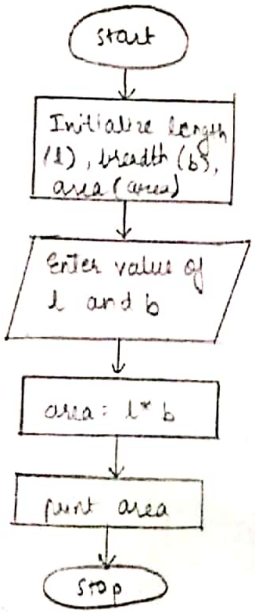
★★ INDEX ★★

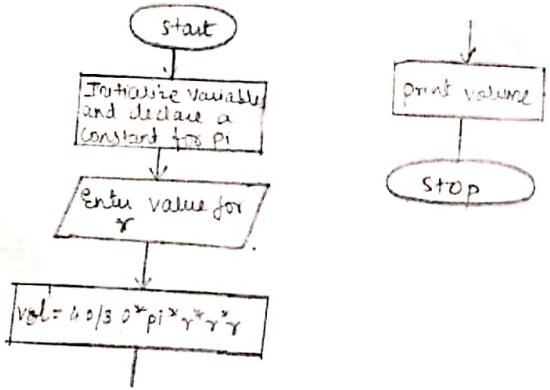
No.	Title	Page No.	Date	Staff Member's Signature
	2nd Sem C-programing			1
1.	Program to understand the basic datatypes and inp/op.	28	5/12/19	10/12
2.	Programs to operators and exp	33	10/12/19	17/12
3.	programs on if-else statement	37.	17/12/19	1/01
4.	Programs on conditional statement	45	7/1/2020	14/01
5.	~~Prattice~~ Practical 5.	52	14/1/20	
6.	Program to understand string manipulation	61.	21/1/20	
7.	Programs on user defined func.	63	4/2/20	24/02
8.	Programs on structures		11/2/20.	
9.	Programs on pointers:		23/2/20	25/02
10.	Programs on file handling		24/2/20	

output: program 1

Enter a number for length and breadth : 7 3
The area is 21



program 2: Enter radius 7
The volume of sphere is 1436.026733



PRACTICAL- 01

AIM: Program to understand the basic ~~ala~~ datatypes and input / output

program 1: Area of rectangle

```
# include <iostream.h>
# include < stdio.h >
# include < conio.h >
void main ( )
{
    int l , b , area;
    clscr( );
    printf (" Enter a number for length and breadth :");
    scanf (" %d %d , &l , &b);
    area = l*b ;
    printf (" The area is %d");
    getch ( );
}
```

program 2: Volume of sphere

```
# include < stdio.h >
# include < conio.h >
void main ( )
{
    float vol , r , pi ;
    pi = 3.14;
    clscr( );
    printf (" Enter radius");
```

```
    scanf("%f", &r);
    vole = 4.0/3.0 * pi * r * r * r;
    printf("The volume of sphere", vol);
    getch();
}
```

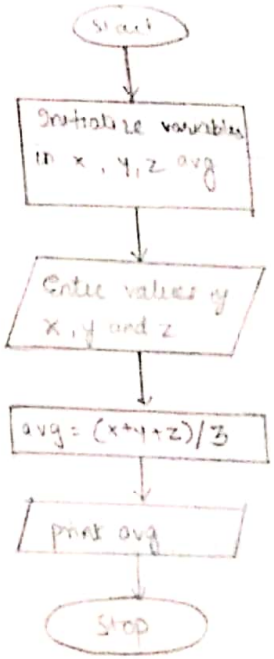
Program 3 Average of three numbers

```
# include <stdio.h>
# include<conio.h>
void main()
{
    float x, y, z, avg;
    clrscr();
    printf("Enter three numbers=");
    scanf("%f %f %f", &x, &y, &z);
    avg = (x+y+z)/3;
    printf("The average of no is", avg);
    getch();
}
```


output:

program 3:

Enter three numbers = 3 10 50
The average of no is 21

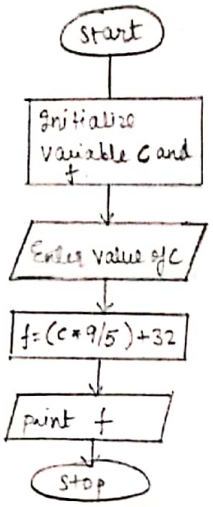


Output:

program 4

Enter degree in celsius 31

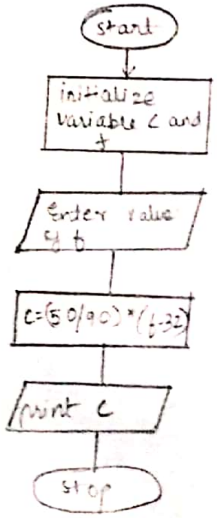
Fahrenheit: 87.8



program 5:

Enter the value of fahrenheit 80

Celsius: 26.666667



program 4: Convert temperature from celsius to farenheit

```
# include < stdio.h>
# include < conio.h>
void main ()
{
    float c, f;
    clrscr();
    printf (" Enter degree in celsius");
    scanf ("%f", &c);
    f = ( c* 9/5 )+32 ;
    printf (" Fahrenheit°: %f", f);
    getch ();
}
```

program 5: Convert temperature from fahrenheit to celsius

```
# include < stdio.h>
# include < conio.h>
void main ()
{
    float c, f;
    clrscr();
    printf (" Enter the value of fahrenheit");
    scanf (" %f", &f);
    c = (5.0/9.0) * (f-32);
    printf (" celsius:%f", c);
    getch();
}
```

PRACTICAL-1

Aim: Program to understand the basic datatype and input/output

program 1: Area of rectangle

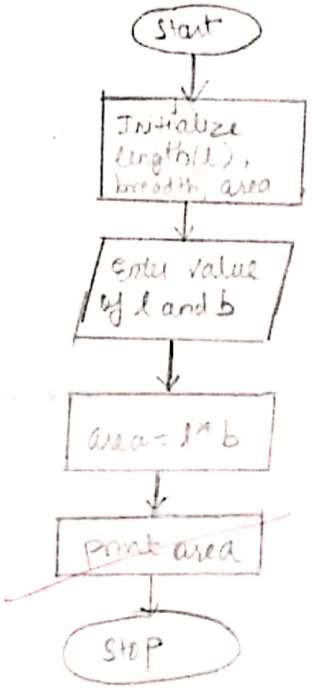
Algorithm
step1:
step2: Initialize three variables length, breadth, Area
step3: Take a input from a user and store the value in the variable declared
step4: Find the area of rectangle
step5: print the area of rectangle
step6: End

Code:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int l, b, area;
    clrscr();
    printf("Enter length and breadth");
    scanf("%d %d",&l,&b);
    area = l*b;
    printf("The area of rectangle %d", area);
    getch();
}
```

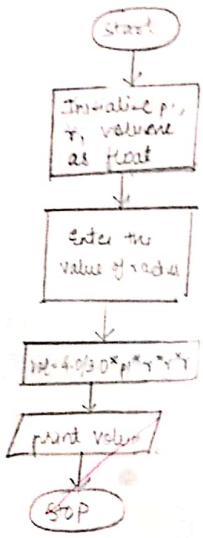
output: Enter length and breadth 7 3
The area of rectangle 21

flowchart:



output: Enter the radius 7
The volume of sphere: 1436.026733

flowchart:



program 2: Volume of sphere

Algorithm:
step 1:
step 2: Initialize three variable for volume of sphere with datatype
step 3: Assign value for pi = 3.14
step 4: clear the screen
step 5: Take a input from the user
step 6: store the value in a variable declared
step 7: perform the operations for volume of sphere
step 8: print the volume of sphere
step 9: End

code:

```
# include < stdio.h>
# include < conio.h>
void main ()
{
    float pi, r, vol;
    pi= 3.14;
    clrscr();
    printf (" Enter the radius")
    Scanf (" %f", &r);
    vol = ~~pi*r*r~~ 4.0/3.0 * pi * r * r * r,
    printf (" ~~Enter~~ The volume of sphere:", vol);
    getch();
}
```

program 3:- Average of three numbers

Algorithm:

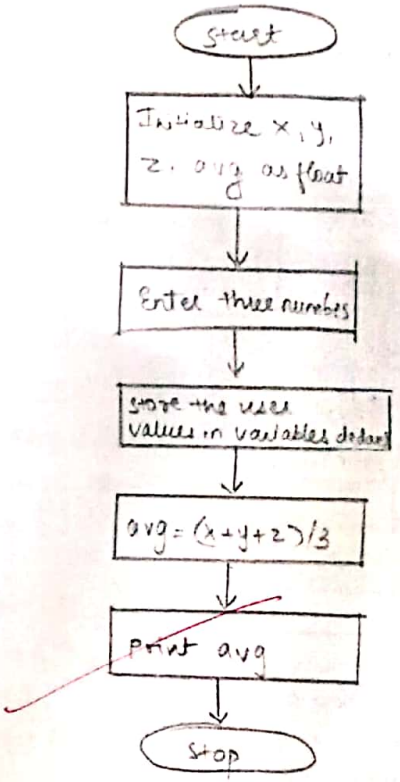
step 1:
step 2: Initialize three variables x, y, z and avg for finding the average of numbers
step 3: clear the screen
step 4: Take three input from the user and ~~assign~~ store the values to the given variables
step 5: perform the operations for average of 3 numbers.
step 6: print the average of three numbers
step 7: Et End

Code:

```
# include <stdio.h>
# include <conio.h>
void main()
{
    float x, y, z, avg;
    clrscr();
    printf(" Enter three numbers:");
    scanf(" %f %f %f", &x, &y, &z);
    avg = (x+y+z)/3
    printf(" The average of three numbers:", avg);
    getch();
}
```

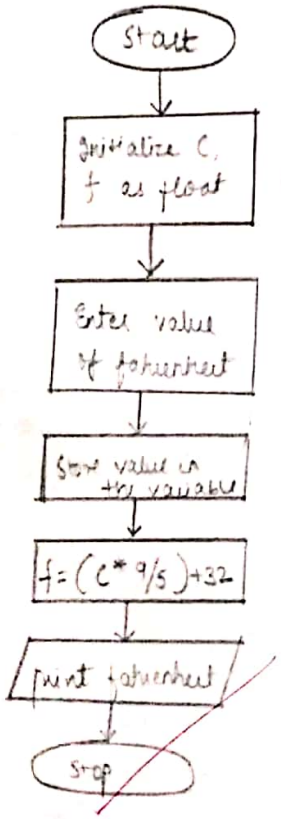
output: Enter three numbers: 3 10 50
The average of three numbers: 21

flowchart:



output: Enter the value of celsius 31
The fahrenheit is: 87.8

flowchart:



program 4: Convert temperature from celsius to fahrenheit

Algorithm:
Step 1:
Step 2: Initialize two variables for celsius and fahrenheit
Step 3: Clear the screen
Step 4: Take the input from the user of celsius
Step 5: Convert the celsius to fahrenheit using this operation $f=(C*9/5)+32$
Step 6: print the fahrenheit value
Step 7: End

code:

```
# include < stdio.h>
# include < conio.h>
void main ()
{
    float c, f;
    clrscr();
    printf ("Enter the value of celsius");
    scanf("%f", c);
    f = (c*9/5)+32;
    printf(" The fahrenheit is: ", f);
    getch();
}
```

program 5: Convert the temperature from fahrenheit to celsius

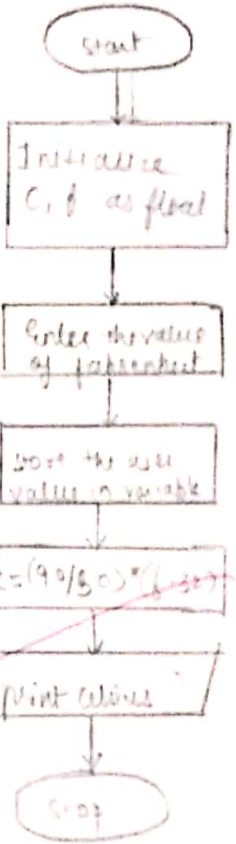
Algorithm
step1:
step2: Initialize two variables with suitable datatype for celsius and fahrenheit.
step 3: Clear the screen
step 4: Take input from the user for fahrenheit.
Step5: Store the value of fahrenheit which is initialized at step2.
step 6: perform the celsius operation to find the celsius $c=(5.0/9.0)*(f-32)$
step 7: print the celsius
step 8: End

Code:

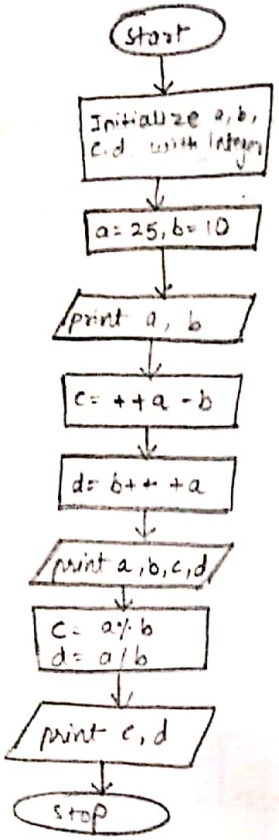
```
# include < stdio.h>
# include < conio.h>
void main ()
{
    float c, f;
    clrscr();
    printf (" Enter the value of fahrenheit");
    scanf (" %f ",&f)
    c= (9.0/5.0) * (f-32)
    printf (" The celsius is: ", c);
    getch();
}
```


Output: Enter the value of fahrenheit 80
The celsius is: 26.6666667

flowchart:



10/12



Output: a=25, b=10
a=26, b=11, c=16, d=36
c=4, d=2

PRATICAL - 2

AIM: Programs on operators and expressions.

program-1

Algorithm:

step 1: Intialize four variables with datatype int
step 2: clear the screen
step 3: store the value 25 in a and 10 in b.
step 4: ~~Take the value from user~~ Print the value of a & b
step 5: Do the expression c= ++a - b
step 6: Do post increment b and add to a, store it in d
step 7: print the value of a, b, c, d
step 8: Do a o/o b and store in c
step 9: Do a/b and store in d
step 10: print the value of c and d

