

CSE321 Lab Assignment- 01

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Section: 13

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Task- 01 (a)

```
touch 22101717_1.txt 22101717_2.txt 22101717_3.txt 22101717_4.txt
```

```
mkdir Rajin1 Rajin2
```

```
mv 22101717_1.txt 22101717_2.txt 22101717_3.txt Rajin1
```

```
cp /home/rajin/Rajin1/22101717_1.txt /home/rajin/Rajin1/22101717_2.txt
```

```
/home/rajin/Rajin2
```

```
mkdir Rajin3
```

```
cp -r Rajin1 Rajin3
```

```
cd Rajin3
```

```
cd Rajin1
```

```
ls -l
```

```
chmod go+x,go-w 22101717_1.txt 22101717_2.txt 22101717_3.txt
```

```
cd ..
```

```
cd ..
```

```
ls -R
```

```
sudo mv Rajin3 /
```

```
rm -rf 22101717_4.txt Rajin1 Rajin2
```

```
rajin@rajin: ~  
rajin@rajin:~$ touch 22101717_1.txt 22101717_2.txt 22101717_3.txt 22101717_4.txt  
rajin@rajin:~$ mkdir Rajin1 Rajin2  
rajin@rajin:~$ mv 22101717_1.txt 22101717_2.txt 22101717_3.txt Rajin1  
rajin@rajin:~$ cp /home/rajin/Rajin1/22101717_1.txt /home/rajin/Rajin1/22101717_2.txt /home/rajin/Rajin2  
rajin@rajin:~$ mkdir Rajin3  
rajin@rajin:~$ cp -r Rajin1 Rajin3  
rajin@rajin:~$ cd Rajin3  
rajin@rajin:~/Rajin3$ cd Rajin1  
rajin@rajin:~/Rajin3/Rajin1$ ls -l  
total 0  
-rw-rw-r-- 1 rajin rajin 0 ফেব 20 22:56 22101717_1.txt  
-rw-rw-r-- 1 rajin rajin 0 ফেব 20 22:56 22101717_2.txt  
-rw-rw-r-- 1 rajin rajin 0 ফেব 20 22:56 22101717_3.txt  
rajin@rajin:~/Rajin3/Rajin1$ chmod go+x,go-w 22101717_1.txt 22101717_2.txt 22101717_3.txt  
rajin@rajin:~/Rajin3/Rajin1$ cd ..  
rajin@rajin:~/Rajin3$ cd ..  
rajin@rajin:~$ ls -R  
.:  
22101717_4.txt Desktop Documents Downloads Music Pictures Public Rajin1 Rajin2 Rajin3 snap Templates Videos  
./Desktop:  
./Documents:  
./Downloads:  
./Music:  
./Pictures:  
Screenshots  
./Pictures/Screenshots:  
'3 Feb, 2024 Lab SS- 01.png' '3 Feb, 2024 Lab SS- 02.png' '3 Feb, 2024 Lab SS- 03.png'  
./Public:  
./Rajin1:
```

```
'3 Feb, 2024 Lab SS- 01.png' '3 Feb, 2024 Lab SS- 02.png' '3 Feb, 2024 Lab SS- 03.png'  
./Public:  
./Rajin1:  
22101717_1.txt 22101717_2.txt 22101717_3.txt  
./Rajin2:  
22101717_1.txt 22101717_2.txt  
./Rajin3:  
Rajin1  
./Rajin3/Rajin1:  
22101717_1.txt 22101717_2.txt 22101717_3.txt  
./snap:  
snapd-desktop-integration  
./snap/snapd-desktop-integration:  
83 common current  
./snap/snapd-desktop-integration/83:  
Desktop Documents Downloads Music Pictures Public Templates Videos  
./snap/snapd-desktop-integration/83/Desktop:  
./snap/snapd-desktop-integration/83/Documents:  
./snap/snapd-desktop-integration/83/Downloads:  
./snap/snapd-desktop-integration/83/Music:  
./snap/snapd-desktop-integration/83/Pictures:  
./snap/snapd-desktop-integration/83/Public:
```

```
rajin@rajin: ~  
./Rajin3/Rajin1:  
22101717_1.txt 22101717_2.txt 22101717_3.txt  
./snap:  
snapd-desktop-integration  
./snap/snapd-desktop-integration:  
83 common current  
./snap/snapd-desktop-integration/83:  
Desktop Documents Downloads Music Pictures Public Templates Videos  
./snap/snapd-desktop-integration/83/Desktop:  
./snap/snapd-desktop-integration/83/Documents:  
./snap/snapd-desktop-integration/83/Downloads:  
./snap/snapd-desktop-integration/83/Music:  
./snap/snapd-desktop-integration/83/Pictures:  
./snap/snapd-desktop-integration/83/Public:  
./snap/snapd-desktop-integration/83/Templates:  
./snap/snapd-desktop-integration/83/Videos:  
./snap/snapd-desktop-integration/common:  
./Templates:  
./Videos:  
rajin@rajin:~$ sudo mv Rajin3 /  
[sudo] password for rajin:  
rajin@rajin:~$ rm -rf 22101717_4.txt Rajin1 Rajin2  
rajin@rajin:~$
```

