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Practical :- 1

- * Write a C Program to check the no is Palindrome or not using EOF.

```
#include <stdio.h>
#include <conio.h>
void Palindrom (int n);
void main ()
{
    int no;
    clrscr ();
    printf ("Enter no.: - ");
    scanf ("%d", &no);
    Palindrom (no);
    getch ();
}

void Palindrom (int n)
{
    int rem, rev = 0, m;
    m = n;
    while (n != 0)
    {
        rem = n % 10;
        rev = rev * 10 + rem;
        n = n / 10;
    }
    if (m == rev)
        printf ("%d is Palindrom", m);
    else
        printf ("%d is not Palindrom", m);
}
```

Output:-

Enter the no. :- 121

The no. is Palindrome

P practical :- 2

- * Write a C Program to find Factorial of given no using UDF.

```
#include <stdio.h>
#include <conio.h>
int Fact(int no);
Void main ()
{
    int n, F;
    clrscr(); /* after goto getch */
    P fintF ("Enter the value for n = ");
    Scanf ("%d", &n); /* I = f(0) */
    F = Fact (n);
    P fintF ("Fact = %d", F);
    getch ();
}

int Fact (int no)
{
    int i, Fact = 1;
    For (i=1; i<=no; i++)
    {
        Fact = Fact * i;
    }
    return (Fact);
}
```

Output:-

Enter the value For n = 5

Fact = 120

P practical :- 3

* Write a C program to find Factorial of given no using recursion.

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int num, F;
    clrscr();
    P fintF ("Enter any no. = ");
    S canf ("%d", & num);
    F = Factorial (num); initialization
    P fintF ("Factorial = %d", F);
    getch ();
}

int Factorial (int no)
{
    int fact;
    if (no == 1)
    {
        return (1);
    }
    else
    {
        fact = no * Factorial (no - 1);
    }
    return (fact);
}
```

Output:-

Digitized by srujanika@gmail.com

John Doe

100 words

Enter the part no. :- 576629

(containing 10% of the total?

Factorial = 120 (vid 1-3) - ?

(7 "b") - Initiation of Fluid

A 10.000

(a) $f(a)$ is rational if

(4 - 200) 31

100

(2) ~~08/01/22~~

Practical:- 4

* Write a C Program to display First 25 terms of Fibonacci series using recursion.

```
#include <stdio.h>
#include <conio.h>
Void Fibo (int i);
Void main ()
{
    int i;
    clrscr ();
    P fintF ("Enter no = ");
    S canF ("%d", &i);
    Fibo (i);
    getch ();
}
```

```
Void Fibo (int i)
{
    long int j, a=0, b=1, F=1;
```

```
For (j=2; j<=25; j++)
{
```

```
F=a+b;
```

```
a=b;
```

```
b=F;
```

```
P fintF ("%d", F);
```

```
}
```

```
getch ();
```

```
}
```

Output:-

Enter no = 3

5

8

13

21

34

55

89

144

233

377

610

987

1567

2584

4181

6765

10946

17711

28657

46368

75025

121393

196418

317811

Practical :- 5

- * Write a C program using a recursive function to find the GCD of two positive integers no.

```
#include <stdio.h>
#include <conio.h>
int gcd (int a, int b);
void main ()
{
    int a, b, ans=0; // all integer
    clrscr(); // cursor left 29.07.07
    printf ("Enter the value For a = ");
    scanf ("%d", &a); // no. m
    printf ("Enter the value For b = ");
    scanf ("%d", &b);
    ans=gcd (a,b);
    printf ("answer = %d", ans);
    getch ();
}

int gcd (int a, int b);
{
    int rem;
    rem=a%b;
    if (rem==0)
    {
        return b;
    }
    else
    {
        return (gcd (b, rem));
    }
}
```

Output:-

Enters the value of a = 60
Enters the value of b = 48
((d.a + b) * b) / a
(d.a + b) * b / a

Enters the value of a = 60

Enters the value of b = 48

answer = 125

((d.a + b) * b) / a

((2 * 60 + 48) * 48) / 60

((120 + 48) * 48) / 60

((d.a + b) * b) / a

((2 * 60 + 48) * 48) / 60

Practical :- 6

* Write a C Program to swap value of two integers no. using VDF.

```
#include <stdio.h>
#include <conio.h>
Void swap (int a, int b);
Void main ()
{
    int a, b;
    SWAP (a, b); /* Enter Int. & Print */
}
Void swap (int a, int b)
{
    int c;
    clrscr ();
    PPointF ("Enter the value For a = ");
    ScanF ("%d", &a);
    PPointF ("Enter the value For b = ");
    ScanF ("%d", &b);
    c = a;
    a = b;
    b = c;
    PPointF ("\n a = %d, \n b = %d", a, b);
    getch ();
}
```

Output:-

Enters the value For a = 64
Enters the value For b = 35

$$a = 35$$

$$b = 64$$

PRACTICAL:- 7

- * Write a C program Function Pprime that returns 1 if it's argument is a prime and return 0 otherwise.

```
#include <stdio.h>
#include <conio.h>
int Pprime (int);
Void main ()
{
    int n, p;
    clrscr ();
    printf ("Enter a no. = ");
    scanf ("%d", &n);
    p = Pprime (n);
    if (p == 1)
        printf ("%d is Pprime (%d)", n);
    else
        printf ("%d is not Pprime (%d)", n);
    getch ();
    return ();
}

int Pprime (int n)
{
    int i;
    for (i = 2; i < n; i++)
    {
        if (n % i == 0)
            return 0;
    }
    return 1;
}
```

Output:-

Enters the no = 78
78 is not P prime

Enters the no = 13
13 is P prime

PRACTICAL:- 8

* Write a C Program that will print the longest word written in a line using VSF.

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
Void string - Long (char str []);
Void main ()
{
    char s [100];
    clrscr ();
    printf (" \n \n Enter string = ");
    gets (s);
    string - Long (s);
    getch ();
}
```

```
Void string - Long (char str [])
{
    int i, j = 0, l;
    char b [20], c [20];
    For (i = 0; i < strlen (a); i++)
    {
        if (a[i] == 32 || a[i] == '10')
        {
            b [j + 1] = a [i]
        }
        else
        {
            b [j] = '10'
        }
        if (i == strlen (b))
        {
            strcpy (c, b);
        }
    }
}
```

l = strlen(b);
 }

 j = 0;

 printf("In %n longest word is == s");
 puts(c);

}

 // it will do word problem after

 // output is in local segment
 // or stack

Output:-

Entered String have a Function

longest word is = Have

Practical :- 9

* Write a C Program that will Scan a character string passed as an argument and convert all lowercase characters into these uppercase equivalents using VDF.

