye the sailor man
kiteretsu
phineas and ferb
perman
nyander

richie rich
baby looney tunes
doraemon
powerpuff girls
motu patlu
oggy and cockroaches

sed -n '5,17p' cartoonList.txt

```
nowshin@nowshin-VirtualBox:~$ cat > cartoonList.txt
dragon tales
spongebob
dora
bob the builder
cat dog
johnny bravo
mickey mouse
scooby doo
tom and jerry
popeye the sailor man
kiteretsu
phineas and ferb
perman
nyander
richie rich
baby looney tunes
doraemon
powerpuff girls
motu patlu
oggy and cockroaches
```

```
nowshin@nowshin-VirtualBox:~$ sed -n '5,17p' cartoonList.txt
cat dog
johnny bravo
mickey mouse
scooby doo
tom and jerry
popeye the sailor man
kiteretsu
phineas and ferb
perman
nyander
richie rich
baby looney tunes
doraemon
nowshin@nowshin-VirtualBox:~$ ▊
```

Answer to the question no:02

a)
```c
#include <stdio.h>
int main() {
    float number_1, number_2,answer ;
    printf("Enter your 1st number:") ;
    scanf("%f", &number_1);

    printf("Enter your 2nd number:") ;
    scanf("%f", &number_2) ;


    if (number_1 > number_2) {
        answer = number_1 - number_2;
        printf("Final answer: %.2f\n", answer) ;
    }

    else if (number_1 < number_2) {
        answer = number_1 + number_2;
        printf("Final answer: %.2f\n", answer) ;
    }
```

```c
  else if (number_1 == number_2) {
    answer = number_1 * number_2;
    printf("Final answer: %.2f\n", answer) ;
  }

  return 0 ;

}
```

```
nowshin@nowshin-VirtualBox:~$ touch task2a.c
nowshin@nowshin-VirtualBox:~$ gedit task2a.c
```

```
nowshin@nowshin-VirtualBox:~$ gcc task2a.c -o task2a
nowshin@nowshin-VirtualBox:~$ ./task2a
Enter your 1st number:12
Enter your 2nd number:2
Final answer: 10.00
nowshin@nowshin-VirtualBox:~$
```

----

b)

```c
#include <stdio.h>
void erase_multiple_spaces(const char *sourceFile , const char *destinationFile) {
        FILE *input = fopen (sourceFile, "r") ;
        FILE *output = fopen (destinationFile, "w") ;
        char character ;
        int count = 0 ; //initial value

        while ((character = fgetc(input)) != EOF ) {
        if (character != ' ' && character != '\n' && character != '\t') {
        if (!count && ftell(output) > 0 ) {
           fputc(' ', output) ;
        }
        fputc(character, output) ;
        count = 1 ;

    } else {
```

```
                count = 0 ;
                }
                }
                fclose(input);
                fclose(output);
        }

        int main() {
                const char *sourceFile = "input_2b.txt" ;
                const char *destinationFile = "output_2b.txt" ;
            erase_multiple_spaces(sourceFile, destinationFile);
                return 0;
        }
```
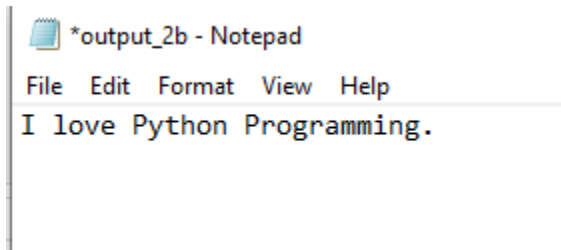
```
nowshin@nowshin-VirtualBox:~$ cd lab1
nowshin@nowshin-VirtualBox:~/lab1$ touch input_2b.txt output_2b.txt task2b.c
nowshin@nowshin-VirtualBox:~/lab1$ gedit task2b.c
nowshin@nowshin-VirtualBox:~/lab1$ gcc task2b.c -o task2b
nowshin@nowshin-VirtualBox:~/lab1$ ./task2b
```

```
nowshin@nowshin-VirtualBox:~/lab1$ cat output_2b.txt
I love Python Programming.nowshin@nowshin-VirtualBox:~/lab1$
```

*output_2b - Notepad

File Edit Format View Help

I love Python Programming.