```
# include <stdio.h>
# include <conio.h>
Void main()
{
    int a, b, c, d;
    clrscr();
    a=25; b=10;
    printf("\n a=%d, b=%d", a, b);
    c= ++a - b;
    d= b++ + a;
    printf("\n a=%d, b=%d, c=%d, d=%d",
```

```
        a, b, c, d);
    c = a % b
    d = a / b
    printf("\n c=%d, d=%d", c, d);
    getch();
}
```

program: 2

Algorithm

Step 1: Initialize variable a, b, c with value a = 8, b=15, c=3; and x, y, z

Step 2: print the value of a, b, c

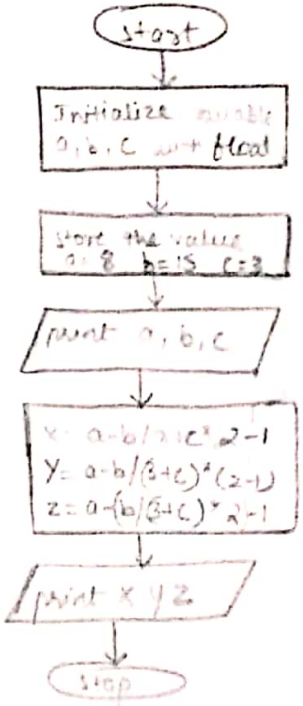
Step 3: perform a-b/3+c*2-1 and store in x

Step 4: perform a-b/(3+c)*(2-1) and store in y

Step 5: perform a-(b/(3+c)*2)-1 and store in z

Step 6: print the value of x, y, z

```
# include <stdio.h>
# include <conio.h>
void main();
{
    float a, b, c;
    a = 8;
    b = 15;
    c = 3;
    printf("\n a = %f, b = %f, c = %f", a, b, c);
    x = a - b / 3 + c * 2 - 1;
    y = a - b / (3 + c) * (2 - 1);
    z = a - (b / (3 + c) * 2) - 1;
```

output:- a = 8.000000, b = 15.000000, c = 3.000000

x = 8.000000, y = 5.500000, z = 2.000000

```
        a, b, c, d);
    c = a % b
    d = a / b
    printf("\n c = %d, d = %d", c, d);
    getch();
}
```

program: 2

Algorithm

step 1: Initialize variable a, b, c with value a = 8, b = 15, c = 3; and x, y, z

step 2: print the value of a, b, c

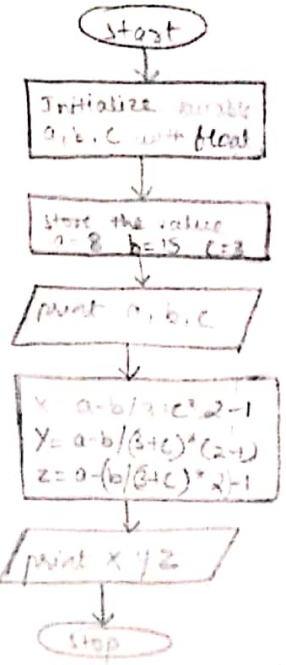
step 3. perform a - b / 3 + c * 2 - 1 and store in x

step 4: perform a - b / (3 + c) * (2 - 1) and store in y

step 5. perform a - (b / (3 + c) * 2) - 1 and store in z

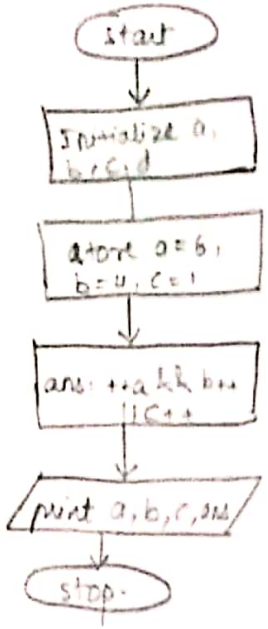
step 6: print the value of x, y, z