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
Void up (char a[], int n);
void main()
{
    clrscr();
    int i;
    char a[15];
    printf("Enter string = ");
    scanf("%s", &a);
    up(a, 15);
    getch();
}
Void up (char a[], int n)
{
    int i;
    For (i=0; i<=n; i++)
    {
        a[i] = a[i] - 32;
    }
    printf("In string in uppercase=%s", a);
}
```

Output:-

Entered string = SinghPurvi

Uppercase string = SINGHPURVI

Practical:- 10

* Write a C Program that uses a VDF to sort an array of integers.

```
#include <stdio.h>
#include <conio.h>
void Sort (int a[]);
void main ()
{
    int a [5], i;
    clrscr ();
    For (i=0; i<=4; i++)
    {
        printf ("Enter the no = ");
        scanf ("%d", &a[i]);
    }
    Sort (a);
    getch ();
}

void Sort (int a[])
{
    int temp, i, j;
    For (i=0; i<=4; i++)
    {
        For (j=i; j<=4; j++)
        {
            If (a[i]>a[j])
            {
                temp = a[i];
                a[i] = a[j];
                a[j] = temp;
            }
        }
    }
}
```

12

for ($i = 0; i \leq 4; i++$)
{

 printf("In the string no is %d", a[i]);

}

Output:
In the string no is 12345

In the string no is 12345

Output:-

Enter the no = 5

Enter the no = 4

Enter the no = 3

Enter the no = 2

Enter the no = 1

the string no = 1

the string no = 2

the string no = 3

the string no = 4

the string no = 5

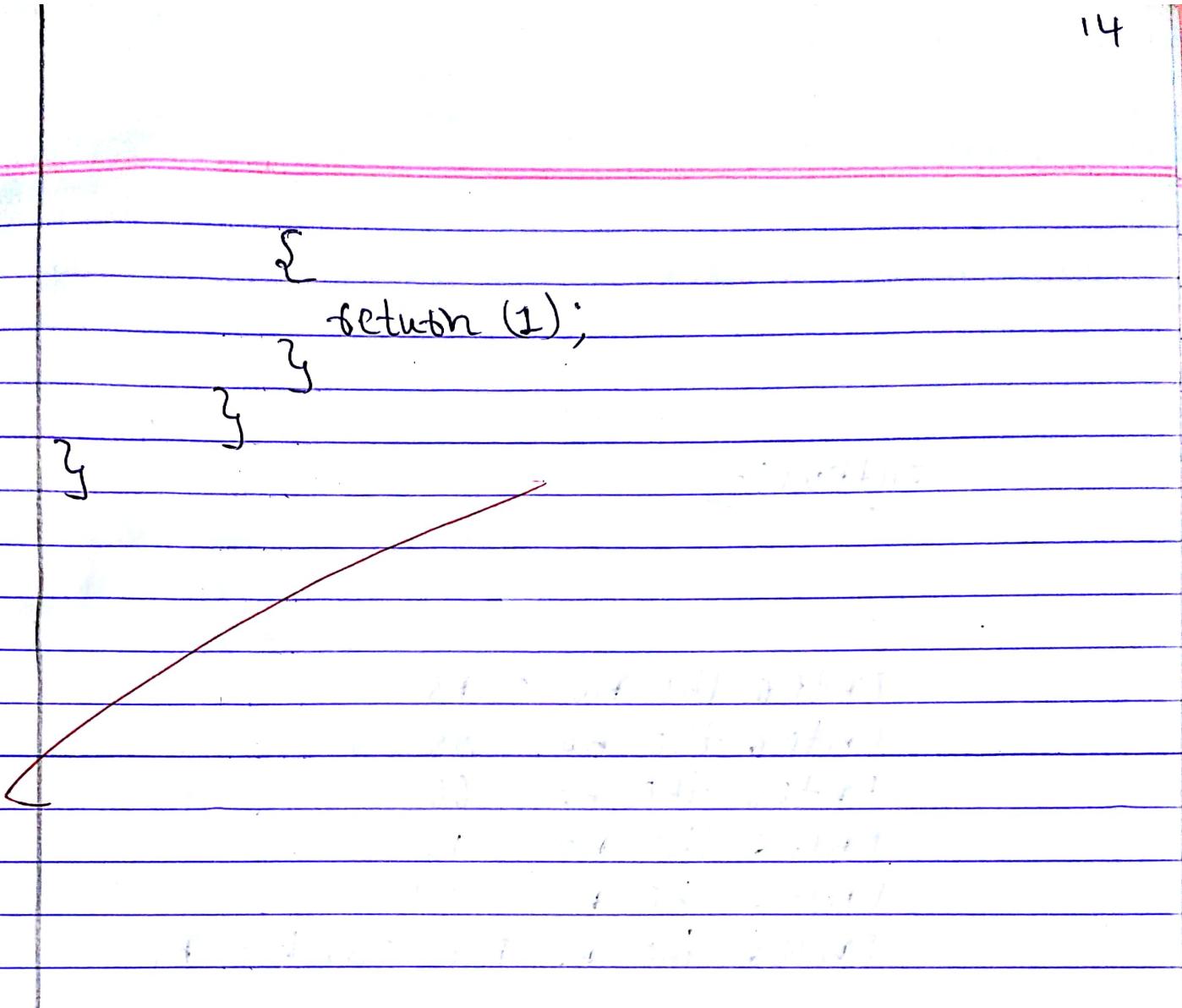
Practical :- 11

- * Write a C Program to Search a no. within an array using VDF.

```
#include<stdio.h>
#include<conio.h>
int search (int [], int i);
void main ()
{
    int a [5], ans;
    clrscr ();
    ans = search (a, 5);
    if (ans == 1)
    {
        printf ("no. is same = ");
    }
    else
    {
        printf ("no. is not same = ");
    }
    getch ();
}

int search (int a [], int i)
{
    int no;
    for (i=1; i<=5; i++)
    {
        printf ("Enter the no. = ");
        scanf ("%d", &a[i]);
    }
    printf ("Enter the no. For search = ");
    scanf ("%d", &no);
    for (i=1; i<=5; i++)
    {
        if (no == a[i])

```



Output:-

Enters the no. = 73

Enters the no. = 58

Enters the no. = 66

Enters the no. = 72

Enters the no. = 51

Enters the no. For Search = 73

no. is Same

Enters the no. = 73

Enters the no. = 58

Enters the no. = 66

Enters the no. = 72

Enters the no. = 51

Enters the no. For Search = 45

no. is not same

Practical :- 12

- * Write a program which explain the use of nesting function.

