



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21

Experiment – No-10

Objective: POINTERS		
Scheduled Date	Compiled Date	Submission Date
20-JAN-2021	20-JAN-2021	21-JAN-2021

IMPLEMENT POINTER ARITHMETIC.

ALGORITHM:

- 1.START.
- 2.DECLARE FUNCTIONS ADDITION(),SUBTRACTION(),MULTIPLICATION(),DIVISION().
- 3.DECLARE VARIABLES LOCALLY.
- 4.ASK VALUE OF VARIABLE.
- 5.CREATE MENU FOR SWITCH.
- 6.ASK VALUE FOR SWITCH.
- 7.START SWITCH AND INSERT FUNCTION.
- 8.DECLARE DEFINITION OF FUNCTIONS:
- 9.END.

ADDITION()

```
int *p,*q,*r;
int c;
p=&x;
q=&y;
r=&c;
*r= *p +*q;
```

SUBTRACTION()

```
int *p,*q,*r;
int c;
p=&x;
q=&y;
r=&c;
*r= *p **q;
```

MULTIPLICATION()

```
int *p,*q,*r;
int c;
p=&x;
q=&y;
r=&c;
*r= *p **q;
```

DIVISION()

```
int *p,*q,*r;
int c;
p=&x;
q=&y;
```



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

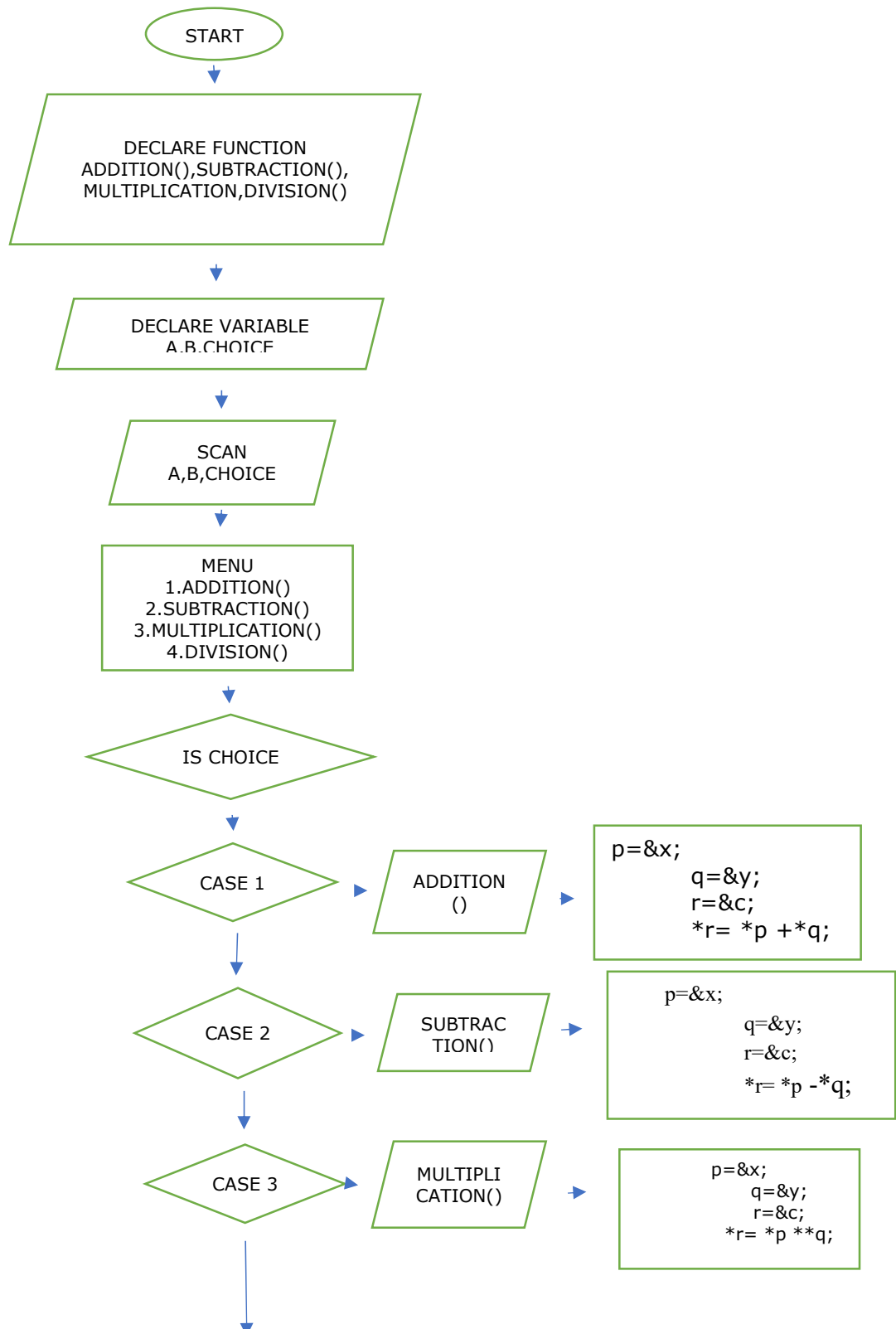
Problem Solving Using C Lab

KCA 151: Session 2020-21

```
r=&c;
```

```
*r= *p / *q;
```

FLOWCHART:





