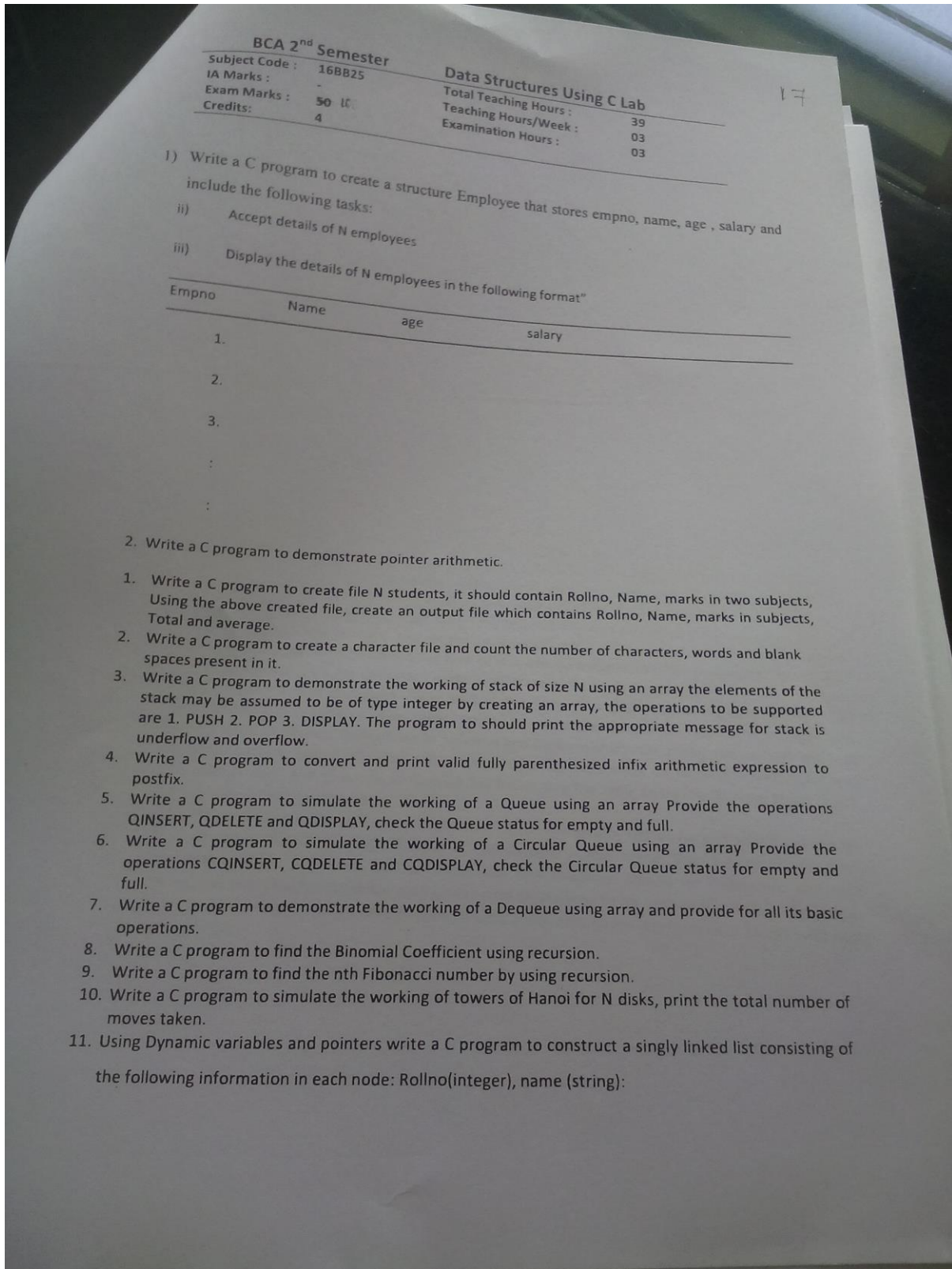


## Data Structure Lab Program List for 1 Year BCA, Davanagere University.



The operations to be supported are:

1. LINSERT – Inserting a node in the front of the list
2. LDELETE – deleting a node based on rollno
3. LSEARCH – searching a node on rollno
4. LDISPLAY – Displaying the data in all the nodes

12. Write a C program to create a doubly linked list where each node consists of the following information: left link, data(integer), right link. The operations to be supported are:

1. INSERT – Insert a node at the end of the doubly linked list
2. DELETE – Delete any node from the doubly linked list
3. DISPLAY – Display the data in all the nodes

13. Using dynamic variables and pointer create a binary search tree of integers and perform the following operations:

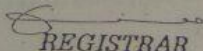
1. Given a key, perform a search in the binary search tree and insert the key if it is not a duplicate key.
2. Traverse the tree using inorder traversal method.

