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/*-----*/
/* TELEPHONE DIRECTORY */
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#include <stdio.h>
#include <iostream>
#include <conio.h>
#include <string.h>
#include <stdlib.h>
int dmenu(); //main menu
void dadd(); //add to list
void dfind(); //search from the list
void dedit(); //edit the record
void ddel(); //delete from the list
void ddisp(); //display all
struct dnode {
char dlname[20], dfname[20], dtel[15];
struct dnode *dnext;
};
typedef struct dnode node;
node *dstart, *dtemp;
int dmenu()
{
int dch;
printf(" TELEPHONE DIRECTORY ");
printf(" ===== ");
printf("Programmed By: Arati Rajbhandari");

printf(" 1. Add ");

printf(" 2. Find ");

printf(" 3. Edit ");

printf(" 4. Delete ");

printf(" 5. Display All ");

printf(" 6. EXIT ");

printf(" Enter your choice(1-6):");

scanf("%d", &dch);
return dch;
}
void dadd()
{
node *dptr,*dprev;
dtemp=(node *)malloc(sizeof(node));
printf("First name: ");
scanf("%s", dtemp->dfname);
printf("Last name:");
scanf("%s", dtemp->dlname);
printf("Telephone No.: ");
scanf("%s", dtemp->dtel);
dtemp->dnext=NULL;
if(dstart==NULL) dstart=dtemp;
else {

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    dprev=dptr=dstart;
    while(strcmp(dtemp->dfname,dptr->dfname)>0){
        dprev=dptr;
        dptr= dptr->dnext;
        if (dptr == NULL) break;
    }
    if(dptr==dprev) {
        dtemp->dnext=dstart;
        dstart=dtemp;
    }
    else if(dptr==NULL)
        dprev->dnext=dtemp;
    else {
        dtemp->dnext=dptr;
        dprev->dnext=dtemp;
    }
}
}

void dfind()
{
    node *dptr;
    char dstr[20];
    if(dstart==NULL) {
        printf("\n\t\t\tTelephone Directory is Empty....\n");
    getch();
        return;
    }
    printf("First Name to Find : ");
    scanf("%s",dstr);
    dptr=dstart;
    while(strcmp(dptr->dfname,dstr)!=0){
        dptr= dptr->dnext;
        if (dptr == NULL) break;
    }
    if(dptr!=NULL) {
        printf("First Name : %s\n",dptr->dfname);
        printf("Last Name : %s\n",dptr->dlname);
        printf("Phone Number : %s\n",dptr->dtel);
    }
    else {
        printf("No Matching Records Found ..... \n");
    }
    getch();
}

void dedit()
{
    node *dptr;
    char dstr[20];
    if(dstart==NULL) {
        printf("\n\t\t\tTelephone Directory is Empty....\n");
    getch();
        return;
    }
    printf("First Name to Edit : ");
    scanf("%s",dstr);
    dptr=dstart;
    while(strcmp(dptr->dfname,dstr)!=0){

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        dptr= dptr->dnext;
if (dptr == NULL) break;
    }
    if(dptr!=NULL) {
        printf("First Name : %s", dptr->dfname);

        scanf("%s", dptr->dfname);
        printf("Last Name : %s", dptr->dlname);

        scanf("%s", dptr->dlname);
        printf("Phone Number : %s", dptr->dtel);

        scanf("%s", dptr->dtel);
    }
    else {
        printf("No Matching Records Found .....\\n");
    }
    getch();
}
void ddel()
{
    node *dptr,*dprev,*dtemp;
    char dstr[20],dyn='n';
    if(dstart==NULL) {
        printf("\\n\\t\\t\\tTelephone Directory is Empty....\\n");
    getch();
        return;
    }
    printf("First Name to Delete : ");
    scanf("%s",dstr);
    dprev=dptr=dstart;
    while(strcmp(dptr->dfname,dstr)!=0){
        dprev=dptr;
        dptr= dptr->dnext;
    if (dptr == NULL) break;
    }
    if(dptr!=NULL){
        printf("\\nDeleting Record.....Confirm [y/n]: ");
        dyn=getch();
    printf("\\n\\n-----");
        printf("\\nFirst Name : %s\\n",dptr->dfname);
        printf("Last Name : %s\\n",dptr->dlname);
        printf("Phone Number : %s\\n",dptr->dtel);
    printf("-----");
        if(dyn=='y') {
            if (dptr==dstart) {
                dtemp=dstart->dnext;
                free(dstart);
                dstart=dtemp;
            }
            else {
                dtemp=dptr->dnext;
                free(dptr);
                dprev->dnext=dtemp;
            }
            printf("\\n\\n1 Record Deleted....");
        }
    }
}

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        else
            printf("\n\nRecord not Deleted....");
    }
    else {
        printf("\nNo Matching Records Found .....");
    }
    getch();
}
void ddisp()
{
    node *dptr;
    if(dstart==NULL) {
        printf("\n\t\tTelephone Directory is Empty....\n");
        getch();
        return;
    }

    printf("\t\t-----\n");
    for(dptr=dstart; dptr!=NULL; dptr=dptr->dnext) {
        printf("\t\tFirst name: %s", dptr->dfname);
        printf("\n\t\tLast name:%s", dptr->dlname);
        printf("\n\t\tTelephone No.: %s", dptr->dtel);
        printf("\n\t\t-----\n");
    }
    getch();
}
int main()
{
    int dch;
    dstart=(node *)malloc(sizeof(node));
    dstart=NULL;
    do{

        dch=dmenu();

        switch(dch) {
            case 1: dadd();
                    break;
            case 2: dfind();
                    break;
            case 3: dedit();
                    break;
            case 4: ddel();
                    break;
            case 5: ddisp();
                    break;
        }
    }while(dch!=6);
}

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