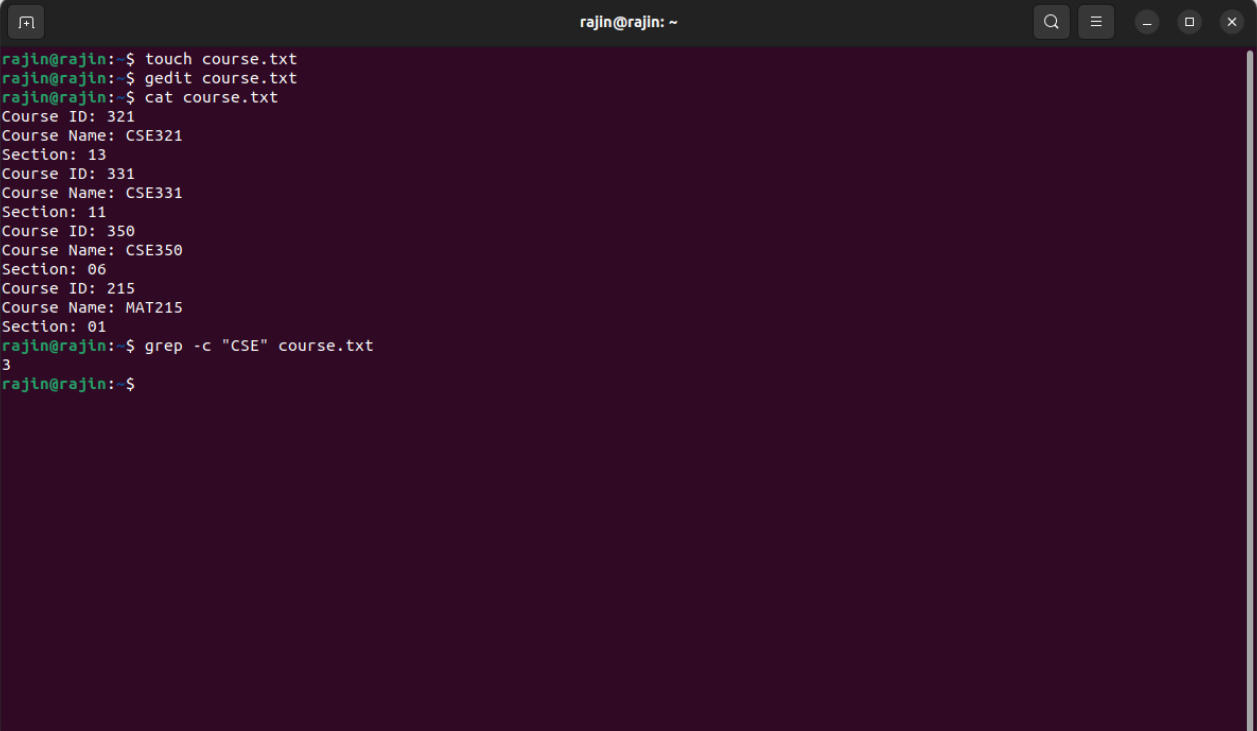
Task- 01 (b)