```
#include <stdio.h> function
#include <conio.h>
Float ratio (int x, int y, int z);
Void main ()
{
    int a, b, c; variable declaration
    clrscr (); clr
    printf ("Enter the value for a,b,c = ");
    scanf ("%d %d %d", &a, &b, &c);
    printf ("%f\n", ratio (a, b, c));
    getch ();
}
```

```
Float ratio (int x, int y, int z)
{
```

```
    if (difference (x, y))
        return (x/y - 2);
    else
        return (1.0);
}
```

```
int difference (int P, int Q)
{
```

```
    if (P != Q)
```

```
    {
        return (1);
    }
```

```
    else
```

```
    {
        return (1);
    }
```

Output:-

Entered the value = 45

67

34

1.000000

Practical:-13

- * Write a Function Power that computes x raised to the power y for integers x and y and return double-type value.

```
#include <stdio.h>
#include <conio.h>
double Power (int x, int y);
void main ()
{
    int x, y;
    double a;
    clrscr ();
    printf ("Enter First no. (base) = ");
    scanf ("%d", &x);
    printf ("Enter second no. (Power) = ");
    scanf ("%d", &y);
    a = Power (x, y);
    printf ("Ans: %.2f\n", a);

    int i;
    double t = 1;
    for (i = 1; i <= y; i++)
    {
        t = t * x;
    }
    return (t);
}
```

Output:-

Enter the value $x = 2$

Enter the value $y = 3$

8.00000

Practical :- 14

- * Define a structure type struct Personal that would contain Person name, date of joining and salary using this structure to read this.....

```
#include <stdio.h>
#include <conio.h>
struct Personal
{
    char name [20];
    int d, m, y;
    int Salary;
} P1[5];
void main ()
{
    int i;
    clrscr ();
    For (i=0; i<2; i++)
    {
        printf ("In Enter name = ");
        scanf ("%s", P1[i].name);
        printf ("In Enter date = ");
        scanf ("%d", &P1[i].d);
        printf ("In Enter month = ");
        scanf ("%d", &P1[i].m);
        printf ("In Enter year = ");
        scanf ("%d", &P1[i].y);
        printf ("In Enter Salary = ");
        scanf ("%d", &P1[i].Salary);
    }
    printf ("NAME \t \t DATE \t \t SALARY");
    For (i=0; i<2; i++)
    {
    }
```

```
printf("In-List It is %d %d %d %d It  
It is %d", P1[i].name, P1[i].d, P1[i].  
m, P1[i].y, P1[i].Salary);  
}  
getch();  
}
```

output:-

Enter the name = Pufu

Enter the date = 21/01/2015

Enter the salary = 3000

Enter the name = Raj

Enter the date = 18/06/2016

Enter the salary = 4000

Name	Date	Salary
Pufu	21/01/2015	3000
Raj	18/06/2016	4000

Practical:- IS

- * Design a Structure student record to contain name, branch and total marks obtained.

```
#include <stdio.h>
#include <conio.h>
Struct student {
    char name [20];
    char branch [20];
    long int mark;
} std [2];
void main ()
{
    int i;
    clrscr ();
    For (i=1; i<=2; i++)
    {
        printf ("Enter the student name = ");
        scanf ("%s", std[i].name);
        printf ("Enter the student branch = ");
        scanf ("%s", std[i].branch);
        printf ("Enter the student mark = ");
        scanf ("%d", &std[i].mark);
    }
    For (i=1; i<=5; i++)
    {
        printf ("\n");
        printf ("name = %s \n", std[i].name);
        printf ("branch = %s \n", std[i].branch);
        printf ("mark = %d \n", std[i].mark);
    }
    getch ();
}
```

Output:-

Enters the student name = Pusu

Enters the student branch = vishvanagari

Enters marks = 85

Enters the student name = Raj

Enters the student branch = Samarth

Enters marks = 86

name = Pusu

branch = vishvanagari

marks = 85

name = Raj

branch = Samarth

marks = 86

Practical:- 16

- * Write a C Program using Structure within Structure.

```
#include <stdio.h>
#include <conio.h>
Struct Student
{
    int rollno;
    char name[20];
    Struct birthdate;
}
Struct birthdate
{
    int d;
    int m;
    int y;
}
Void main ()
{
    Struct Student S1;
    ClsScf ();
    PintF ("Enter Roll No. = ");
    ScanF ("%d", &S1.rollno);
    PintF ("Enter name = ");
    ScanF ("%s", &S1.name);
    PintF ("Enter Birthdate = ");
    ScanF ("%d/%d/%d", &S1.bdate.d, &S1.bdate.m, &S1.bdate.y);
    PintF ("Given student date = ");
    ScanF ("%d-%d-%d %d-%d-%d", &SI.rollno, SI.
        name, SI.bdate.d, SI.bdate.m, SI.bdate.
        y);
    getch ();
}
```

Output:-

Enter Roll No = 1

Enter name = Puslu

Enter date = 2

Enter month = January

Enter year = 2015

Enter Roll No = 2

Enter name = Raj

Enter date = 3

Enter month = February

Enter year = 2015

Enter Roll No = 4

Enter name = Tash

Enter date = 17

Enter month = January

Enter year = 2015

Enter Roll No = 45

Enter name = Kedas

Enter date = 18

Enter month = February

Enter year = 2015

Enter Roll No = 6

Enter name = Anu

Enter date = 30

Enter month = January

Enter year = 2015

Roll No. Name Date Month Year

1 Puslu 2 16 January 2015

2 Raj 3 17 February 2015

3 Tash 17 January 2015

4 Kedas 18 February 2015

5 Anu 30 January 2015

Practical:- 17

- * Define a Structure called cricket that will describe the following inf. Player name, Team name, Runs.

