CS19003: Programming and Data Structures Laboratory

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http://cse.iitkgp.ac.in/~aritrah/course/lab/PDS/Spring2021/

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Structures

Structure is a user defined data type available in C, which allows you to combine data items of different kinds.

```
struct Books
{
    char  title[50];
    char  author[50];
    char  subject[100];
    int   book_id;
};
```

```
int main( )
{
    struct Books Book1;
    /* Declare Book1 of type Book */
    struct Books Book2;
    /* Declare Book2 of type Book */

    /* book 1 specification */
    strcpy( Book1.title, "C Programming");
    strcpy( Book1.author, "Nuha Ali");
    strcpy( Book1.subject, "C Programming");
    Book1.book_id = 6495407;

    /* book 2 specification */
    strcpy( Book2.title, "Telecom Billing");
    strcpy( Book2.author, "Foolan Barik");
    strcpy( Book2.subject, "Telecoms");
    Book2.book_id = 6495700;
```

```
/* print Book1 info */
   printf("Bk1 title %s\n", Book1.title);
   printf("Bk1 author %s\n", Book1.author);
   printf("Bk1 sub %s\n", Book1.subject);
   printf("Bk1 id %d\n", Book1.book_id);

   /* print Book2 info */
   printf("Bk2 title %s\n", Book2.title);
   printf("Bk2 author %s\n", Book2.author);
   printf("Bk2 sub %s\n", Book2.subject);
   printf("Bk2 id %d\n", Book2.book_id);

   return 0;
}
```

Structures as Function Arguments

```
struct Books
{
    char  title[50];
    char  author[50];
    char  subject[100];
    int   book_id;
};/* function declaration */
void printBook( struct Books book );
int main( )
{ //after book specification
  /* print Book1 info */
  printBook( Book1 );
  /* Print Book2 info */
  printBook( Book2 );
  return 0;
}
```

Structures as Function Arguments


```
void printBook( struct Books book )
{
   printf("Book title: %s\n", book.title);
   printf("Book author: %s\n", book.author);
   printf("Book sub: %s\n", book.subject);
   printf("Book id: %d\n", book.book_id);
}
```

- The function body

Array of Structures

```
struct inventory {
        int part_no;
        float cost;
        float price;
};

struct inventory table[4];
```

Thank You