King Saud University   **Procedural Programming**   **CSC215**
College of Computer and Information Sciences   **2023 - Semester 451**
Computer Science Department   **LAB 09 Files**

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Exercises: (5 points)

Adopt the functionality of saving and loading students to Lab08 "Course Management System". Consider the following two programs.

```c
int main(){
    struct Student students[MAX_NUM_OF_STUDENTS];
    FILE *fp;    int i;

    fp = fopen("students.dat" , "wb");
    if(fp==NULL){
        printf("Error opening file\n");
        exit(1);
    }

    printf("Enter the details: \n");
    for(i=0; i<MAX_NUM_OF_STUDENTS; i++){
        printf("Enter student ID or -1 to exit: ");
        scanf("%d", &students[i].Id);
        if(students[i].Id == -1)
            break;
        printf("Enter student name: ");
        scanf("%s", students[i].Name);
        printf("Enter student GPA: ");
        scanf("%f", &students[i].GPA);
        fwrite(&students[i], sizeof(students[i]), 1 , fp);
        printf("------------------------\n");
    }
    fclose(fp);
    return 0;
}
int main(){
    struct Student student;
    FILE *fp;
    fp = fopen("students.dat" , "rb");
    if(fp==NULL){
        printf("Error opening file\n");
        exit(1);
    }

    printf("The details of the students are: \n");
    while(fread(&student, sizeof(student),1 ,fp) >= 1){
        printf("ID: %d, Name: %s, GPA: %.2f\n",
student.Id,student.Name,student.GPA);
    }
    return 0;
}
```

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Assignment: submit a solution to the following problems (1-4):   (5 points)

Problem 0: is file exists: (see the solution below)

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

int main(){
    FILE* fptr;
    fptr = fopen("filename.txt", "r");

    if (fptr == NULL) {
        printf("The file is not opened. The program will now exit.");
        exit(0);
    }

    printf("The file is exists, opened and ready to read.");
    fclose(fptr);

    return 0;
}
```

Problem 1: write a program that keeps reading from the user characters then store them in a text file.

Problem 2: write a program that shows on console the content of a text file.

Problem 3: write a copy program, is a program that reads from a file its content then writes that content in another file.

Problem 4: write a copy program, is a program that reads from a file its content then writes that content in another file.

Bonus: (5 points)

Write a program split a text file to three text files: "linesStartedWithLetters.txt", "linesStartedWithNumbers.txt" and "othersLines.txt".