touch course.txt

gedit course.txt

cat course.txt

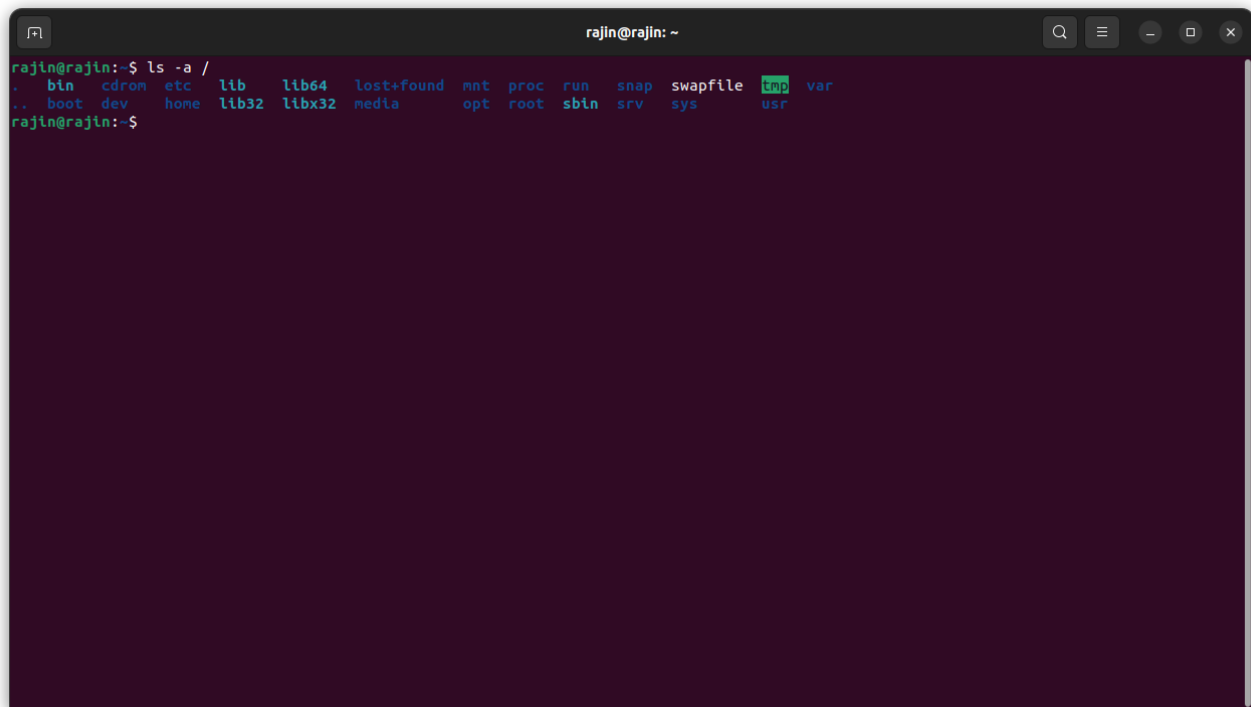
grep -c "CSE" course.txt



```
rajln@rajln: ~  
rajln@rajln:~$ touch course.txt  
rajln@rajln:~$ gedit course.txt  
rajln@rajln:~$ cat course.txt  
Course ID: 321  
Course Name: CSE321  
Section: 13  
Course ID: 331  
Course Name: CSE331  
Section: 11  
Course ID: 350  
Course Name: CSE350  
Section: 06  
Course ID: 215  
Course Name: MAT215  
Section: 01  
rajln@rajln:~$ grep -c "CSE" course.txt  
3  
rajln@rajln:~$
```

Task- 01 (c)

ls -a /



```
rajin@rajin: ~  
rajin@rajin:~$ ls -a /  
.  bin  cdrom  etc  lib  lib64  lost+found  mnt  proc  run  snap  swapfile  tmp  var  
.. boot dev  home  lib32  libx32  media  opt  root  sbin  srv  sys  usr  
rajin@rajin:~$
```