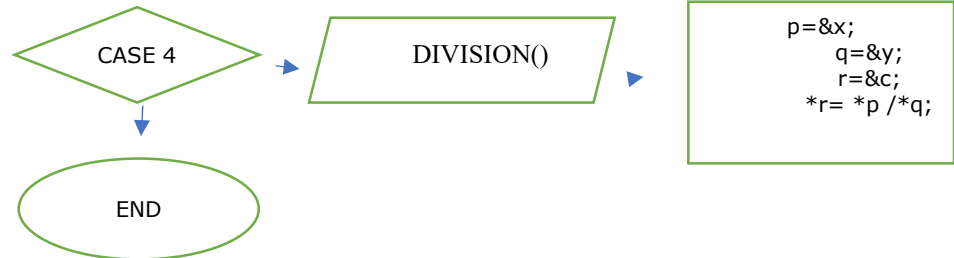
KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21



Program :

```
#include<stdio.h>
int addition(int,int);
int subtraction(int,int);
int multiplication(int ,int);
int division(int,int);
void main()
{
    int a,b,choice;
    printf("enter the value to do the operation ");
    scanf("%d%d",&a,&b);
    printf("choose the operation : \n1.
addition.\n2.subtraction.\n3.multiplication.\n4.division.\n");
    scanf("%d",&choice);
    switch(choice)
    {
        case 1:addition(a,b);break;
        case 2:subtraction(a,b);break;
        case 3:multiplication(a,b);break;
        case 4:division(a,b);break;
    }
}

int addition(int x,int y)
{
    int *p,*q,*r;
    int c;
    p=&x;
    q=&y;
    r=&c;
    *r= *p +*q;
    printf("addition of %d and %d is %d ",x,y,*r);
}

int subtraction(int x,int y)
{
```



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21

```
int *p,*q,*r;
int c;
p=&x;
q=&y;
r=&c;
*r= *p -*q;
printf("\n\nsubtraction of %d and %d is %d ",x,y,*r);
}
int multiplication(int x,int y)
{
    int *p,*q,*r;
    int c;
    p=&x;
    q=&y;
    r=&c;
    *r= *p **q;
    printf("\n\n multiplication of %d and %d is %d ",x,y,*r);
}
int division(int x,int y)
{
    int *p,*q,*r;
    int c;
    p=&x;
    q=&y;
    r=&c;
    *r= *p / *q;
    printf("\n\ndivision of %d and %d is %d ",x,y,*r);
}
```



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Problem Solving Using C Lab

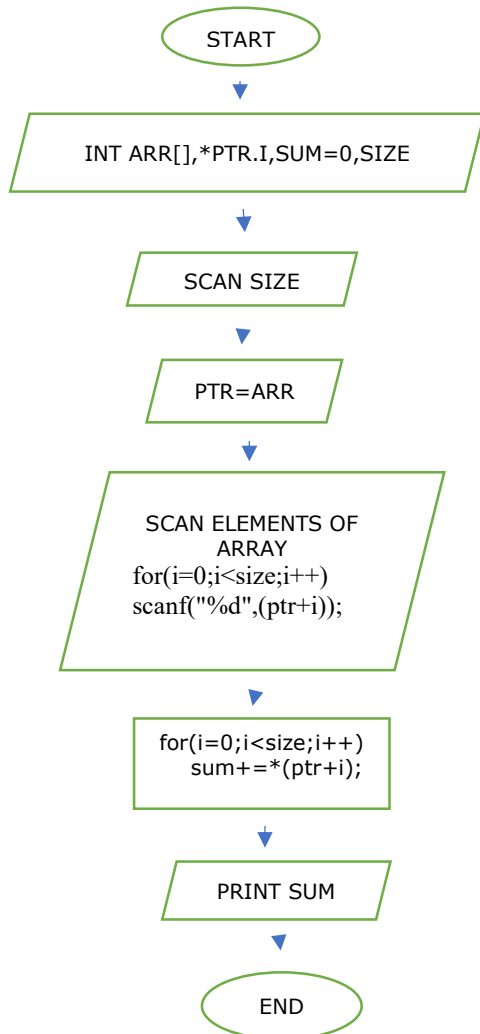
KCA 151: Session 2020-21

WRITE A PROGRAM TO GET SUM OF ELEMENTS OF ARRAY USING POINTERS

ALGORITHM:

- 1.START.
- 2.DECLARE FUNCTION ARRAYSUM().
- 3.DECLARE ARRAY .
- 4.DECLARE VARIABLE *PTR,I,SUM=0,SIZE.
- 5.SCAN SIZE.
- 6.SET PTR=ARR.
- 7.USE FOR LOOP AND SCAN ELEMENTS OF ARRAY USING POINTER.
- 8.USE FOR LOOP AND SUM THE ELEMENTS OF ARRAY SUM+=*(PTR+I).
- 9PRINT SUM.
- 10.END.

