**LAB Week 12**

**Name: Muhammad Talha Shafiq Choudhary**

**Reg#:SP21-BSE-008**

## Structures

### Objectives

* The objective of this exercise is to get you to write, compile and run more complex programs in C which make use of user defined data structures.

### Pre-Lab Tasks

**Exercise 1:** Create a structure named “Book”, with four data members ISSN[Int], Title[String], Author[String], Price[Double]. Create a variable of type Book initialize it by scanning values form user and then display them.

|  |
| --- |
| **Solution 1:**  #include <stdio.h>  #include <string.h>  typedef struct Book  {  int ISSN;  char title[100];  char author[100];  double price;  } Data;  int main()  {  Data Book;  printf("Enter the ISSN Of Book: ");  scanf("%d", &Book.ISSN);  printf("Enter the Book title: ");  scanf(" %[^\n]%\*c", Book.title);  printf("Enter the Author NAME: ");  scanf(" %[^\n]%\*c", Book.author);  printf("Enter the PRICE: ");  scanf("%lf", &Book.price);  printf("\t----------Book Record Display\n");  printf("ISSN: %d \t Book Name: %s \t Author Name: %s \t Rs. %.2lf", Book.ISSN, Book.title, Book.author, Book.price);  } |

### Lab Tasks

**Exercise 1:** Create the same structure of Book in the prelab task. Now create array of type Book and take information of 10 books from the user and store it in that array. Now ask user to enter ISSN number of any book and display the record of that book.

|  |
| --- |
| **Solution :**  #include <stdio.h>  #include <string.h>  typedef struct Book  {  int ISSN;  char title[100];  char author[100];  double price;  } Data;  int main()  {  Data Book[10];  int i,j;  for(i=0;i<=9;i++)  {  printf("\nEnter book %d ISSN:",i+1);  scanf("%d",&Book[i].ISSN);  for(j=0;j<i;j++)  {  if(Book[i].ISSN == Book[j].ISSN)  {  printf("\t\tISSN repeated Program terminated.\n");    }  }  printf("Enter the Book title: ");  scanf(" %[^\n]%\*c", Book[i].title);  printf("Enter the Author NAME: ");  scanf(" %[^\n]%\*c", Book[i].author);  printf("Enter the PRICE: ");  scanf("%lf", &Book[i].price);  }  int Issn;  printf("Now enter an ISSN number to search: ");  scanf("%d",&Issn);    for(i=0;i<=9;i++)  {  if(Issn == Book[i].ISSN)  {  printf("\t----------Book Record Display\n");  printf("ISSN: %d \t Book Name: %s \t Author Name: %s \t Rs. %.2lf", Book[i].ISSN, Book[i].title, Book[i].author, Book[i].price);  }  }    } |