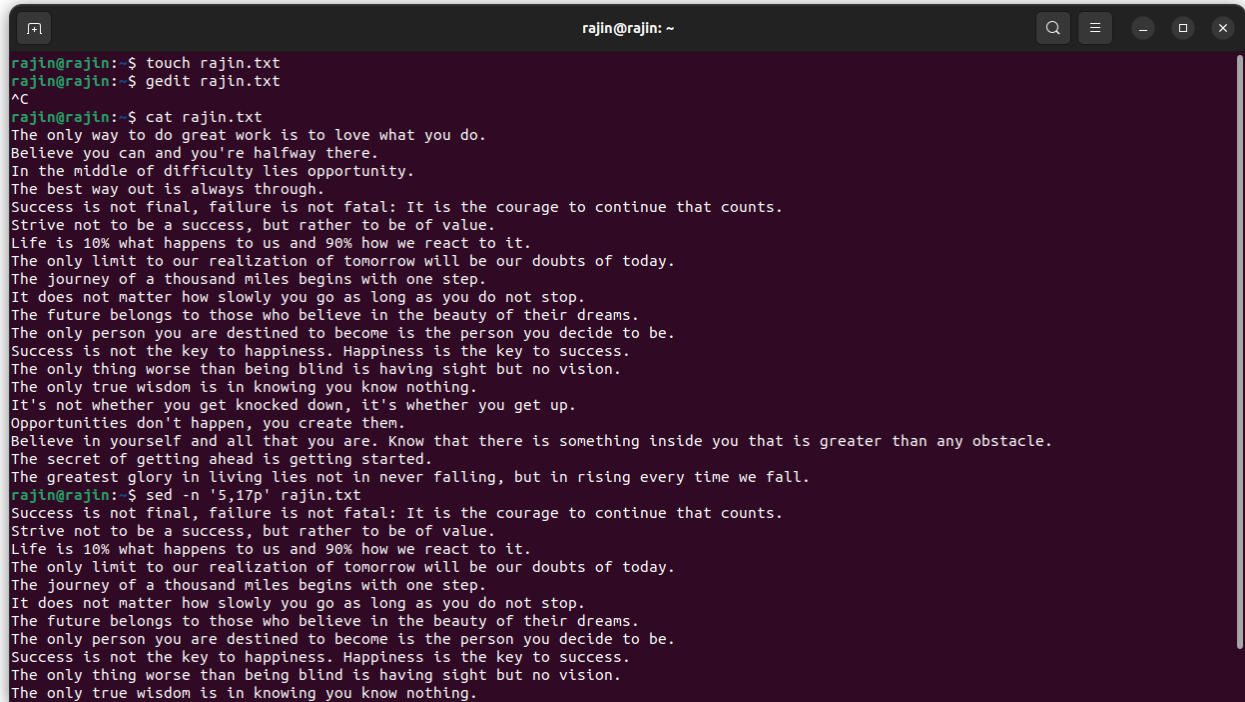
Task- 01 (d)

touch rajin.txt

gedit rajin.txt

cat rajin.txt

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



```
rajin@rajin: ~  
rajin@rajin:~$ touch rajin.txt  
rajin@rajin:~$ gedit rajin.txt  
^C  
rajin@rajin:~$ cat rajin.txt  
The only way to do great work is to love what you do.  
Believe you can and you're halfway there.  
In the middle of difficulty lies opportunity.  
The best way out is always through.  
Success is not final, failure is not fatal: It is the courage to continue that counts.  
Strive not to be a success, but rather to be of value.  
Life is 10% what happens to us and 90% how we react to it.  
The only limit to our realization of tomorrow will be our doubts of today.  
The journey of a thousand miles begins with one step.  
It does not matter how slowly you go as long as you do not stop.  
The future belongs to those who believe in the beauty of their dreams.  
The only person you are destined to become is the person you decide to be.  
Success is not the key to happiness. Happiness is the key to success.  
The only thing worse than being blind is having sight but no vision.  
The only true wisdom is in knowing you know nothing.  
It's not whether you get knocked down, it's whether you get up.  
Opportunities don't happen, you create them.  
Believe in yourself and all that you are. Know that there is something inside you that is greater than any obstacle.  
The secret of getting ahead is getting started.  
The greatest glory in living lies not in never falling, but in rising every time we fall.  
rajin@rajin:~$ sed -n '5,17p' rajin.txt  
Success is not final, failure is not fatal: It is the courage to continue that counts.  
Strive not to be a success, but rather to be of value.  
Life is 10% what happens to us and 90% how we react to it.  
The only limit to our realization of tomorrow will be our doubts of today.  
The journey of a thousand miles begins with one step.  
It does not matter how slowly you go as long as you do not stop.  
The future belongs to those who believe in the beauty of their dreams.  
The only person you are destined to become is the person you decide to be.  
Success is not the key to happiness. Happiness is the key to success.  
The only thing worse than being blind is having sight but no vision.  
The only true wisdom is in knowing you know nothing.
```

```
rajin@rajin: ~  
rajin@rajin:~$ cat rajin.txt  
The only way to do great work is to love what you do.  
Believe you can and you're halfway there.  
In the middle of difficulty lies opportunity.  
The best way out is always through.  
Success is not final, failure is not fatal: It is the courage to continue that counts.  
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Life is 10% what happens to us and 90% how we react to it.  
The only limit to our realization of tomorrow will be our doubts of today.  
The journey of a thousand miles begins with one step.  
It does not matter how slowly you go as long as you do not stop.  
The future belongs to those who believe in the beauty of their dreams.  
The only person you are destined to become is the person you decide to be.  
Success is not the key to happiness. Happiness is the key to success.  
The only thing worse than being blind is having sight but no vision.  
The only true wisdom is in knowing you know nothing.  
It's not whether you get knocked down, it's whether you get up.  
Opportunities don't happen, you create them.  
Believe in yourself and all that you are. Know that there is something inside you that is greater than any obstacle.  
The secret of getting ahead is getting started.  
The greatest glory in living lies not in never falling, but in rising every time we fall.  
rajin@rajin:~$ sed -n '5,17p' rajin.txt  
Success is not final, failure is not fatal: It is the courage to continue that counts.  
Strive not to be a success, but rather to be of value.  
Life is 10% what happens to us and 90% how we react to it.  
The only limit to our realization of tomorrow will be our doubts of today.  
The journey of a thousand miles begins with one step.  
It does not matter how slowly you go as long as you do not stop.  
The future belongs to those who believe in the beauty of their dreams.  
The only person you are destined to become is the person you decide to be.  
Success is not the key to happiness. Happiness is the key to success.  
The only thing worse than being blind is having sight but no vision.  
The only true wisdom is in knowing you know nothing.  
It's not whether you get knocked down, it's whether you get up.  
Opportunities don't happen, you create them.  
rajin@rajin:~$
```