```
# include <stdio.h>
# include <conio.h>
void main();
{
    float a, b, c;
    a = 8;
    b = 15;
    c = 3;
    printf("\n a = %f, b = %f, c = %f", a, b, c);
    x = a - b / 3 + c * 2 - 1;
    y = a - b / (3 + c) * (2 - 1);
    z = a - (b / (3 + c) * 2) - 1;
```

output :- a = 8.000000, b = 15.000000, c = 3.000000

x = 8.000000, y = 5.500000, z = 2.000000



output: a=7, b=5, c=1, ans=1


```
    printf ("\n x=%f, y=%f, z=%f",
                                x, y, z);
    getch ();
}
```

program 3

Algorithm:

step 1: Initialize a, b, c, ans with datatype as integer

step 2: clear the screen

step 3: store the value in a = 6, b = 4, c = 1

step 4: perform expression ++a && b++ || c++;

step 5: and store the value in ans

step 5: print the value for a, b, c, ans

```
# include <stdio.h>
# include <conio.h>
void main()
{
    int a, b, c, ans;
    clrscr();
    a = 6; b = 4; c = 1;
    ans = ++a && b++ || c++;
    printf (" a=%d, b=%d, c=%d, ans=%d",a,b,c,
                                        ans);
    getch();
}
```

program 4:

Algorithm:

Step 1: Initialize variables a, b, c, x with datatype int

step 2: clear the screen

step 3: store x=10

step 4: per post increment the value of x and store in a

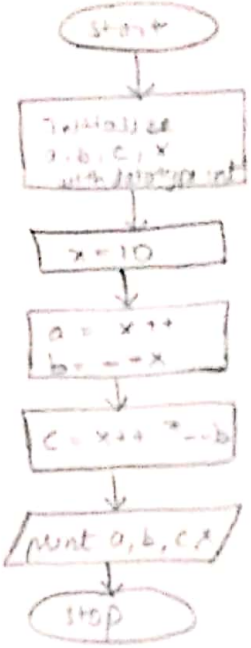
step 5: pre decrement the value of x and store in b

step 6: perform x++ * --b and store in c

step 7: print the value of a, b, c, x

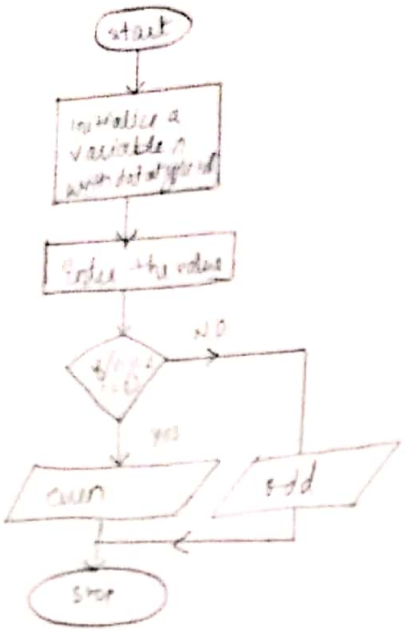
Step 8: End.

