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LABTASK#8

Lab Section: 4(lab), 1(theory)

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Laboratory Study:

Task 1 : We performed bus firm seat reservation program in the 5th experiment. We now do the same job with using random-access files. Your program must have 5 options:

- **Option 1:** Calls the function **textFile** to store a formatted list of all reserved seat in a text file called **seats.txt**. This function uses **fread** and the sequential file access techniques.
- **Option 2:** Calls the function **updateSeat** to update a seat's informations. The function will only update a seat that already reserved, so the function first checks to see if the seat number specified by the user is empty. The record is read into structure **seat** with **fread**, then member **seatNum** is compared to 0. If it is 0, the seat contains no information, and a message is printed stating that the seat is empty. If the seat contains information, function **updateSeat** inputs new information of seat like name, surname, gender.
- **Option 3:** Calls the function **newReservation** to add a new reservation to the file. If the user enters a seat number that already reserved, **newReservation** displays an error message that the seat already reserved.
- **Option 4:** Calls the function **deleteReservation** to delete a seat reservation from the file. Deletion is accomplished by asking the user for the seat number and reinitializing the record. If the seat contains no information, **deleteReservation** displays an error message that the seat did not reserv yet.
- **Option 5:** Terminates the program execution.

The code:

```
#include<stdio.h>

#include<stdlib.h>

struct seatdata{

    int seatNum;

    char name[15];

    char surname[15];

    char gender[1];

};

//define structure

int enterChoice(void);

void textfile(FILE *seatsPtr);

void updateReservstion(FILE *fptr);

void newReservation(FILE *fptr);

void deleteReservation(FILE *fptr);

//functions prototype

int enterChoice(void)

{

    int a;

    printf("Enter your choice\n");

    printf("1 - store a formatted text file of seats reserved called seats.txt for printing\n");

    printf("2 - update a reservation\n");

    printf("3 - add a new reservation\n");

    printf("4 - delete a reservation\n");

    printf("5 - end program\n>>");

    //display menu

    scanf("%d",&a);

    //take a number from stdin

    return a;

    //return number

}

void textfile(FILE *seatsPtr)

{

    struct seatdata a={0, "", "", ""};

    FILE *fptr;
```

```

//define file pointer

if((fptr=fopen("seats.dat","w"))==NULL)

    printf("File couldnt be open\n");

//if file couldnt open

    else

//if file open

    rewind(seatsPtr);

    fprintf(fptr,"%-5s%-18s%-18s%-s\n","No","Name","Surname","Gender");

//get the first of the file

        while(!feof(seatsPtr))

    {

//wile not feof

        fread(&a,sizeof(struct seatdata),1,seatsPtr);

//read datas from file

            if(a.seatNum!=0)

                fprintf(fptr,"%-5d%-18s%-18s%-s\n",a.seatNum,a.name,a.surname,a.gender);

//if seat is not empty

                }

//close file

                fclose(fptr);

    }

}

```

```

void updateReservstion(FILE *fptr)

{

    int seatnum;

    struct seatdata a={0,"","",""};

        printf("Enter seat number to update:");

        scanf("%d",&seatnum);

//take seatnum from stdin

        fseek(fptr,(seatnum-1)*sizeof(struct seatdata),SEEK_SET);

        fread(&a,sizeof(struct seatdata),1,fptr);

//seek the point seatnum and read data

            if(a.seatNum==0)

                printf("the seat is empty\n");

            else

                {

```

```

a.seatNum=seatnum;

printf("%d %s %s %s\n",a.seatNum,a.name,a.surname,a.gender);

printf("Enter new name, surname, gender:");

scanf("%s%s%s",a.name,a.surname,a.gender);

//take data from stdin

        printf("%d %s %s %s\n",a.seatNum,a.name,a.surname,a.gender);


fseek(fptr,(a.seatNum-1)*sizeof(struct seatdata),SEEK_SET);

fwrite(&a,sizeof(struct seatdata),1,fptr);

//seek the point seatnum and write to the file
}
}

void newReservation(FILE *fptr)
{
    struct seatdata a={0, "", "", ""};

    int seatnum;

    printf("Enter new seat number to reserve: ");

    scanf("%d",&seatnum);

//take setanum from stdin

    fseek(fptr,(seatnum-1)*sizeof(struct seatdata),SEEK_SET);

    fread(&a,sizeof(struct seatdata),1,fptr);

//seek point andread data

    if(a.seatNum=0)

        printf("Seat have been already reserved\n");

        else

    {

        a.seatNum=seatnum;

        printf("Enter Name, Surname, Gender: ");

        scanf("%s%s%s",a.name,a.surname,a.gender);

        //take data from stdin

                fseek(fptr,(seatnum-1)*sizeof(struct seatdata),SEEK_SET);

                fwrite(&a,sizeof(struct seatdata),1,fptr);

    }//write to the file
}