Task- 02 (a)

```
rajin@rajin: ~/22101717_CSE321
rajin@rajin:~/22101717_CSE321$ touch task2_a.c
rajin@rajin:~/22101717_CSE321$ gedit task2_a.c
rajin@rajin:~/22101717_CSE321$ cat task2_a.c
#include <stdio.h>
int main() {
    int a;
    int b;
    printf("Enter the first number: ");
    scanf("%d", &a);
    printf("Enter the second number: ");
    scanf("%d", &b);

    if (a > b) {
        int p;
        p = a - b;
        printf("The result of substruction is: %d \n", p);
    }

    else if (a < b) {
        int p;
        p = a + b;
        printf("The result of addition is: %d \n", p);
    }

    else {
        int p;
        p = a * b;
        printf("The result of multiplication is: %d \n", p);
    }

    return 0;
}
rajin@rajin:~/22101717_CSE321$ gcc -o cp task2_a.c
rajin@rajin:~/22101717_CSE321$ ./cp
Enter the first number: 15
Enter the second number: 10
```

```
scanf("%d", &b);

if (a > b) {
    int p;
    p = a - b;
    printf("The result of substruction is: %d \n", p);
}

else if (a < b) {
    int p;
    p = a + b;
    printf("The result of addition is: %d \n", p);
}

else {
    int p;
    p = a * b;
    printf("The result of multiplication is: %d \n", p);
}

return 0;
}
rajin@rajin:~/22101717_CSE321$ gcc -o cp task2_a.c
rajin@rajin:~/22101717_CSE321$ ./cp
Enter the first number: 15
Enter the second number: 10
The result of substruction is: 5
rajin@rajin:~/22101717_CSE321$ ./cp
Enter the first number: 25
Enter the second number: 35
The result of addition is: 60
rajin@rajin:~/22101717_CSE321$ ./cp
Enter the first number: 6
Enter the second number: 6
The result of multiplication is: 36
rajin@rajin:~/22101717_CSE321$
```