```
#include<stdio.h>
#include<conio.h>
struct cricket
{
    char Pname[20];
    char Tname[20];
    int runs;
} Ply[10];
Void main()
{
    int j;
    clrscr();
    For (j=0; j<5; j++)
    {
        printf("Enter the name = ");
        scanf("%s", Ply[j].Pname);
        printf("Enter the team (india:i / "
               "Srilanka:s / Australia:a) = ");
        scanf("%s", Ply[j].Tname);
        printf("Enter runs = ");
        scanf("%d", &Ply[j].runs);
    }
    printf("In INDIA");
    printf("In ..... ");
    printf("In name lt runs");
    For (j=0; j<5; j++)
    {
        if (strcmp(Ply[j].Tname, "i") == 0)

```

PointF("In-1-s At -1-d", PLY[i].Phame,
PLY[i].runs);

}

PointF("In In SRI LANKA");

PointF("In.....");

PointF("In In NAME At RUNS");

For (j=0; j<5; j++)

{

IF (strcmp(PLY[i].name, "S") == 0);

{

PointF("In-1-s At -1-d", PLY[i].Phame
PLY[i].runs);

}

PointF("In In AUSTRALIA");

PointF("In.....");

PointF("In In NAME At RUNS");

For (j=0; j<5; j++)

{

IF (strcmp(PLY[i].name, "a") == 0)

{

PointF("In-1-s At -1-d", PLY[i].Phame
PLY[i].runs);

}

}

getch();

}

Output:-

Enter Name = Puslu
 $t+\text{name} = \text{India}$

$t+\text{name} = \text{India}$

$t+\text{name} = 400$

Enter Name = Raj

$t+\text{name} = \text{Pakistan}$

$= 300$

Enter Name = Kedab

$t+\text{name} = \text{India}$

$= 200$

Enter Name = Tash

$t+\text{name} = \text{Pakistan}$

$= 400$

Enter Name = Mahav

$t+\text{name} = \text{India}$

$= 300$

Name	tname	Runs
Puslu	India	400
Raj	Pakistan	300
Kedab	India	200
Tash	Pakistan	400
Mahav	India	300

Practical:- 18

- * In a Program declare Follo. Structure member name, code, age, weight and height. Read all members of the structure for 10 persons and find list of persons with all related date whose weight >50 and height >40 and print the same with suitable format and title.

```
#include <stdio.h>
#include <conio.h>
struct members
{
    char name[20];
    int code;
    int age;
    float weight;
    float height;
};

void main()
{
    struct members s[3];
    int i;
    float w,h;
    clrscr();
    for(i=0; i<3; i++)
    {
        printf("Enter Name, code, Age, weight, height:");
        scanf("%s %d %d %f %f", &s[i].name, &s[i].code,
              &s[i].age, &w, &h);
        s[i].weight = w;
        s[i].height = h;
    }
}
```

```
printf("In In In");
for (i=0; i<3; i++)
{
    if (s[i].weight > 50 && s[i].height > 40)
        printf("\n%.1f %.1f %.1f %.1f %.1f %.1f\n",
               s[i].name, s[i].code,
               s[i].age, u, h);
}
```

Output:-

(C:\Python31\python.exe) 71.519
(111, 831, 0, 71) do?

for i in range(5):
 print(i)

Enter the Name, code, Age, weight, height = Pufu

1 19 51 52 75

2 19 50 52 75

3 19 50 52 75

4 19 50 52 75

Enter the Name, code, Age, weight, height = Task

2 19 50 52 75

3 19 50 52 75

4 19 50 52 75

Enter the Name, code, Age, weight, height = Kedas

3 19 50 52 75

4 19 50 52 75

5 19 50 52 75

Pufu 1 19 51.00000

85.0000

Kedas 3 19 51.00000

55.0000

Practical :- 19

* Write a C Program to Print the value and address of the element.

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int a;
    int *p;
    clrscr();
    printf("Enter No.=");
    scanf("%d", &a);
    printf("Value of a=%d\n", a);
    printf("Address of a=%d\n", &a);
    p = &a;
    printf("Value of a=%d\n", a);
    printf("Value of P=%d\n", p);
    printf("Value of *P=%d\n", *p);
    getch();
}
```

output

Entered $h_0 = 5$

value of $a = 5$

Address of $a = FFF4$

Value of $a = 5$

Value of $P = FFF4$

Value of $*P = 5$

The value of a is 22116045

~~The initial value of a is 5~~

~~If a is multiplied by 5 then the value of a is 22116045~~

~~If a is divided by 5 then the value of a is 44232090~~

Practical :- 20

* Write a Program to accept 10 no. and display its sum using pointers.

```
#include <stdio.h>
#include <conio.h>
Void main () {
    int a[10], i, *P, S = 0;
    clrscr(); For (i=0; i<10; i++)
    { P=a+i; printf("Enter value = "); scanf("%d", P); S=S+*P; }
    printf("Sum = %d", S);
    getch();
}
```

output:-

Enters value = 10

Enters value = 11

Enters value = 16

Enters value = 17

Enters value = 20

Enters value = 18

Enters value = 20

Enters value = 21

Enters value = 25

Enters value = 28

Sum = 186

Practical:- 21

- * Write a program to accept 10 members and sort them with use of pointers.

QUESTION

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a[10], i, j, *p, t;
    clrscr();
    for (i=0; i<=10; i++)
    {
        printf("Enter the value = ");
        scanf("%d", &a[i]);
    }
    p=a;
    for (i=0; i<10; i++)
    {
        for (j=i+1; j<10; j++)
        {
            if (*p+i) > *p+j)
            {
                t = *p+i;
                *p+i = *p+j;
                *p+j = t;
            }
        }
    }
    printf("\n\n Sorted list = \n");
    for (i=0; i<10; i++)
    {
        printf("%d ", a[i]);
    }
    getch();
}
```

Output:-

Enter the value = 1
Enter the value = 2
Enter the value = 3
Enter the value = 4
Enter the value = 5
Enter the value = 6
Enter the value = 7
Enter the value = 8
Enter the value = 9
Enter the value = 10

Sorted list =

1
2
3
4
5
6
7
8
9
10

Practical :- 22

* Write a Program to swap the two values using Pointers and VOF.