```

```

void deleteReservation(FILE *fptr)
{
    int seatnum;

    struct seatdata b,a={0, "", "", ""};

    printf("Enter seat number to delete:");

    scanf("%d",&seatnum);

    fseek(fptr,(seatnum-1)*sizeof(struct seatdata),SEEK_SET);

    fread(&b,sizeof(struct seatdata),1,fptr);

    //read data from file

    if(b.seatNum==0)

        printf("seat is empty");

    else

    {

        fseek(fptr,(seatnum-1)*sizeof(struct seatdata),SEEK_SET);

        fwrite(&a,sizeof(struct seatdata),1,fptr);

    } //write data from file
}

main()
{
    int a=1;

    FILE *fPtr;

    //define file ptr

    if((fPtr=fopen("bus.dat","rb+"))==NULL)

        printf("File couldnt open");

    //if file open

    else

    {

        while(a)

        { //while a is not zero

            a=enterChoice();

            //call the function and assign to a

            if(a==1)

                textfile(fPtr);
        }
    }
}

```

```

//if a 1

                else if(a==2)

                    updateReservstion(fPtr);

//if a 2

                else if(a==3)

                    newReservation(fPtr);

//if a 3

                else if(a==4)

                    deleteReservation(fPtr);

//if a 4

                else if(a==5)

                    exit(0);

//if a 5

                else

                    printf("Entered wrong number please try again\n");

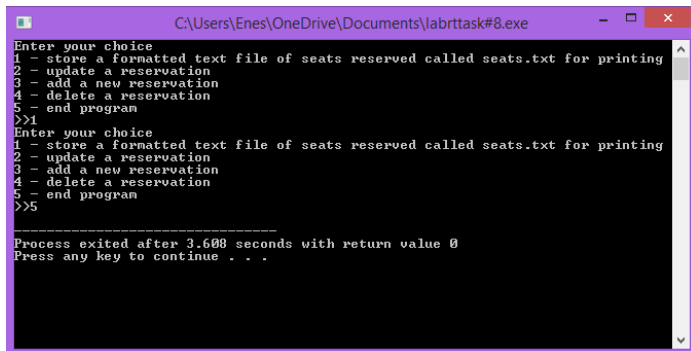
}

fclose(fPtr);

}

```

The first file before the changins



```

C:\Users\Enes\OneDrive\Documents\labrttask#8.exe
Enter your choice
1 - store a formatted text file of seats reserved called seats.txt for printing
2 - update a reservation
3 - add a new reservation
4 - delete a reservation
5 - end program
>>1
Enter your choice
1 - store a formatted text file of seats reserved called seats.txt for printing
2 - update a reservation
3 - add a new reservation
4 - delete a reservation
5 - end program
>>5
-----
Process exited after 3.608 seconds with return value 0
Press any key to continue . . .

```

seats.dat - Not Defteri

Dosya	Düzen	Biçim	Görünüm	Yardım
No	Name	Surname	Gender	
1	EKREM	YAVUZ	M	
11	NINA	SIMONE	F	
21	JIMI	HENDRIX	M	
31	DAVID	GILMOUR	M	

```
C:\Users\Enes\OneDrive\Documents\labrtask#8.exe

Enter your choice
1 - store a formatted text file of seats reserved called seats.txt for printing
2 - update a reservation
3 - add a new reservation
4 - delete a reservation
5 - end program
>>3
Enter new seat number to reserve: 2
Enter Name, Surname, Gender: JOE SATRIANI M
Enter your choice
1 - store a formatted text file of seats reserved called seats.txt for printing
2 - update a reservation
3 - add a new reservation
4 - delete a reservation
5 - end program
>>2
Enter seat number to update:11
11 NINA SIMONE F
Enter new name, surname, gender:BETH HARD F
11 BETH HARD F
Enter your choice
1 - store a formatted text file of seats reserved called seats.txt for printing
2 - update a reservation
3 - add a new reservation
4 - delete a reservation
5 - end program
>>4
Enter seat number to delete:31
Enter your choice
1 - store a formatted text file of seats reserved called seats.txt for printing
2 - update a reservation
3 - add a new reservation
4 - delete a reservation
5 - end program
>>1
Enter your choice
1 - store a formatted text file of seats reserved called seats.txt for printing
2 - update a reservation
3 - add a new reservation
4 - delete a reservation
5 - end program
>>5

-----
Process exited after 50.61 seconds with return value 0
Press any key to continue . . .
```

seats.dat - Not Defteri			
Dosya Düzen Biçim Görünüm Yardım			
No	Name	Surname	Gender
1	EKREM	YAVUZ	M
2	JOE	SATRIANI	M
11	BETH	HARD	F
21	JIMI	HENDRIX	M

After the adding new, upating and deleting reservations