FLOWCHART:





KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21

PROGRAM:

```
#include<stdio.h>
int arraysum();
void main()
{
    arraysum();
}
int arraysum()
{
    int arr[10],*ptr,i,sum=0,size;
    printf("enter the size of an array = ");
    scanf("%d",&size);
    ptr=arr;
    printf("\nenter the value of an array : \n");
    for(i=0;i<size;i++)
    {
        scanf("%d",(ptr+i));
    }
    for(i=0;i<size;i++)
    {
        sum+=*(ptr+i);
    }
    printf("\n sum of an array = %d",sum);
}
```



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Problem Solving Using C Lab

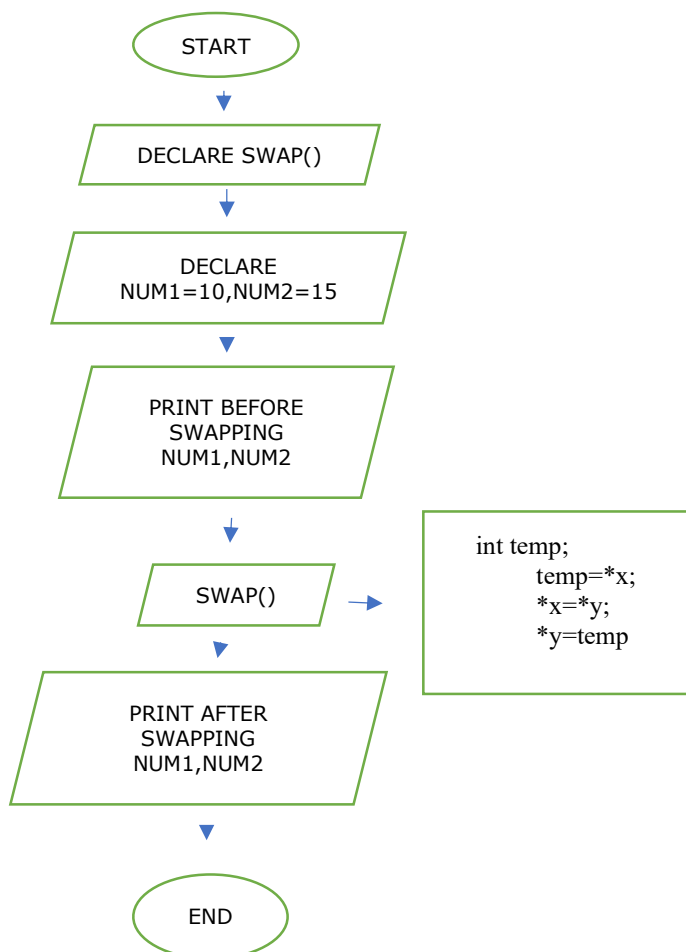
KCA 151: Session 2020-21

PROGRAM OF SWAPPING USING POINTERS

ALGORITHM:

- 1.START.
- 2.DECLARE FUNCTION SWAP()
- 3.DECLARE VARIABLE NUM1=10,NUM2=15;
- 4.PRINT VARIABLES BEFORE SWAPPING.
- 5.CALL FUNCTION
- 6.PRINT VALUE AFTER SWAPPING
7. DEFINITION OF FUNCTION SWAP()
 int temp;
 temp=*x;
 *x=*y;
 *y=temp
- 8.END.

FLOWCHART:





KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21

PROGRAM:

//swapping using pointers

```
#include<stdio.h>
```

```
int swap(int*,int*);
```

```
int main()
```

```
{
```

```
    int num1,num2;
```

```
    num1=10;
```

```
    num2=15;
```

```
    printf("values before swapping %d and %d\n",num1,num2);
```

```
    swap(&num1,&num2);
```

```
    printf("\nvalues after swapping num1 = %d and num2 = %d",num1,num2);
```

```
    return 0;
```

```
}
```

```
int swap(int *x,int *y)
```

```
{
```

```
    int temp;
```

```
    temp=*x;
```

```
    *x=*y;
```

```
    *y=temp;
```

```
}
```

COMPILED BY YASH AGRAWAL MCA 1 B



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & ‘A’ Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21