```
# include <stdio.h>
# include <conio.h>
void main()
{
    int a, b, c, x;
    clrscr();
    x=10;
    a= x++;
    b= --x;
    c= x++ * --b
    printf("a=%d, b=%d, c=%d, x=%d", a, b, c, x);
    getch();
}
```

output: a=10, b=9, c=90, x=11

17/12



Output Enter the value 5
It is odd

PRACTICAL-3

AIM:

program 1→ Even and odd

Algorithm

Step 1: Initialize a variable with datatype n
Step 2: Clear the screen
Step 3: Take a value from the user
Step 4: Store in the variable initialized
Step 5: Use conditional statement to check the value is ~~equal~~ modulus by 2 and equal to 0
Step 6: If equal to zero print even or else display odd.

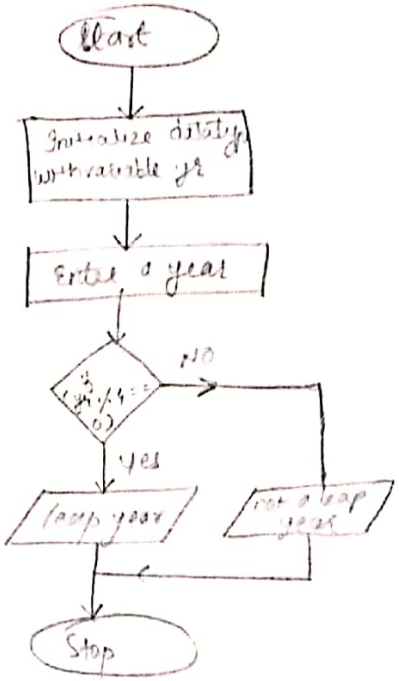
```
# code
# include <~~iostream.h~~ stdio.h>
# include < conio.h>
Void main ()
{
    int n;
    clrscr();
    printf("\n enter the value");
    scanf ("%d", &n);
    if (n%.2 ==0)
        printf ("It is even");
    else
        printf (" It is odd");
} getch();
```

program 2 - leap year.

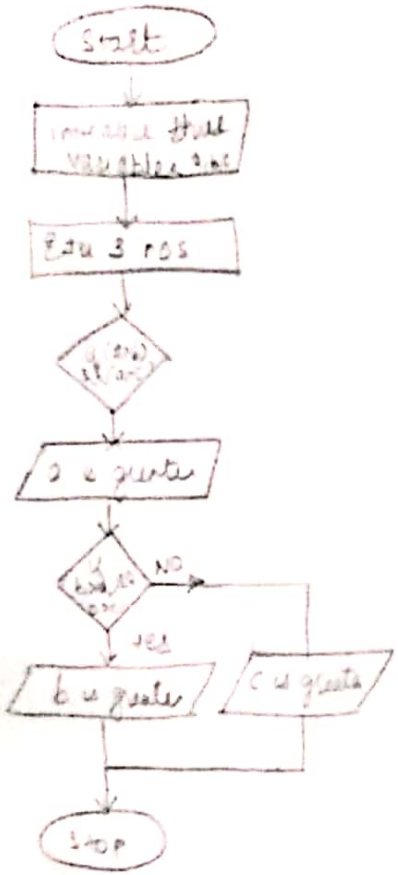
Algorithm
step 1: Initialize year with datatype integer.
step 2: clear the screen.
step 3: ~~Take~~ Accept the value from the user
step 4: Store it in a variable
step 5: Use conditional statement & check whether year is modulus by 4 and equal to zero.
step 6: if equal to zero it is a leap year or else display not a leap year.

Code.

```
# include <stdio.h>
# include <conio.h>
void main()
{
    int yr;
    clrscr();
    printf("Enter the year");
    scanf("%d", &yr);
    if (yr%4==0)
      printf("It is a leap year");
    else
      printf("It is not leap year");
    getch();
}
```

Output:- Enter the year 2021
It is not a leap year.



output: enter 3 nos 3
7
1

b is greater

program: 3

Algorithm:

step 1: Initialize three variables a, b, c, with integer datatype

step 2: Accept 3 values from the user and store it in the variables

step 3: Use if-else conditional statement, check whether first variable is more than second variable and ~~second~~ first variable is greater than third variable.

step 4: print first variable is greater.

step 5: ~~Else~~ Else if second variable is greater than first variable and second variable is greater than third variable.

step 6: print second variable is greater or else third variable is greater

~~step~~:

Code

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int a, b, c;
    clrscr();
    printf("Enter 3 nos");
    scanf("%d, %d, %d", &a, &b, &c);
    if ((a>b) && (a>c))
        printf("\n a is greater");
    else if ((b>a) && (b>c))
        printf("\n b is greater");
```

```
    else
        printf("\n c is greater ");
    getch();
}
```

program-4

Algorithm:

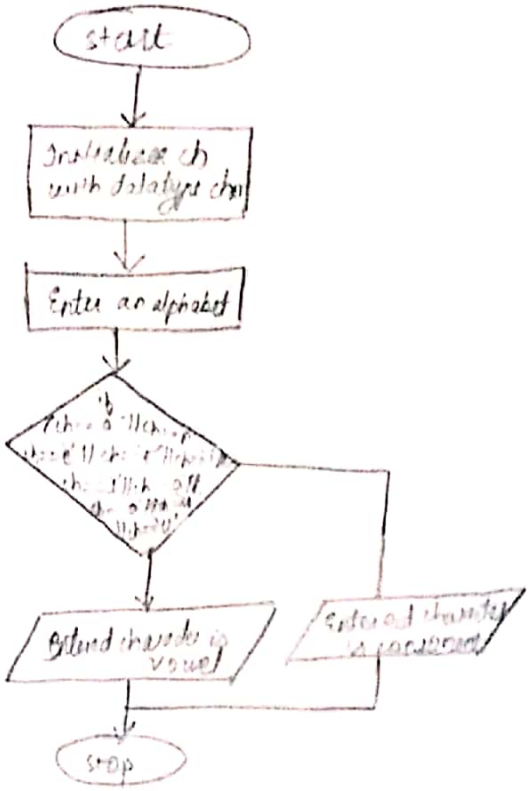
```
# include <stdio.h>
# include <conio.h>
void main()
{
```