```
#include <stdio.h>
#include <conio.h>
void swap (int *a, int *b);
void main ()
{
    int x, y;
    clrscr ();
    printf ("Enter the value of x = ");
    scanf ("%d", &x);
    printf ("Enter the value of y = ");
    scanf ("%d", &y);
    swap (&x, &y);
    printf ("New x is = %d", x);
    printf ("New y is = %d", y);
    getch ();
}
```

void swap (int *a, int *b)

```
{ int temp;
    temp = *a;
    *a = *b;
    *b = temp;
```

}

Output:-

Enter value of x = 45

Enter value of y = 12

New x is = 12

New y is = 45

Practical:- 23

- * Write a Program with structure and Pointers.

```

#include <stdio.h>
#include <conio.h>
Struct student
{
    int no, marks;
    char name [20];
};

Void main()
{
    Struct student s[3], *P;
    int i;
    If (close(0));
    P = S;
    For (P=S; P<S+3; P++)
    {
        printf("Enter no, name, marks = ");
        scanf("%d %s %d", &P->no, P->name,
              &P->marks);
    }
    printf("no %d %s %d", P->no, P->name,
           P->marks);
    For (P=S; P<S+3; P++)
    {
        printf("%d %s %d", P->no, P->name, P->marks);
    }
    getch();
}

```

Output:-

Enter the no, name, marks = 67
Singh
82

Enter the no, name, marks = 72
Rathod
80

Enter the no, name, marks = 73
Sinh
81

Practical:- 24

* Write a Program using Pointers to determine the length of a character using.

```
#include <stdio.h>
#include <conio.h>
Void main ()
{
    char * s;
    int i=0;
    clrscr(); // for clearing the screen
    printf ("Enter string = ");
    gets (s); // for taking input
    while (* (s+i) != '\0')
    {
        i++;
    }
    printf ("Length of string is = %d", i);
    getch();
}
```

Output:-

Entered string = visat kohli

length of string = 11

Practical:- 25

*

Write a Program using Pointers to read an array of integers and print its elements in reverse order.

(Function)

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int a[10], *P, i;
    clrscr();
    for (i=0; i<=9; i++)
    {
        printf("Enter value = ");
        scanf("%d", &a[i]);
    }
    P=a;
    printf("reverse value = ");
    for (i=9; i>=0; i--)
    {
        printf("%d ", *(P+i));
    }
    getch();
}
```

Output:-

<std::ios> library
<iomanip> library

Enters the value = 10 print how

Enters the value = 9

Enters the value = 8 print how

Enters the value = 7 print how

Enters the value = 6 print how

Enters the value = 5 print how

Enters the value = 4 print how

Enters the value = 3 print how

Enters the value = 2 print how

Enters the value = 1 print how

the value is 9876543210

reverse number = 10987654321

2

4

6

7

8

9

10

Practical:- 26

- * Write a program using VOF and Pointers to add two matrices and to return the resultant matrix to the calling function.

```
#include <stdio.h>
#include <conio.h>
int a[5][5], b[5][5], tow, col;
void add (int (*)[5]);
int main ()
{
    int c[5][5], i, j;
    clrscr ();
    printf ("Enter tow = ");
    scanf ("%d", &tow);
    printf ("Enter col = ");
    scanf ("%d", &col);
    printf ("Enter matrix A = \n");
    for (i=0; i<tow; i++)
    {
        for (j=0; j<col; j++)
        {
            scanf ("%d", &a[i][j]);
        }
    }
    printf ("Enter matrix B = \n");
    for (i=0; i<tow; i++)
    {
        for (j=0; j<col; j++)
        {
            scanf ("%d", &b[i][j]);
        }
    }
    add (a);
}
```

```

add(c);
printf("Addition = %n",
For (i=0; i<row; i++)
{
    For (j=0; j<col; j++)
        printf("%d ", c[i][j]);
    printf("\n");
}

```

```

getch();
return 0;
}

```

```

void add (int c[5][5])
{

```

```

int i,j;
For (i=0; i<row; i++)
{
    For (j=0; j<col; j++)

```

$$c[i][j] = a[i][j] + b[i][j];$$

```

}
}

```

Output:-

Enter the matrix A

Enter row = 2

Enter col = 2

Enter matrix A =

1 2 3 4

3

1 2 3 4 5 6

Enter matrix B =

3

4

5

Addition = 3 + 5 = 8

7 9

Practical:- 27

- * Create one text file store some information into it and print the same information on terminal.

```

#include <stdio.h>
#include <conio.h>
void main ()
{
    char s[100], t;
    int i;
    FILE *FP;
    clrscr();
    FP = fopen("my.txt", "w");
    printf("Enter your string = ");
    gets(s);
    for (i=0; s[i] != '10'; i++)
    {
        putc(s[i], FP);
    }
    fclose(FP);
    FP = fopen("my.txt", "r");
    while ((t = getc(FP)) != EOF)
    {
        printf("%c", t);
    }
    fclose(FP);
    getch();
}

```

Output:-

Enter your string =

Singh Pusushottam

(Singh Pusushottam)

- * A file named data contains series of integers no. write a C program to read that no. and then write all odd no. into file named odd no. and write all even no into file named even no. display all the contents of these on screen.

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int i, num;
    FILE *F1, *F2, *F3;
    clrscr ();
    F1 = fopen ("data.txt", "w");
    for (i=0; i<10; i++)
    {
        printf ("Enter value = ");
        scanf ("%d", &num);
        if (num == -1)
            break;
        putw (num, F1);
    }
    fclose (F1);
    F1 = fopen ("data.txt", "r");
    F2 = fopen ("odd.txt", "w");
    F3 = fopen ("even.txt", "w");
    while ((num = getw (F1)) != EOF)
    {
        if (num % 2 == 0)
            putw (num, F3)
    }
}
```

else
{

 Putw (num, F2);
}

Fcloseall ();

F2 = fopen ("odd.txt", "w");

F3 = fopen ("even.txt", "w");

printf ("odd.txt", "m");

while (num = getw (F2)) != EOF)

{

 printf ("%.d m", num);

}

fclose (F2);

fclose (F3);

getch ();

}

Output:-

(57 min) 12/19
P

Enters value = 1 (0) 110720/37
Enters value = 2 (0) 110720/37
Enters value = 3 (0) 110720/37
Enters value = 4 (0) 110720/37
Enters value = 5 (0) 110720/37
Enters value = 6 (0) 110720/37
Enters value = 7 (0) 110720/37
Enters value = 8 (0) 110720/37
Enters value = 9 (0) 110720/37
Enters value = 10 (0) 110720/37

odd File data

1
3
5
7
9

Even File data

2
4
6
8
10

Practical:- 29

- * Write a C Program to read data from keyboard, write it to a called input and display data of input file on the screen.

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    char s[100], t;
    int i;
    FILE *FP;
    clrscr ();
    FP = fopen ("input.txt", "w");
    printf ("Enter your String = ");
    gets (s);
    for (i=0; s[i] != '\0'; i++)
    {
        putc (s[i], FP);
    }
    fclose (FP);
    FP = fopen ("input.txt", "r");
    while ((t = getc (FP)) != EOF)
    {
        printf ("\n.c", t);
    }
    fclose (FP);
    getch ();
}
```

