Problem Statement & Assignment:

Write a C program to create a list of software application details. The details of application include name, author, version, publishing year , price

Perform the following with respect to the list of application created.

a) Display all the details of application by a given author.

b) Sort the details of application in the increasing order of price.

c) Display the details of applications published by a given publisher in a given year.

d) Sort the list of applications in the increasing order of two fields , author and publishing year of the books.

Tools / Frameworks to be used:

1. C language.

ANSWER :

#include<stdio.h>

#include<conio.h>

#include<string.h>

#include<stdlib.h>

#define MAX\_LIMIT 20

Here I was used standard input ,output file, string file, standard library file and console input, output file . #define MAX\_LIMIT 20 is used to store the string at least (MAX\_LIMIT + 1) characters if your intention is to keep the newline character. This is done so there is enough space for the null terminating character ‘\0’ to be added at the end of the string.

struct application{ // create structure for store the data

char name[20]; // name of the software application

char author[20]; // name of author , who publish the application

float version; // version of the software

int year; // software plublished year

long price; // price of the software

Here I was create a structure for store the data, and create a members of the structure. The members are char name,char author,float version,int year.long price.

void swap1 (int\*a,int\*b){ // This swap function used for swap the integer values

int temp = \*a;

\*a = \*b ;

\*b = temp;

}

void swap3 (long\*a,long\*b){ // This swap function used for swap the long integer values

long temp = \*a;

\*a = \*b ;

\*b = temp;

}

void swap2 (float\*a,float\*b){ //This swap function used for swap the float values

float temp = \*a;

\*a = \*b ;

\*b = temp;

}

Here I used the void swap function to swap the integer (swap1) , float (swap2) and Long integer value(swap3).

int main(){

char temp[50];

int n;

int i,j;

printf("Enter The Number of software:\n");

scanf("%d",&n);

fflush(stdin); // The use of this line to clear the buffer

struct application soft[n]; // array of object

for(i=0;i<n;i++){

fflush(stdin);

printf("Enter The Software Application Name:");

fflush(stdin);

fgets(soft[i].name,MAX\_LIMIT,stdin);

printf("Enter The Author name:");

fgets(soft[i].author,MAX\_LIMIT,stdin);

printf("Enter The Software version:");

scanf("%f",&soft[i].version);

printf("Enter The Softerware Publised year:");

scanf("%d",&soft[i].year);

printf("Enter The Price Of The Software:");

scanf("%ld",&soft[i].price);

printf("\n");

}

Inside the main function, I was create array object for structure . It is a n number array. Here I used fflush(stdin); for clear the buffer date so we avoid the input skip problem in output screen. After that I was getting t from input from the author(user).The inputs are software application name ( character string),author name(character string),version of the software application(float),year of the software published(integer),price of the software(long integer).

for(i=0;i<n;i++){

printf("Software Application Name Is:%s",soft[i].name);

printf("Author Name Is:%s",soft[i].author);

printf("Software Version Is :%.2f\n",soft[i].version);

printf("Softerware Publised Year:%d\n",soft[i].year);

printf("Price Of The Software:%ld Rupees\n",soft[i].price);

printf("\n");

}

After getting the input from the author(user), I was print the all details using the for loop .

for(i=1;i<=n;i++){

for(j=0;j<n-1;j++){

if(soft[j].price>soft[j+1].price){

swap3(&soft[j].price,&soft[j+1].price);

swap1(&soft[j].year,&soft[j+1].year);

swap2(&soft[j].version,&soft[j+1].version);

strcpy(temp,soft[j].name);

strcpy(soft[j].name,soft[j+1].name);

strcpy(soft[j+1].name,temp);

strcpy(temp,soft[j].author);

strcpy(soft[j].author,soft[j+1].author);

strcpy(soft[j+1].author,temp);

}

}

}

Here, print the details according their price in increasing order. So I was used the bubble short for short for the integer data type and normal swapping method for character string data type.Basic string function used for the character string data type.After shorting the date I was print the all details.

int find;

int count =0;

printf("Enter The Year For Search:");

scanf("%d",&find);

printf("\*\*software application details,given year by author\*\*\n");

printf("\n");

for(i=0;i<n;i++){

if(soft[i].year==find){

printf("Software Application Name is:%s",soft[i].name);

printf("Author Name Is:%s",soft[i].author);

printf("Software version is :%.2f\n",soft[i].version);

printf("Softerware Publised year was:%d\n",soft[i].year);

printf("Price Of The Software:%ld rupees\n",soft[i].price);

printf("\n");

}

else{

count++;

}

if(count==n){

printf("No Recard Found\n");

}

Here I was getting year from author and search the year inside the list of our software application using the if statement. It’s present inside the list

I was print all the details in given year. Else I was print No Record found.

for(i=1;i<=n;i++){

for(j=0;j<n-1;j++){

if(soft[j].year>soft[j+1].year){

swap3(&soft[j].price,&soft[j+1].price);

swap1(&soft[j].year,&soft[j+1].year);

swap2(&soft[j].version,&soft[j+1].version);

strcpy(temp,soft[j].name);

strcpy(soft[j].name,soft[j+1].name);

strcpy(soft[j+1].name,temp);

strcpy(temp,soft[j].author);

strcpy(soft[j].author,soft[j+1].author);

strcpy(soft[j+1].author,temp);

}

}

}

Here, print the details according their author name in alphabetical order. So I was used the bubble short for short for the integer data type and normal swapping method for character string data type. Basic string function used for the character string data type.After shorting the date I was print the all details.

for(i=1;i<=n;i++){

for(j=0;j<n-1;j++){

if(soft[j].year>soft[j+1].year){

swap3(&soft[j].price,&soft[j+1].price);

swap1(&soft[j].year,&soft[j+1].year);

swap2(&soft[j].version,&soft[j+1].version);

strcpy(temp,soft[j].name);

strcpy(soft[j].name,soft[j+1].name);

strcpy(soft[j+1].name,temp);

strcpy(temp,soft[j].author);

strcpy(soft[j].author,soft[j+1].author);

strcpy(soft[j+1].author,temp);

}

}

}

Here, print the details according their year in increasing order. So I was used the bubble short for short for the integer data type and normal swapping method for character string data type.Basic string function used for the character string data type.After shorting the date I was print the all details.

After completing my code , I was check using sample inputs and I getting

Exact output.. I was share my output given below