Algorithm

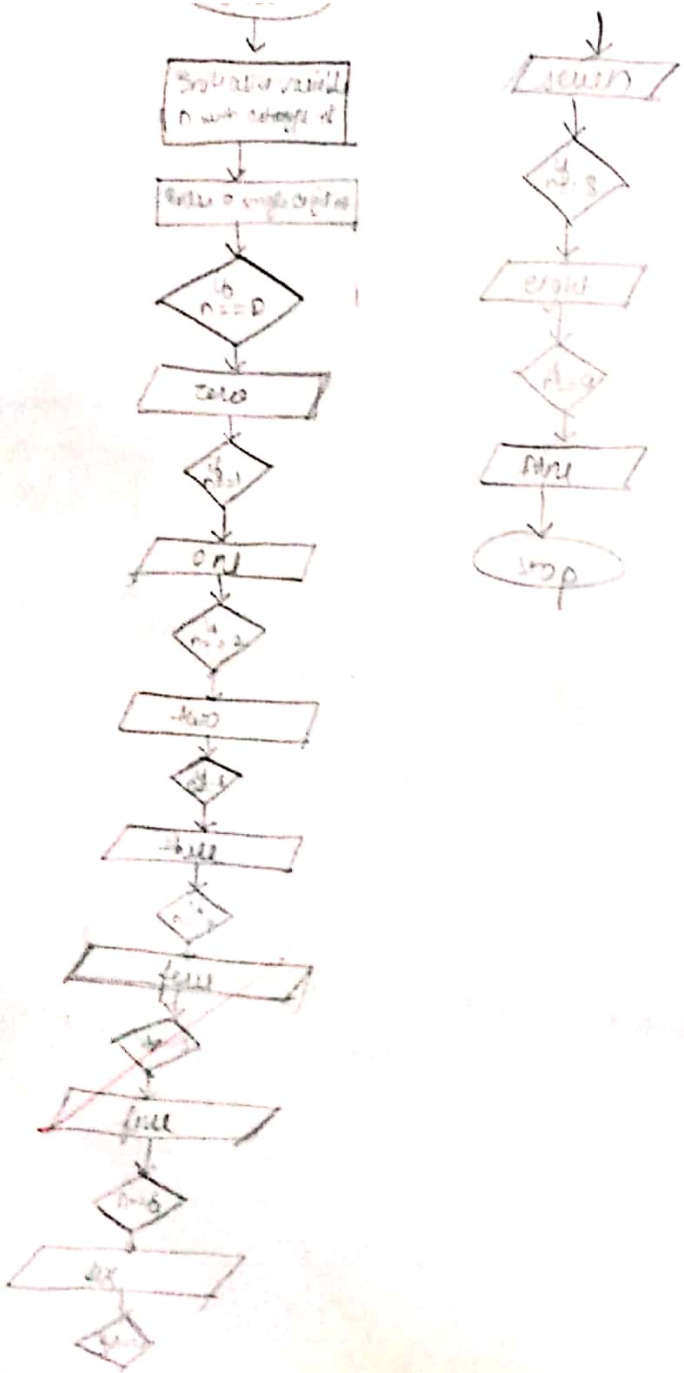
step 1: Initialize character with datatype char
step 2: Clear the screen
step 3: Accept ~~the~~ an alphabet from the user.
step 4: store it in a variable name character
step 5: Use conditional statement, if character is equal to vowels (uppercase or lowercase) print entered character is vowel
step 6: else display entered character is consonant.

code

```
# include <stdio.h>
# include <conio.h>
void main()
{
    char ch;
    clrscr();
```