Task- 02 (b)

```
rajin@rajin: ~/22101717_CSE321
rajin@rajin:~/22101717_CSE321$ touch task2_b.c
rajin@rajin:~/22101717_CSE321$ gedit task2_b.c
^C
rajin@rajin:~/22101717_CSE321$ cat task2_b.c
#include <stdio.h>

int main() {
    char str[200];
    printf("Enter your text: ");
    fgets(str, sizeof(str), stdin);

    FILE *input_file = fopen("input.txt", "w");
    if (input_file == NULL) {
        printf("Error opening input file.\n");
        return 1;
    }
    fprintf(input_file, "%s", str);
    fclose(input_file);

    input_file = fopen("input.txt", "r");
    if (input_file == NULL) {
        printf("Error opening input file.\n");
        return 1;
    }

    FILE *output_file = fopen("output.txt", "w");
    if (output_file == NULL) {
        printf("Error opening output file.\n");
        fclose(input_file);
        return 1;
    }

    char current, prev = ' ';
    while ((current = fgetc(input_file)) != EOF) {
        if (!(prev == ' ' && current == ' ')) {
```

```
            input_file = fopen("input.txt", "r");
            if (input_file == NULL) {
                printf("Error opening input file.\n");
                return 1;
            }

            FILE *output_file = fopen("output.txt", "w");
            if (output_file == NULL) {
                printf("Error opening output file.\n");
                fclose(input_file);
                return 1;
            }

            char current, prev = ' ';
            while ((current = fgetc(input_file)) != EOF) {
                if (!(prev == ' ' && current == ' ')) {
                    fputc(current, output_file);
                }
                prev = current;
            }

            printf("Extra spaces removed and written to output.txt.\n");

            fclose(input_file);
            fclose(output_file);

            return 0;
        }
    }
}
rajin@rajin:~/22101717_CSE321$ gcc -o cp task2_b.c
rajin@rajin:~/22101717_CSE321$ ./cp
Enter your text: I      Love      Python      Programming.
Extra spaces removed and written to output.txt.
rajin@rajin:~/22101717_CSE321$ cat output.txt
I Love Python Programming.
rajin@rajin:~/22101717_CSE321$
```

Task- 02 (c)

```
rajin@rajin: ~/22101717_CSE321
rajin@rajin:~/22101717_CSE321$ touch task2_c.c
rajin@rajin:~/22101717_CSE321$ gedit task2_c.c
rajin@rajin:~/22101717_CSE321$ cat task2_c.c
#include <stdio.h>
#include <stdbool.h>
#include <string.h>
#include <ctype.h>

bool has_lowercase(char *password) {
    for (int i = 0; password[i] != '\0'; i++) {
        if (islower(password[i]))
            return true;
    }
    return false;
}

bool has_uppercase(char *password) {
    for (int i = 0; password[i] != '\0'; i++) {
        if (isupper(password[i]))
            return true;
    }
    return false;
}

bool has_digit(char *password) {
    for (int i = 0; password[i] != '\0'; i++) {
        if (isdigit(password[i]))
            return true;
    }
    return false;
}

bool has_special(char *password) {
    char special_chars[] = {'_', '.', '$', '#', '@'};
    for (int i = 0; password[i] != '\0'; i++) {
```

```
        for (int j = 0; j < strlen(special_chars); j++) {
            if (password[i] == special_chars[j])
                return true;
        }
    }
    return false;
}

int main() {
    char password[50];
    printf("Enter your password: ");
    scanf("%s", password);

    bool lowercase = has_lowercase(password);
    bool uppercase = has_uppercase(password);
    bool digit = has_digit(password);
    bool special = has_special(password);

    if (!uppercase && !digit && !special)
        printf("Uppercase character missing, Digit missing, Special character missing\n");
    else if (!lowercase)
        printf("Lowercase character missing\n");
    else if (!uppercase)
        printf("Uppercase character missing\n");
    else if (!digit)
        printf("Digit missing\n");
    else if (!special)
        printf("Special character missing\n");
    else if (lowercase && uppercase && digit && special)
        printf("OK\n");

    return 0;
}
```

```
rajin@rajin: ~/22101717_CSE321
char password[50];
printf("Enter your password: ");
scanf("%s", password);

bool lowercase = has_lowercase(password);
bool uppercase = has_uppercase(password);
bool digit = has_digit(password);
bool special = has_special(password);

if (!uppercase && !digit && !special)
    printf("Uppercase character missing, Digit missing, Special character missing\n");
else if (!lowercase)
    printf("Lowercase character missing\n");
else if (!uppercase)
    printf("Uppercase character missing\n");
else if (!digit)
    printf("Digit missing\n");
else if (!special)
    printf("Special character missing\n");
else if (lowercase && uppercase && digit && special)
    printf("OK\n");

return 0;
}
rajin@rajin:~/22101717_CSE321$ gcc -o cp task2_c.c
rajin@rajin:~/22101717_CSE321$ ./cp
Enter your password: BR@CUspring
Digit missing
rajin@rajin:~/22101717_CSE321$ ./cp
Enter your password: bracuspring
Uppercase character missing, Digit missing, Special character missing
rajin@rajin:~/22101717_CSE321$ ./cp
Enter your password: BR@CU20spring22
OK
rajin@rajin:~/22101717_CSE321$
```