----

c)

```
#include <stdio.h>
#include <string.h>
void password_checker(const char *word ) {
```

```c
    //initial values
    int special_character  = 0 ;
    int digit = 0 ;
    int lowercase = 0 ;
    int uppercase = 0 ;


    for (int x = 0; word[x] != '\0'; x++ ) {

        if (word[x] == '_' || word[x] == '$' || word[x] == '#' || word[x] == '@') {
            special_character = 1;
            }

        if (word[x] >= '0' && word[x] <= '9'){
            digit = 1 ;
            }

        if (word[x] >= 'a' && word[x] <= 'z'){
            lowercase = 1 ;
            }

        if (word[x] >= 'A' && word[x] <= 'Z'){
             uppercase = 1 ;
            }

        }
        if (special_character && digit && lowercase &&  uppercase  ) {
          printf("OK \n") ;

    } else {
        if (! special_character)  printf("Special character missing\n");
        if (! digit)  printf("Digit missing\n");
        if (! lowercase)  printf("Lowercase character missing\n" );
        if (! uppercase)  printf("Uppercase character missing\n" );

    }
}
int main() {
    char word[1000];
    printf("Enter your password: ");
    scanf("%s",word);
    password_checker(word);
    return 0;
```

```
}
nowshin@nowshin-VirtualBox:~$ gedit task2c.c
nowshin@nowshin-VirtualBox:~$ gcc task2c.c -o task2c
nowshin@nowshin-VirtualBox:~$ ./task2c
Enter your password: As11a
Special character missing
nowshin@nowshin-VirtualBox:~$ gcc task2c.c -o task2c
nowshin@nowshin-VirtualBox:~$ ./task2c
Enter your password: Nowshin12@
OK
nowshin@nowshin-VirtualBox:~$
```

----

d)

```c
#include <stdio.h>
#include <string.h>
void mail_adress_checker(char mail[]) {
   char latest[] = "@sheba.xyz" ;
   char previous[] = "@kaaj.com" ;
   char *domain = strstr(mail, "@" ) ;

   if (domain != NULL ) {
      int previous_num = 1 ; //initial value
      int latest_num = 1 ;

      for (int x = 0;  x < strlen(latest); x++) {

         if (domain[x] != latest[x]) {
            latest_num = 0;

            break;
         }
      }
      //-------------------------------
      for (int y = 0; y < strlen(previous); y++) {
```

```c
        if (domain[y] != previous[y]) {
          previous_num  = 0 ;

            break;
        }
      }


      if (latest_num) {
         printf("Email address is ok \n") ;
      } else if (previous_num) {
         printf("Email address is outdated\n") ;
      } else {
         printf("Unknown domain present\n") ;
      }
   } else {
      printf("Invalid \n") ;
   }
}

int main() {
   char mail_1[] = "fahmid@kaaj.com" ;
   mail_adress_checker(mail_1);
   char mail_2[] = "zaki@sheba.xyz" ;
   mail_adress_checker(mail_2);
   return 0 ;
}
```

```
nowshin@nowshin-VirtualBox:~$ touch task2d.c
nowshin@nowshin-VirtualBox:~$ gedit task2d.c
nowshin@nowshin-VirtualBox:~$ gcc task2d.c -o task2d
nowshin@nowshin-VirtualBox:~$ ./task2d
Email address is outdated
Email address is ok
nowshin@nowshin-VirtualBox:~$
```

----

e)

```c
#include <stdio.h>
#include <string.h>
int  palindrome_checker(char *str ) {

    char *last =str + strlen(str) - 1 ;
    char *first =str;

    while (last > first)  {

        if (*last != *first)  {
            return 0 ;
        }
        last-- ;
        first++ ;

    }
    return 1 ;
}

int main() {
    char str[1000] ;

    printf("enter a string to check palindrome: ") ;
    scanf("%s", str) ;
    if (palindrome_checker(str)) {
        printf("Palindrome\n") ;

    } else {
        printf("Not Palindrome\n") ;
    }
    return 0 ;
}
```

```
nowshin@nowshin-VirtualBox:~$ touch task2e.c
nowshin@nowshin-VirtualBox:~$ gedit task2e.c
nowshin@nowshin-VirtualBox:~$ gcc task2e.c -o task2e
nowshin@nowshin-VirtualBox:~$ ./task2e
enter a string to check palindrome: nowshin
Not Palindrome
nowshin@nowshin-VirtualBox:~$ gcc task2e.c -o task2e
nowshin@nowshin-VirtualBox:~$ ./task2e
enter a string to check palindrome: soaos
Palindrome
nowshin@nowshin-VirtualBox:~$ gcc task2e.c -o task2e
nowshin@nowshin-VirtualBox:~$ ./task2e
enter a string to check palindrome: 12321
Palindrome
nowshin@nowshin-VirtualBox:~$
```