Illustrate what happens in above recursive function

Output:-

Enter your String =

M.S. Dhoni

M.S. Dhoni. [size 30]

i("w") > f(w, w) > f(w, w) = 1

i("Dhoni") > f(Dhoni, Dhoni) = 1

(+i, i) > f(i, i) = size (i-i). size

(97, 0) > f(97, 0)

Practical :- 30

- * Write a program that counts the no. of characters & no. of lines in a file.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    FILE *FP;
    char t;
    int c=0, l=0;
    clrscr();
    FP = fopen("my.txt", "r");
    while ((t = getc(FP)) != EOF)
    {
        if (t == ' ' || t == '\n')
        {
            l++;
        }
        if (t == '\n')
        {
            c++;
        }
    }
    fclose(FP);
    printf("no of characters is %d\n", c);
    printf("no of line is %d\n", l);
    getch();
}
```

output:-

char length = 9 but width = 11

char width = 9 but length = 11

Enter your string = Dinesh Singh
singh Pusushottam

No. of characters is = 0

No. of lines is = 0

~~:(("d" "i" "s" "h" "P" "u" "s" "h" "o" "t" "t" "a" "m") + 9) + 11 = 43~~

~~(703 = 11(90) + 10 = 11) + 11 = 22~~

~~last ER = "I - t - h - a - m"~~

~~RAJ~~

~~(100 = 2 * 10 = 20~~

Pfactual :- 31

- * Write a C Program to read mark data which contains roll no, name, Sub1, Sub2, Sub3 File and generate the annual examination results are tabulated as follows.

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
void main()
{
    int i, sno[5], S1[5], S2[5], S3[5];
    int Ftno[5], FS1[5], FS2[5], FS3[5], FT[5];
    float FPPt[5];
    char name[5][20];
    char name[5][20], Fclass[5][15];
    FILE *FP;
    FP = fopen("Student.txt", "w");
    fclose();
    for (i=0; i<2; i++)
    {
        printf("Enter rollno, name, S1, S2, S3 = ");
        scanf("%d %s %f %f %f", &sno[i], name[i], &S1[i], &S2[i], &S3[i]);
        fprintf(FP, "%d %s %f %f %f\n", sno[i], name[i], S1[i], S2[i], S3[i]);
    }
    Fclose(FP);
    FP = fopen("Student.txt", "r");
    printf("Result in");
    printf(" = = = = (%n);
```

Pointf ("RNo, name, S1, S2, S3, Total
PPer class (%)\n");

For (i=0; i<2; i++)
{

Fscanf (FP, "%d %s %d %d %d %d
%d", &Fno[i], Fname[i],
&FS1[i], &FS2[i], &FS3[i]);

FT[i] = FS1[i] + FS2[i] + FS3[i];

FPPer[i] = FT[i] / 3.0;

If (FPPer[i] > 70)

{

strcpy (Fclass[i], "Distinction");

}

Else If (FPPer[i] >= 60)

{

strcpy (Fclass[i], "First");

}

Else If (FPPer[i] >= 50)

{

strcpy (Fclass[i], "Second");

}

Else If (FPPer[i] >= 35)

{

strcpy (Fclass[i], "Pass");

}

Else

{

strcpy (Fclass[i], "*");

}

Fprintf (stdout, "%d %s %d %d %d %d
%d %s (%)\n");

Fno[i], Fname[i], FS1[i], FS2[i],

FS3[i], FT[i], FPPer[i], Fclass[i];

}

PointF ("=====\n");
fclose (FP);
getch ();

{}

Output:-

tno	name	S ₁	S ₂	S ₃	Total	Pct	class
58	Rufu	78	89	85	252	84.000	First
60	Raj	45	58	59	192	89.000	distinction

Pfactical:- 32

- * Write a C Program to input employee no, employee name and basic and to store output into empdata File in Following Format.

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
Struct emp
{
    int no,basic;
    char name [20];
    float da,hra,ma,PF,gross,net;
};

void main()
{
    struct emp s[20];
    FILE *FP;
    int n,i;
    clrscr();
    FP = fopen("P609.txt", "w");
    fprintf (stdout, "Enter no, name, basic\n");
    fprintf (FP, "-----");
    for (i=1; i<=2; i++)
    {
        fscanf (stdin, "%d %s %d", &s[i].no,
                s[i].name, &s[i].basic);
        fprintf (FP, "%d %s %d %d %f %f %f\n",
                s[i].no, s[i].name,
                s[i].basic, s[i].da,
                s[i].hra, s[i].ma, s[i].PF,
                s[i].gross, s[i].net);
    }
}
```

s[i].da = s[i].basic * 0.50;

`s[i].hba = s[i].basic * 0.10;`

$s[i].ma = 100;$

`s[i].PF = s[i].basic * 0.20;`

$s[i].gross = s[i].basic + s[i].da + s[i].hra + s[i].mai;$

$s[i].net = s[i].gross - s[i].PF;$

Flprintf (stdout, "Not name it basic it da
77 and it has it malt PF it gross it het
east out (m"); good cause what?