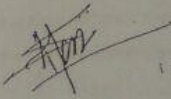
Examination:

- One Question has to be given from the above list (Carries 25 Marks).
- One more question has to be given by the examiner by his choice and that question need not be in the list (Carries 15 Marks).
- Student has to answer and execute both questions.

Marks Distribution:

Criteria		Marks	
		Question from The List	Examiner's Question
Practical Proper	Writing Program	20	20
	Execution	15	15
	Total	70	
Viva		10	
Report		20	
Total		100	

  
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## Program 1

```
#include<stdio.h>
#include<conio.h>
struct Employee
{
    int Empno;
    char name[20];
    int age;
    unsigned long salary;
};
void printEmployeeDetails();
void main()
{
    clrscr();
    printEmployeeDetails();
    getch();
}
void printEmployeeDetails()
{
    int n,i;
    struct Employee empArray[50];
    printf("Enter the number of Employee Details\n");
    scanf("%d",&n);
    for(i=0;i<n;i++)
    {
        printf("Enter the %d employee Empno\n",(i+1));
        scanf("%d",&empArray[i].Empno);
        printf("Enter the %d employee Name\n",(i+1));
        scanf("%s",&empArray[i].name);
        printf("Enter the %d employee Age\n",(i+1));
        scanf("%d",&empArray[i].age);
        printf("Enter the %d employee Salary\n",(i+1));
        scanf("%lu",&empArray[i].salary);
    }
    printf("_____ \n");
    printf("Empno\tName\tAge\tSalary\n");
    printf("_____ \n");
    for(i=0;i<n;i++)
    {
        printf("%d\t%s\t%d\t%lu\n",empArray[i].Empno,empArray[i].name,
            empArray[i].age,empArray[i].salary);
    }
}
}
```

OUTPUT:

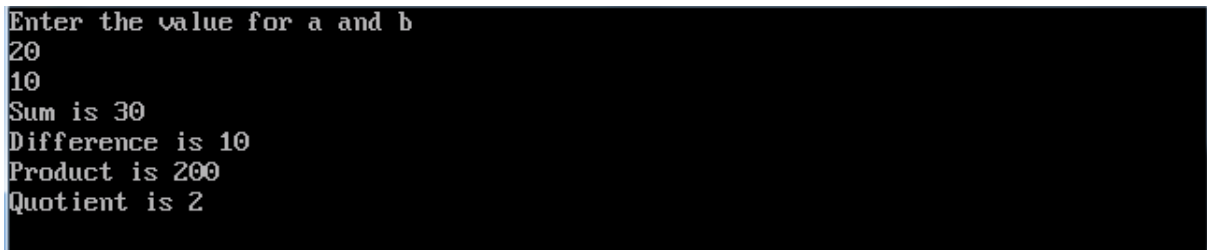
```
Enter the number of Employee Details
2
Enter the 1 employee Empno
121
Enter the 1 employee Name
Raghu
Enter the 1 employee Age
29
Enter the 1 employee Salary
50000
Enter the 2 employee Empno
122
Enter the 2 employee Name
Ganesh
Enter the 2 employee Age
20
Enter the 2 employee Salary
30000
```

Empno	Name	Age	Salary
121	Raghu	29	50000
122	Ganesh	20	30000

## Program 2

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a,b;
    int *ptrA,*ptrB;
    //int* ptrb;
    clrscr();
    printf("Enter the value for a and b");
    scanf("%d%d",&a,&b);
    ptrA = &a;
    ptrB = &b;
    printf("Sum is %d\n",(*ptrA + *ptrB));
    printf("Difference is %d\n",(*ptrA - *ptrB));
    printf("Product is %d\n",(*ptrA * *ptrB));
    printf("Quotient is %d\n",(*ptrA / *ptrB));
    getch();
}
```

OUTPUT:

A screenshot of a terminal window showing the output of the C program. The text is as follows:

```
Enter the value for a and b
20
10
Sum is 30
Difference is 10
Product is 200
Quotient is 2
```

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