**CSE 115 Lab on Structure and functions – Ara2**

1. **Passing a Structure as function arguments (book records):**

#include <stdio.h>

#include <string.h>

struct Books {

char title[50];

char author[50];

char subject[100];

int book\_id;

};

void printBook( struct Books book ); /\* function declaration \*/

void main( ) {

struct Books Book1, Book2;

/\* book 1 specification \*/

strcpy( Book1.title, "C Programming");

strcpy( Book1.author, "Nuha Ali");

strcpy( Book1.subject, "C Programming Tutorial");

Book1.book\_id = 6495407;

/\* book 2 specification \*/

strcpy( Book2.title, "Telecom Billing");

strcpy( Book2.author, "Zara Ali");

strcpy( Book2.subject, "Telecom Billing Tutorial");

Book2.book\_id = 6495700;

printBook( Book1 );

printBook( Book2 );

}

void printBook( struct Books book ) {

printf( "Book title : %s\n", book.title);

printf( "Book author : %s\n", book.author);

printf( "Book subject : %s\n", book.subject);

printf( "Book book\_id : %d\n", book.book\_id);

}

1. **Passing an array of Structures as function arguments (book records):**

#include <stdio.h>

#include <string.h>

#define MAX\_BOOKS 1000

int NUM\_BOOKS=0; //global variable containing the actual number of books

struct Books {

char title[50];

char author[50];

char subject[100];

int book\_id; } ;

void printBooks( struct Books b[] )

{

int i;

printf("\n\n We have the following books:\n\n");

for(i=0; i < NUM\_BOOKS; i++)

{

printf( "Book title : %s\n", b[i].title);

printf( "Book author : %s\n", b[i].author);

printf( "Book subject : %s\n", b[i].subject);

printf( "Book book\_id : %d\n\n", b[i].book\_id);

}

}

void readBooks( struct Books books[] )

{

/\* read book specifications from user user until s/he enters empty string as title\*/

for(int i=0; i < MAX\_BOOKS; i++)

{

printf("Enter book title (press just enter to finish): ");

gets(books[i].title);

if(strcmp(books[i].title, "")==0) break;

printf("Enter author-names: ");

gets(books[i].author);

printf("Enter subject: ");

gets(books[i].subject);

printf("Enter id: ");

scanf("%d", &books[i].book\_id);

fflush(stdin);

NUM\_BOOKS++; //update the number of books we have

}

}

void main( )

{

struct Books books[MAX\_BOOKS];

readBooks(books);

printBooks( books );

}

**Try yourself : Write a function called search that takes an array of Books structures and a string called title i.e. the header of the function will be:** void search(struct Books b[], char title[])**. This function finds the book in the array b[] whose title is the same as the parameter called title and then prints all the info (title, authors, id, subject) of that book.**

**Exercise:**

1. Following practice program 2, write the functions: input (like read), output, edit, and search functions (if you haven’t done so already) for the array of structures you are using in your project. The input function fill up your array (of structures) by taking user inputs, the output function should print the contents of your array, the search function should take an id/name as the search key and then print the info of the i-th element of your array if the id/name of i-th element matches with the search key, and finally the edit function should allow the user to replace the i-th element of your array with new values.
2. Create a menu in main function from which the user will choose whether s/he wants to read, print, edit, or search and call the corresponding function upon user input.

**Assignment:**

1. Add the functions to insert and delete a record from your array of structures.