Task- 02 (d)

```
rajin@rajin: ~/22101717_CSE321
rajin@rajin:~/22101717_CSE321$ touch task2_d.c
rajin@rajin:~/22101717_CSE321$ gedit task2_d.c
rajin@rajin:~/22101717_CSE321$ cat task2_d.c
#include <stdio.h>
#include <string.h>

int isEmailUpdated(char *email) {
    // Check if the email contains "@kaaj.com" or "sheba.xyz"
    if (strstr(email, "@kaaj.com") != NULL)
        return 0;
    else if (strstr(email, "@sheba.xyz") != NULL)
        return 1;

    return -1;
}

int main() {
    char email[100];

    printf("Enter the email address: ");
    scanf("%s", email);

    int updated = isEmailUpdated(email);

    if (updated == 0)
        printf("Email address is outdated\n");
    else if (updated == 1)
        printf("Email address is okay\n");
    else
        printf("Invalid email address\n");

    return 0;
}

rajin@rajin:~/22101717_CSE321$ gcc -o cp task2_d.c
```

```
rajin@rajin: ~/22101717_CSE321
// Check if the email contains "@kaaj.com" or "sheba.xyz"
if (strstr(email, "@kaaj.com") != NULL)
    return 0;
else if (strstr(email, "@sheba.xyz") != NULL)
    return 1;

return -1;
}

int main() {
    char email[100];

    printf("Enter the email address: ");
    scanf("%s", email);

    int updated = isEmailUpdated(email);

    if (updated == 0)
        printf("Email address is outdated\n");
    else if (updated == 1)
        printf("Email address is okay\n");
    else
        printf("Invalid email address\n");

    return 0;
}

rajin@rajin:~/22101717_CSE321$ gcc -o cp task2_d.c
rajin@rajin:~/22101717_CSE321$ ./cp
Enter the email address: fahmid@kaaj.com
Email address is outdated
rajin@rajin:~/22101717_CSE321$ ./cp
Enter the email address: zakl@sheba.xyz
Email address is okay
rajin@rajin:~/22101717_CSE321$
```

Task- 02 (e)

```
rajin@rajin: ~/22101717_CSE321
rajin@rajin:~/22101717_CSE321$ touch task2_e.c
rajin@rajin:~/22101717_CSE321$ gedit task2_e.c
rajin@rajin:~/22101717_CSE321$ cat task2_e.c
#include <stdio.h>
#include <stdbool.h>
#include <string.h>
#include <ctype.h>

bool isPalindrome(char *str) {
    char *front = str;
    char *end = str + strlen(str) - 1;

    while (front < end) {
        char frontChar = tolower(*front);
        char endChar = tolower(*end);

        if (frontChar != endChar)
            return false;

        front++;
        end--;
    }
    return true;
}

int main() {
    char input[100];
    printf("Enter a string: ");
    scanf("%s", input);

    if (isPalindrome(input)) {
        printf("Palindrome\n");
    } else {
        printf("Not Palindrome\n");
    }
}
```

```
rajin@rajin: ~/22101717_CSE321
    char endChar = tolower(*end);

    if (frontChar != endChar)
        return false;

    front++;
    end--;
}
return true;
}

int main() {
    char input[100];
    printf("Enter a string: ");
    scanf("%s", input);

    if (isPalindrome(input)) {
        printf("Palindrome\n");
    } else {
        printf("Not Palindrome\n");
    }
    return 0;
}

rajin@rajin:~/22101717_CSE321$ gcc -o cp task2_e.c
rajin@rajin:~/22101717_CSE321$ ./cp
Enter a string: AAABBAAA
Palindrome
rajin@rajin:~/22101717_CSE321$ ./cp
Enter a string: AABBBABA
Not Palindrome
rajin@rajin:~/22101717_CSE321$ ./cp
Enter a string: aabcbaa
Palindrome
rajin@rajin:~/22101717_CSE321$
```

