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Subject: OOP Lab

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1. WAP to store records of book as structured data. And print the details of the book having least price among all, where the book members are- title, author name, price & pages.

```c
oop-lab > lab-3-oop > C quest1.c > ...
1   /*WAP to store records of book as structured data. And print the details of the book having
2   least price among all, where the book members are- title, author name, price & pages.*/
3
4   #include<stdio.h>
5   #include<conio.h>
6   #include<string.h>
7   #define SIZE 20
8
9   struct bookdetail
10  {
11      char name[20];
12      char author[20];
13      int pages;
14      int price;
15
16  };
17
18  void output(struct bookdetail v[],int n);
19
```

```c
20  void main()
21  {
22      struct bookdetail b[SIZE];
23      int n,i;
24      printf("Enter the numbers of books: ");
25      scanf("%d",&n);
26      printf("\n");
27      for(i=0;i<n;i++)
28      {
29          printf("Book %d Detail: \n",i+1);
30          printf("\nEnter the Book Name:\n");
31          scanf("%s",b[i].name);
32
33          printf("Enter the Author of Book:\n");
34          scanf("%s",b[i].author);
35
36          printf("Enter the Pages of Book:\n");
37          scanf("%d",&b[i].pages);
38
39          printf("Enter the Price of Book:\n");
40          scanf("%d",&b[i].price);
41
42      }
43
44      output(b,n);
45
```

```c
45
46  }
47
48  void output(struct bookdetail v[],int n)
49  {
50      int i,d,min=v[0].price;
51      for(i=0;i<n;i++)
52      {
53          if(v[i].price<min)
54          {
55              min=v[i].price;
56              d=i;
57          }
58      }
59
60      printf("\n");
61      printf("Details of book having minimum price: \n");
62      printf("Title: %s\n Author: %s\n Price: %d\n Pages: %d\n",v[d].name,v[d].author,v[d].price,v[d].pages);
63  }
64
```

Output:

```
PS C:\PRAJUKTA\learning-languages\programming\kiit-labs> cd "c:\PRAJUKTA\learning-languages\programming\kiit-labs\oop-lab\lab-3-oop\" ; if ($?) { gcc quest1.c -o
quest1 } ; if ($?) { .\quest1 }
Enter the numbers of books: 2

Book 1 Detail:

Enter the Book Name:
ABC
Enter the Author of Book:
Rowling
Enter the Pages of Book:
212
Enter the Price of Book:
299
Book 2 Detail:

Enter the Book Name:
PQR
Enter the Author of Book:
Nicola
Enter the Pages of Book:
200
Enter the Price of Book:
399

Details of book having minimum price:
Title: ABC
 Author: Rowling
 Price: 299
 Pages: 212
PS C:\PRAJUKTA\learning-languages\programming\kiit-labs\oop-lab\lab-3-oop> []
```

2. WAP to create a structure of the Time where members are hours, minutes and seconds. Find the subtraction between two time variable and print their difference.

```c
1    /*WAP to create a structure of the Time where members are hours, minutes and seconds.
2    Find the subtraction between two time variable and print their difference.*/
3
4    #include <stdio.h>
5    struct TIME {
6        int seconds;
7        int minutes;
8        int hours;
9    };
10
11   void differenceBetweenTimePeriod(struct TIME t1,
12                                    struct TIME t2,
13                                    struct TIME *diff);
14
15   int main()
16   {
17       struct TIME startTime, stopTime, diff;
18
19       printf("Enter the start time. \n");
20       printf("Enter hours, minutes and seconds: ");
21       scanf("%d %d %d", &startTime.hours,
22             &startTime.minutes,
23             &startTime.seconds);
24
25       printf("Enter the stop time. \n");
26       printf("Enter hours, minutes and seconds: ");
27       scanf("%d %d %d", &stopTime.hours,
28             &stopTime.minutes,
29             &stopTime.seconds);
```

```c
31       // Difference between start and stop time
32       differenceBetweenTimePeriod(startTime, stopTime, &diff);
33       printf("\nTime Difference: %d:%d:%d - ", startTime.hours,
34             startTime.minutes,
35             startTime.seconds);
36       printf("%d:%d:%d ", stopTime.hours,
37             stopTime.minutes,
38             stopTime.seconds);
39       printf("= %d:%d:%d\n", diff.hours,
40             diff.minutes,
41             diff.seconds);
42       return 0;
43   }
44
45   // Computes difference between time periods
46   void differenceBetweenTimePeriod(struct TIME start,
47                                    struct TIME stop,
48                                    struct TIME *diff)
49   {
50       while (stop.seconds > start.seconds)
51       {
52           --start.minutes;
53           start.seconds += 60;
54       }
55       diff->seconds = start.seconds - stop.seconds;
```

```c
56       while (stop.minutes > start.minutes)
57       {
58           --start.hours;
59           start.minutes += 60;
60       }
61       diff->minutes = start.minutes - stop.minutes;
62       diff->hours = start.hours - stop.hours;
63   }
```

Output:

```
PS C:\PRAJUKTA\learning-languages\programming\kiit-labs> cd "c:\PRAJUKTA\learning-languages\programming\kiit-labs\oop-lab\lab-3-oop\" ; if ($?) { gcc quest2.c -o
quest2 } ; if ($?) { .\quest2 }
Enter the start time.
Enter hours, minutes and seconds: 2 12 40
Enter the stop time.
Enter hours, minutes and seconds: 1 10 10

Time Difference: 2:12:40 - 1:10:10 = 1:2:30
PS C:\PRAJUKTA\learning-languages\programming\kiit-labs\oop-lab\lab-3-oop> []
```