פרויקט מספר 3

#define \_CRT\_SECURE\_NO\_WARNINGS

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

//סטראקטים

typedef struct

{

int day;

int month;

int year;

}Date;

typedef struct

{

int serial\_num;

char full\_name[20];

Date\* pDate;

}Person;

//פונקציה הקולטת את בחירת המשתמש

void print\_menu\_and\_scan(char\* choice)

{

printf("press 1 to add a new person to the list:\npress 2 to print all persons in the list:\npress 3 to sort all persons by age, and then print the sorted list:\npress 4 to save current list to file:\npress 5 to read the file into the list:\npress E or e to exit the program:\n\n======> ");

char c;

scanf(" %c", choice);

printf("\n");

}

void print\_list(Person list[], int length)

{

for (int i = 0; i < length; i++) {

printf("%d %s\t%d %d %d\n", list[i].serial\_num, list[i].full\_name, list[i].pDate->day, list[i].pDate->month, list[i].pDate->year);

} printf("\n");

}

//פונקציה המשווה בין 2 אריכים

int compare(Date d1, Date d2)

{

if (d1.year < d2.year)

return 1;

if (d1.year == d2.year && d1.month < d2.month)

return 1;

if (d1.year == d2.year && d1.month == d2.month &&

d1.day < d2.day)

return 1;

return 0;

}

//פונקציה שמחליפה בין הערכים של שני אנשים

void switch\_persons(Person\* p1, Person\* p2)

{

Person\* pHelp = (Person\*)malloc(sizeof(Person));

strcpy(pHelp->full\_name, p1->full\_name);

pHelp->serial\_num = p1->serial\_num;

pHelp->pDate = p1->pDate;

strcpy(p1->full\_name, p2->full\_name);

p1->serial\_num = p2->serial\_num;

p1->pDate = p2->pDate;

strcpy(p2->full\_name, pHelp->full\_name);

p2->serial\_num = pHelp->serial\_num;

p2->pDate = pHelp->pDate;

free(pHelp);

}

void main()

{

const int MAX = 10;

const char\* names[MAX] = { "sasson\_sassoni","pooh","james\_bond","elvis\_is\_alive!","shilgiya","cleopatra","sissoo\_vesimmhoo" };

const int dates[MAX][3] = { {10,1,1988},{12,12,1948},{4,12,1970},{11,11,1890},{11,11,1948},{1,10,1213},{12,11,1948} };

const char\* f\_name = "Persons.dat";

char choice = ' '; int flag = 0;

int length = 0;

Person\* list = (Person\*)malloc(sizeof(Person));

Date d2 = { 9,11,1800 }; Date d[MAX] = {};

FILE\*fp;

while (1)

{

print\_menu\_and\_scan(&choice);

switch (choice)

{

case '1':

{

if (length == 0)

{

strcpy(list[0].full\_name, names[0]);

list[0].serial\_num = 1;

Date d = { dates[0][0],dates[0][1],dates[0][2] };

list[0].pDate = &d;

length++;

}

else

{

Person\* temp = (Person\*)realloc(list, sizeof(Person) \* (length + 1));

if (temp != NULL)

list = temp;

strcpy(list[length].full\_name, names[length]);

list[length].serial\_num = length + 1;

d[length] = { dates[length][0],dates[length][1],dates[length][2] };

list[length].pDate = &d[length];

length++;

}

}

case '2':

{

print\_list(list, length);

break;

}

case '3':

{

for (int i = 0; i < length; i++)

{

for (int a = i + 1; a < length; a++)

{

if (compare(\*list[i].pDate, \*list[a].pDate) == 0)

{

switch\_persons(&list[i], &list[a]);

}

}

}

print\_list(list, length);

break;

}

case '4':

{

fp = fopen(f\_name, "wb+");

for (int i = 0; i < length; i++)

{

Person\* p = &list[i];

fwrite(p, 1, sizeof(Person), fp);

}

fclose(fp);

printf("List was added!\n");

break;

}

case '5':

{

fp = fopen(f\_name, "rb");

int i = 0;

while (!feof(fp))

{

fread(&list[i], 1, sizeof(Person), fp);

i++;

}

i--;

list = (Person\*)realloc(list, (i) \* sizeof(Person));

print\_list(list,i);

length = i;

printf("List was saved!\n");

break;

}

case 'e':

{

flag = 1;

break;

}

case 'E':

{

flag = 1;

break;

}

}

if (flag == 1)

{

printf("the program ends now...\n good bye...");

break;

}

}

}