```
FPfintF (stdout, "%s = %c%o - %c%o - (%c%o)";
```

Fclose (FP);

```
FP = fopen("Prog.txt", "r");
```

For (i=1; i<=2; i++)

3

```
FScanF (FP, "%d %s %d", &s[i].no, s[i].  
name, &s[i].basic);
```

```
FPprintF (std::cout, "%d %s %d %d %d", I[0], I[1], I[2], I[3], I[4]);
```

F/t 1.1.2 F/t 1.1.2 F/t 1.1.2
F/t 1.1.2 F/t 1.1.2 F/t 1.1.2

sit, no sit, name, sit: basic.

~~seɪt.ə, seɪt.ə.ə, seɪt.ə.ə~~, seɪt.da, seɪt.bə, seɪt.ma,

Sci7.PF, Sci7.gloss, Sci7.nex

1

```
FPointF (Stdout, "-----\n");
```

Fclose (FP);

getch();

1

L. $\text{Li}_2 \text{Sb} \cdot \text{Li}_2 + \text{SiO}_2 \cdot \text{Li}_2 = \text{RSDP} \cdot \text{Li}_2$

Output: m, f_1, f_2

$$177.5172 - 220dB \cdot 172 = 111.5172$$

↳ name basic ontario has ma pf gross net

I Putu 12000 6000 1200 100 1200 1200 1200

Raj 10000 5000 1500 1000 1000 1000 1000

(97) 72073

(6) 377-1815 (977) 077197-377

Uttisessi (Bijig)

Fig. 172, ord. Fig. 172 B "6A + 6B", 97) 3,600,000

222d. 51728. 9. 1908

• **High-Order Functions** (functions that return functions)

84步机75步机85步机

88.01 117.54 117.55 117

32nd. Feb. 1972. File no. 512 cont. 512

Pfactical:-33

- * Write a C program to read empin data file which contains empno, empname and basic, to create empout data file as Pfactical Format.

```
#include <stdio.h>
#include <conio.h>
Struct emp
{
    int no, basic, ma;
    char name [20];
    float da, hfa, PF, gross, net;
};

void main ()
{
    struct emp s[20];
    FILE *FP;
    int n, i;
    clrscr();
    printf("Enter Employee data:-");
    printf("How many Record you want to
    insert:-");
    scanf("%d", &n);
    FP = fopen("empdata.txt", "w");
    fprintf(FP, "%d %s %d", s[i].no,
            s[i].name, s[i].basic);
    for (i=0; i<n; i++)
    {
        printf("Enter the employee no:-");
        scanf("%d", &s[i].no);
        printf("Enter the employee
        name:-");
        scanf("%s", s[i].name);
```

```

printf ("In It Enters the basic Salary:- ");
fscanf (stdin, "%d", &s[i].basic);
printf (fp, "%d %s %d", s[i].no,
       s[i].name, s[i].basic);
}

```

Fclose (FP);

FP=fopen ("stdout", "w");

FP=fopen ("empdata", "r");

printf ("-----");

printf ("In Empno It name It basic

It da It hsa It ma It PF It

PF It Gross It net");

printf ("-----");

for (i=0; i<n; i++)

{

fscanf (fp, "%d %s %d", s[i].no, s[i].

name, s[i].basic);

s[i].da = s[i].basic * 0.50;

s[i].hsa = s[i].basic * 0.20;

s[i].ma = 100;

s[i].PF = s[i].basic * 0.10;

s[i].gross = s[i].basic + s[i].da +
 s[i].hsa + s[i].ma;

s[i].net = s[i].gross, s[i].PF);

fprintf (stdout, "%d %s %s %d %d

%d %d %d %d", s[i].no, s[i].

name, s[i].basic, s[i].da,

s[i].hsa, s[i].ma, s[i].PF,

s[i].gross, s[i].net);

}

Fclose (FP);

getch();

}

(Gizd.Fiz2, 9200.Fiz2)

Output:-

```
:(92) 9200.Fiz2  
:(92) 9200.Fiz2  
:(92) 9200.Fiz2
```

Enter employee data;) 9200.Fiz2

sized How many record you want to insert = 1

Enter the employee no = 1

Enter the employee name = Puslu

Enter the basic salary = 5000

```
:(92) 9200.Fiz2
```

no	name	Basic	DA	HRA	MA	PT.	GROSS	NET
1	Puslu	5000	2500	1500	100	100	8100	7600

(Gizd.Fiz2, 9200.Fiz2)

cat.o * gizd.Fiz2 > ph.Fiz2

cat.o * gizd.Fiz2 - mod.Fiz2

mod = mod.Fiz2

cat.o * gizd.Fiz2 = 39.Fiz2

mod.Fiz2 + gizd.Fiz2 = modP.Fiz2

modP.Fiz2 + mod.Fiz2

Practical:- 34

- * Write a Program using Fseek and Ftell Functions.

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    FILE *FP;
    longint n;
    char c;
    FP = fopen ("RANDOM.txt", "w");
    while ((c = getch()) != EOF)
    {
        put (c, FP);
    }
    printf ("No. of characters entered = %.d\n",
            n, ftell (FP));
    fclose (FP);
    FP = fopen ("RANDOM.txt", "r");
    n = 0L;
    while (feof (FP) == 0)
    {
        fseek (FP, n, 0);
        printf ("Position of %.c is %.d (%c",
                getc (FP), ftell (FP));
        n = n + 1L;
    }
    putchar ('n');
    fseek (FP, -1L, 2);
    do
    {
        putchar (get (FP));
    }
    while (1);
}
```

```
while (!fseek(fp, -2L, 1));  
fclose(fp);  
getch();
```

{}

int main()

FILE *fp = fopen("data.txt", "r");

char c; // character to read

rewind(fp); // go to start

c = fgetc(fp); // read first character

rewind(fp); // go to start

c = fgetc(fp); // read second character

Output:-

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

No. of characters entered = 26

Position of A is = 0

Position of F is = 5

Position of K is = 10

Position of P is = 15

Position of U is = 20

Position of Z is = 25

Position of is = 30

Z Y X W V U T S R Q P O N M L K J I H G F E D C B A

Practical :- 35

*

TWO FILES DATA 1 & 2 contain sorted list of integers. write a program to produce a third file data which hold a single sorted merged list of these two lists - USE command line arguments to specify the file names.

