#include <stdio.h>

#define MAX 100

#include <stdbool.h>

#include <malloc.h>

typedef struct {

int data[MAX];

int Length;

}SeqList;

SeqList\* Create()

{

SeqList\* new = (SeqList\*)malloc(sizeof(SeqList));

printf("Create Successfully!\n");

return new;

};

void InitList(SeqList\* L)

{

int i;

printf("Please input the length of the list：\n");

scanf("%d", &L->Length);

printf("Please input the values of the elements：\n");

for (i = 0; i < L->Length; i++)

scanf("%d", &L->data[i]);

};

void Destroy(SeqList\*\* L)

{

if (!\*L) {

printf("No seqlist exists!!\n");

return 0;

}

SeqList\* temp = \*L;

\*L = NULL;

free(temp);

printf("Your Seqlist has been destroyed\n");

};

bool ListEmpty(SeqList\* L)

{

return L ? false : true;

};

int ListLength(SeqList\* L)

{

int ListLength = 0;

for (int i = 0; i < L->Length; i++)

{

ListLength++;

}

return ListLength;

};

void DispList(SeqList\* L)

{

for (int i = 0; i < L->Length; i++)

{

printf("%d\t", L->data[i]);

}

printf("\n");

};

int GetElem(SeqList\* L, int i)

{

return L->data[i-1];

};

int LocateElem(SeqList\* L, int e)

{

for (int i = 0; i < L->Length; i++)

{

if (e == L->data[i]) return i;

}

};

int SeqInsert(SeqList\* L, int i, int e)

{

int j;

if (L->Length >= MAX)

{

printf("The List is full！\n");

return 0;

}

if (i<0 || i>L->Length)

{

printf("Location Error！\n");

return 0;

}

if (i == L->Length)

{

L->data[i] = e;

L->Length++;

return 1;

}

for (j = L->Length - 1; j >= i; j--)

L->data[j + 1] = L->data[j];

L->data[i] = e;

L->Length++;

return 1;

};

int SeqDelete(SeqList\* L, int i)

{

int j;

if (L->Length == 0)

{

printf("Empty List!!\n");

return 0;

}

if (i<0 || i>L->Length)

{

printf("The ith element not exist!!\n");

return 0;

}

int data = L->data[i-1];

for (j = i; j <= L->Length - 1; j++)

L->data[j - 1] = L->data[j];

L->Length--;

return data;

};