

Contact.c原始程式

```
#include <stdio.h>
#include "Contact.h"
#include <string.h>

Contact getAContact()
{
    int i=0;
    Contact c;
    char tempName[31];
    char *p, tempc;
    printf("Name: ");
    //   scanf(" %s %s", c.name.firstname, c.name.lastname);
    fgets(tempName,32,stdin);

    p=tempName;
    i=0;
    while(*p!=' ')
    {
        c.name.firstname[i]=*p;
        i++;
        p++;
    }
    c.name.firstname[i]='\0';
    i=0;
    p++;
    while(*p!='\n')
    {
        c.name.lastname[i]=*p;
        i++;
        p++;
    }
    c.name.lastname[i]='\0';
    printf("Gender (M/F): ");

    scanf(" %c",&tempc);
    if(tempc=='F')
        c.gender=Female;
    else if(tempc=='M')
        c.gender=Male;
    short month, day, year;
```

```
printf("Birthday (YYYY/MM/DD): ");

scanf(" %hd/%hd/%hd", &year, &month, &day);

c.birthday.month = (month-1);
c.birthday.day=day;
c.birthday.year=year;

printf("Phone Type (L/M): ");
scanf(" %c",&tempc);
if(tempc=='L')
{
    c.phonetype=LandLine;
    char area[4];
    char number[8];
    printf("Number: ");
    scanf(" (%[^)])%s",area, number);
    strcpy(c.phone.landline.areacode, area);
    strcpy(c.phone.landline.number, number);
}
else if(tempc=='M')
{
    c.phonetype=MobilePhone;
    char number[11];
    printf("Number: ");
    scanf(" %s", number);
    strcpy(c.phone.mobile.number, number);
    printf("Carrier (C/T/F): ");
    scanf(" %c", &tempc);
    if(tempc=='C')
        c.phone.mobile.carrier=CHT;
    else if(tempc=='T')
        c.phone.mobile.carrier=TWN;
    else if(tempc=='F')
        c.phone.mobile.carrier=FET;
}
printf("Address: ");
scanf(" %[^\\n]",c.address);
getchar();
return c;
}

void showDate(Date d)
{
    char months[][10]={"January", "February", "March", "April", "May",
"June",
"July","August", "September", "October", "November",
"December"};

    printf("%s %d", months[d.month], d.day);
    switch(d.day)
```

```
{
    case 1:
    case 21:
    case 31:
        printf("st");
        break;
    case 2:
    case 22:
        printf("nd");
        break;
    case 3:
    case 23:
        printf("rd");
        break;
    default:
        printf("th");
        break;
}
printf(", %d", d.year);
}

void showAContact(Contact c)
{
    printf("%s %s (", c.name.firstname, c.name.lastname);
    if(c.gender==Male)
        printf("Male");
    else
        printf("Female");
    printf(") ");
    showDate(c.birthday);
    if(c.phonetype==LandLine)
        printf(", (%s)%s,", c.phone.landline.areacode,
c.phone.landline.number);
    else
    {
        printf(", %s(", c.phone.mobile.number);
        if(c.phone.mobile.carrier==CHT)
            printf("ChungHwa Telecom");
        else if(c.phone.mobile.carrier==TWN)
            printf("Taiwan Mobile");
        else
            printf("FarEasTone");
        printf("),");
    }
    printf(" %s\n", c.address);
}

int compareAge(Contact a, Contact b)
{
```

```
// return 1 if a is older
// return 0 if a and b have the same birthday
// return -1 if b is older
int adays, bdays;
adays=a.birthday.year*365+a.birthday.month*30+a.birthday.day;
bdays=b.birthday.year*365+b.birthday.month*30+b.birthday.day;
if(adays>bdays)
    return -1;
else if(adays<bdays)
    return 1;
return 0;
}

void sortContacts(Contact contacts[])
{
    int i,j;
    for(i=0;i<numContact-1;i++)
    {
        for(j=0;j<numContact-i-1;j++)
        {
            if( compareAge(contacts[j],contacts[j+1])==1)
            {
                Contact temp;
                temp=contacts[j];
                contacts[j]=contacts[j+1];
                contacts[j+1]=temp;
            }
        }
    }
}
```

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