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    FILE *F1, *F2, *F3;
    int number, i, j, k, temp, sort[40];
    clrscr();
    printf("File DATA - 1 \n");
    printf("Enter -1 For stop For add
no. into File: \n");
    printf("Enter the no.: - ");
    F1 = fopen("data1.txt", "w+");
    for (i=1; i<=30; i++)
    {
        scanf("%d", &no);
        if (number == -1)
        {
            break;
        }
        putw(number, F1);
    }
    fclose(F1);
    printf("\n File DATA - 2:- \n");
    printf("\n Enter -1 For stop For add
number into File:- \n \n");
    printf("Enter the numbers = ");
}
```

```
F2 = fopen ("data2.txt", "w++");
for (i=1; i<=30; i++)
{
```

```
    fscanf ("r.d", &numbers);
    if (numbers == -1)
    {
```

```
        break;
    }
```

```
    putw (numbers, F2);
}
```

```
fclose (F2);
```

Printf ("In merged data of File

data-1 and data-2 File:-");

```
F1 = fopen ("data1.txt", "r++");
F3 = fopen ("data3.txt", "w++");
```

```
while ((numbers = getw (F1)) != EOF)
{
```

```
    putw (numbers, F3);
}
```

```
fclose (F2);
```

```
fclose (F3);
```

```
F3 = fopen ("data3.txt", "r++");
i = 0;
```

```
while ((numbers = getw (F3)) != EOF)
{
```

```
    sort [i] = numbers;
```

```
    i++;
}
```

```
fclose (F3);
```

```
F3 = fopen ("data3.txt", "w++");
for (j=0; j<i; j++)
{
```

```
    for (k=j+1; k<i; k++)
    {
```

if ($\text{Sort}[i] > \text{Sort}[k]$)

{

$\text{temp} = \text{Sort}[j];$

$\text{Sort}[j] = \text{Sort}[k];$

$\text{Sort}[k] = \text{temp};$

}

~~Putw (Sort[j], F3);~~

}

~~Fclose(F3);~~

~~F3 (Fopen("data3.txt", "ftt");~~

~~while ((number = getw(F3)) != EOF)~~

~~{~~

~~printf("In %d", number);~~

~~}~~

~~Fclose(F3);~~

~~getch();~~

Y

((C:\Users\Tifl\Desktop))

Output:-

=====
File f202 : 30036
Total 1201 : 12003
12003 - 1271202

File DATA - 1

Enter -1 For stop For add number
into File :- f202.txt

Enter the numbers = 10

(54, 12, 7
6, 12, 4, 3
7, 12, 14, 15
-1)

File DATA - 2

Enter -2 For stop (For add) number
into File :- f202.txt

Enter the numbers = 12

3
15
8
-1

Merged data of File DATA - 1 &
DATA - 2 File :-

3

4

5

8

10

12

15

15

Practical :- 36

- * Write a Program to work as a DOS COPY command using command line Argument.

```
#include <stdio.h>
#include <conio.h>
void main (int argc, char *argv[])
{
    FILE *FP1, *FP2;
    char ch;
    clrscr(); // clear screen
    if (argc != 2)
    {
        printf("Usage : %s file1 file2\n");
        printf("In help : file1<file name 1>\n");
        exit (0);
    }
    FP1 = fopen (argv[1], "r");
    if (FP1 == NULL)
    {
        printf("File not Found . i.e %s\n", argv[1]);
        exit (1);
    }
    while ((ch = getchar ()) != EOF)
    {
        put (ch, FP2);
    }
    printf("File is created : %s\n", argv[2]);
    fclose (FP2);
    getch ();
}
```

Output:-

C:\Users\abhiwadi

C:\Users\abhiwadi

(Given & And, And, Or)

c:\tc\bin\lab-36\abc.txt

Putushottam BCA College
(SPPU)

ABC.txt is created

Practical:- 37

- * Write a C Program to work as a type Command using command line Argument.

```
#include <stdio.h>
#include <conio.h>
Void main (int argc, char *argv[])
{
    FILE *FP;
    char ch;
    clrscr();
    if (argc != 2)
    {
        printf("In required Parameters missing:-");
        printf("In help: File <File name>");
        exit (1);
    }
    FP = fopen (argv[1], "r");
    if (FP == NULL)
    {
        printf ("In File not Found . Is In",
               argv[1]);
        exit (1);
    }
    while ((ch =getc (FP)) != EOF)
    {
        printf ("-1.c", ch);
    }
    fclose (FP);
    getch ();
}
```

Output:-

c:\tcl\bin Lab - 37. ABC.txt

Practical :- 38

- * Write a C program to work as dos copy command using command line Argument.

```
#include <stdio.h>
#include <conio.h>
void main (int argc, char * argv[])
{
    FILE * FS, * Ft;
    char ch;
    clrscr ();
    if (argc != 3)
    {
        printf ("In required Parameters missing:-");
        printf ("In help: File /<File name In");
        exit (1);
    }
    FS = fopen (argv[1], "r");
    if (FS == NULL)
    {
        printf ("In File not Found -S In",
               argv[1]);
        exit (1);
    }
    Ft = fopen (argv[2], "w");
    while ((ch = getc (FS)) != EOF)
    {
        putc (ch, Ft);
    }
    printf ("In [ File [S] Copied ");
    fclose (FS);
    fclose (Ft);
    getch ();
}
```

Output:-

C:\diff>ls -l

C:\diff>ls -l

(C:\diff>cd ..© abc.txt xyz.txt)

c:\tc\bin>ALB + 38 Abc.txt xyz.txt

1 file is copied

Practical :- 39

- * Write a programs which explain the use of memory allocation functions.

```
#include <stdio.h>           /* begin */
#include <conio.h>
void main ()
{
    int *P, *t;                /* declare pointer */
    int n;
    clrscr();                  /* clear screen */
    printf("In Enter value for size:-");
    scanf("%d", &n);
    P = (int) malloc(n * sizeof(int));
    if (P == NULL)
    {
        printf("In No");      /* error message */
    }
    else
    {
        printf("In input values");
        for (t = P; t < P + n; t++)
        {
            scanf("%d", t);   /* read values */
        }
        clrscr();
        printf("In Entered values are %d", *P);
        for (t = P; t < P + n; t++)
        {
            printf("\n %d", *t);
        }
        getch();              /* wait for key */
    }
}
```

Output :-

C. difficile 96079-01 ff
C. difficile 96079-01 ff
C. difficile

Entered value for size = 5

Input value = 1

Enter value "after" if it is?

1

2

3

(29004-00) 148189

5

$(\text{true} \wedge (\text{true} \wedge \text{false})) \rightarrow \text{false}$

$(\text{true} \wedge (\text{true} \wedge \text{false})) \rightarrow \text{false}$

Practical :- 40

- * Write a Program which explains the use of macro.

```
#include <stdio.h>
#include <conio.h>           // for clrscr()
#define CUBE(a) a*a*a
void main ()
{
    int no;                  // user input
    clrscr();                // clear screen
    printf ("Enter no:-");
    scanf ("%d", &no);
    CUBE(no);
    printf ("CUBE = %d", CUBE(no));
    getch();
}
```

Output:-

Entered no = 5

CUBE = 125