LAB 05

QUESTION 01:

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

int main()
{    //Write
     FILE*file1=fopen("greetings.txt","w");
     if(file1==NULL)
          {
               perror("Error in opening file.");
          }
     fprintf(file1,"Hello!\n");
     printf("The text has been sucessfuly written in the file.\n");
     fclose(file1);

     //Read
     FILE*file2=fopen("greetings.txt","r");
     if(file2==NULL)
          {
               perror("Error in opening file.");
          }
     char line1[5000];
     printf("Read from the file:\n");
     while(fgets(line1,sizeof(line1),file2)!=NULL)
          {
               printf("%s",line1);
          }
     fclose(file2);
```

```c
     //Append
     FILE*file3=fopen("greetings.txt","a");
     if(file3==NULL)
          {
               perror("Error in opening file.");
          }
     fprintf(file3,"My name is Hamza Nasir.\nCS-22075");
     printf("The text has been appended in to the file.\n");
     fclose(file3);


     //Reading
     FILE*file4=fopen("greetings.txt","r");
     if(file2==NULL)
          {
               perror("Error in opening file.");
          }
     char line2[5000];
     printf("Read from the file:\n");
     while(fgets(line2,sizeof(line2),file2)!=NULL)
          {
               printf("%s",line2);
          }
     fclose(file4);

}
```

QUESTION 02:

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

int main(){
    int NoOFwords=0;
    //Creating a Dummy file.
    FILE*file=fopen("words.txt","w");
    if (file==NULL){
        printf("Error in opening the file");
        return 1;
    }
    fprintf(file,"Hello I am Abdus Samad.\nI am undergraduate student in NED.\nMy Roll no is CS-22077.");
    fclose(file);
    //Reading word from the file.
    FILE*file1=fopen("words.txt","r");
    if(file1==NULL){
       printf("Error in opening the file");
       return 1;
       }

    char word[5000];
    while(fscanf(file1,"%99s",word)==1){
        //printf("%s",word);
        NoOFwords++;

    }

    printf("Total no of words %d :",NoOFwords);
    fclose(file1);
    return 0;
}
```

OUTPUT:

```
Total no of words 16 :
```

QUESTION 03:

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

#define MAX_NAME_LENGTH 50

// Structure to represent a student record
typedef struct {
    char name[MAX_NAME_LENGTH];
    int rollNumber;
    float marks;
} Student;

// Function to add a student record to the file
void addStudentToFile(const char *fileName, const Student *student) {
    FILE*file=fopen(fileName,"a");
    if(file==NULL){
        perror("Error in opening file");
        return 1;
    }
    fprintf(file,"%s %d %.2f\n",student->name,student->rollNumber,student->marks);
    fclose(file);
}

// Function to display the current student records from the file
void displayStudentRecords(const char *fileName) {
    FILE*file=fopen(fileName,"r");
    if(file==NULL){
        perror("Error in opening file");
        return 1;
    }
    Student student;
    while(fscanf(file,"%s %d %f",student.name,&student.rollNumber,&student.marks)==3){
            printf("Name : %s,Roll Number : %d,Marks : %.2f\n",student.name,student.rollNumber,student.marks);

    }
}
void delStudentRecords(const char *fileName,int rollNo){
    FILE*file1=fopen(fileName,"r");
    if(file1==NULL){
        printf("Error in opening the file.");
        return 1;
    }
    FILE*tempfile=fopen("temp.txt","w");
    if(tempfile==NULL){
        printf("Error in opening the file.");
        return 1;
    }
    Student student;
    while(fscanf(file1,"%s %d %f",student.name,&student.rollNumber,&student.marks)==3){
            if(student.rollNumber!=rollNo){
                fprintf(tempfile,"%s %d %.2f\n",student.name,student.rollNumber,student.marks);
            }

    }
    fclose(file1);
    fclose(tempfile);
    remove(fileName);
    rename("temp.txt", fileName);
    printf("Student record with Roll Number %d deleted successfully.\n", rollNo);
}
```

```c
void modifyStudentRecord(const char *fileName,int rollNo){
    FILE*file=fopen(fileName,"r");
    if(file==NULL){
       printf("Error in opening the file");
       return 1;
    }
    FILE*tempfile=fopen("modify.txt","w");
    if(tempfile==NULL){
       printf("Error in opening the file");
       return 1;
    }
    Student student;
    while(fscanf(file,"%s %d %f",student.name,&student.rollNumber,&student.marks)==3){
            if(student.rollNumber!=rollNo){
                fprintf(tempfile,"%s %d %.2f\n",student.name,student.rollNumber,student.marks);
            }else{
            printf("Enter new student name: ");
            scanf("%s", student.name);
            printf("Enter new student marks: ");
            scanf("%f", &student.marks);
            fprintf(tempfile,"%s %d %.2f\n",student.name,student.rollNumber,student.marks);
            }

    }
    fclose(file);
    fclose(tempfile);
    remove(fileName);
    rename("modify.txt", fileName);
    printf("Student record with Roll Number %d modified successfully.\n", rollNo);

}
```

OUTPUT:

```
Student Record Management
1. Add Student
2. View Students
3. Delete Record
4. Modify Record
5. Exit
Enter your choice: 2
Name : samad,Roll Number : 77,Marks : 4.00
Name : talha,Roll Number : 78,Marks : 4.00
Name : saif,Roll Number : 75,Marks : 3.90

Student Record Management
1. Add Student
2. View Students
3. Delete Record
4. Modify Record
5. Exit
Enter your choice: 4
Enter roll number of student to modify :75
Enter new student name: hamza
Enter new student marks: 4
Student record with Roll Number 75 modified successfully.

Student Record Management
1. Add Student
2. View Students
3. Delete Record
4. Modify Record
5. Exit
Enter your choice: 2
Name : samad,Roll Number : 77,Marks : 4.00
Name : talha,Roll Number : 78,Marks : 4.00
Name : hamza,Roll Number : 75,Marks : 4.00
```

```
Student Record Management
1. Add Student
2. View Students
3. Delete Record
4. Modify Record
5. Exit
Enter your choice: 3
Enter roll number of student to delete :75
Student record with Roll Number 75 deleted successfully.

Student Record Management
1. Add Student
2. View Students
3. Delete Record
4. Modify Record
5. Exit
Enter your choice: 2
Name : samad,Roll Number : 77,Marks : 4.00
Name : talha,Roll Number : 78,Marks : 4.00

Student Record Management
1. Add Student
2. View Students
3. Delete Record
4. Modify Record
5. Exit
Enter your choice: 5
Exiting program.

Process returned 0 (0x0)   execution time : 39.039 s
Press any key to continue.
```