Output: Enter an alphabet g
entered character is consonent




```
    printf(" Enter an alphabet");
    scanf(" %c", &ch);
    if (ch=='a' || ch=='A' || ch=='e' || ch=='E'
        || ch=='i' || ch=='I' || ch=='o' || ch=='O' ||
        ch=='u' || ch=='U')
        printf(" \n entered character is vowell");
    else
        printf("\n entered character is consonent");
    getch();
}
```

program 5: Program to enter single digit number from keyboard and print

Algorithm:

step 1: clear the screen
step 2: Initialize a variable with datatype integer
step 3: Accept a single digit decimal value from user
step 4: Use conditional statement, check whether value is equal to 0
step 5: print zero else print 1 check value is equal to print two else display three.
step 6: else value equal to 3 print three else display 4
step 7: Do it till 9 the value is equal to 9 else display error

```
# include <stdio.h>
# include <conio.h>
void main()
{
   clrscr();
   int n;
   printf("\n Enter single digit decimal no:");
   scanf("%d", &n);
   if (n==0)
   printf("\n zero")
   else if (n==1)
{  printf("\n one");
{  else if (n==2)
   printf("\n two");
   else if (n==3)
   printf("\n three");
   else if (n==4)
   printf("\n four");
   else if (n==5)
   printf("\n five");
   else if (n==6)
   printf("\n six");
   else if (n==7)
  printf("\n seven");
  else if (n==8)
  printf("\n eight");
  else if (n==9)
  printf("\n nine");
  else
  printf("\n error");
  getch();
}
```


Output: Enter a single digit decimal no 2
two

~~PRATICAL 4~~.

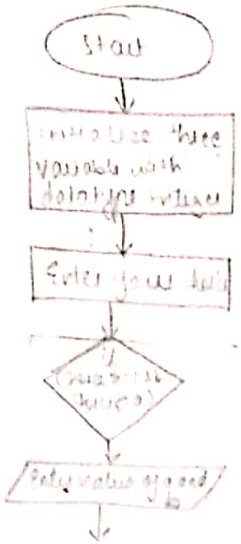
Program-6 – Program to perform addition, substraction, ~~AHH~~ multiplication and division using switch case.

Algorithm:

step 1: Initialize four variables of datatype integer.
step 2: Take a choice from the user
step 3: Use conditional statement to check whether the entered choice is greater than 1 or less than equal to four
step 4: Then print the value of the ~~vaalo~~ value entered by the user to perform the operation.
step 5: Use switch case, if case 1 is addition perform the operation
step 6: If choice is case 2 then perform substraction.
step 7: If choice is equal to case 3 then perform multiplication.
step 8: If choice is equal to case 4 then perform division
step 9: If choice does not match any case then display 'no operation'.
step 10: Break to come out of the switch case
step 11: End.

Code

```
# Include <stdio.h>
# Include c conio h>
void main ()
{
    int a, b, r, choice;
    clrscr();
    printf ("\n Enter your choice");
    printf ("\n 1) Addition");
    printf ("\n 2) Subtraction");
    printf ("\n 3) Multiplication");
    printf ("\n 4) Division");
    printf ("\n 5) Exit");
    scanf ("%d", & choice);
    if (choice >=1 && choice <=4)
    {
        printf ("\n Enter value of a and b :");
        scanf ("%d %d", &a, &b);
    }
    switch (choice)
    {
        case1:
        r= a+b;
        printf ("\n %d + %d = %d", a, b, r);
        break;
        Case 2:
        r= a-b
        printf ("\n %d - %d = %d", a, b, r);
        break;
```



output:

Enter your choice
2
Enter value of a and b 8
10
-2


```
case 3:
    r = a * b;
    printf("%d * %d = %d", a, b, r);
    break;
case 4:
    r = a / b;
    printf("%d / %d = %d", a, b, r);
    break;
default:
    printf("\n no operation");
    break;
}
getch();
}
```

07/01/2020

PRACTICAL - 4

AIM: Programs on Conditional statement

program 1: program to print even numbers:

Algorithm:

step 1: Initialize a variable with datatype integer

step 2: Use condition statement to print in even number. Initialize a variable upto the number you want to print.

step 3: ~~print~~ display the even numbers.

code:

```
# include <stdio.h>
# include <conio.h>
void main()
{
    int i;
    clscr();
    for ( i=2 ; i<=20 ; i=i+2)
    {
    }  printf ("%d \t", i);
    getch();
}
```

output :-

2
4
6
8
10
12
14
16
18
20

Output:

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

program 2: To Print

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

Algorithm:

Step 1: Initialize two variables with integer datatype
Step 2: Store one variable equal to 1
Step 3: Use conditional statement, with less equal to 5
Step 4: Declare value one in another variable
Step 5: Initialize conditional statement for another variable which is less than equal to first variable
Step 6: Display the value of another variable
Step 7: Increment the value of another variable
Step 8: Decrement the value of first variable

Code

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int k, i;
    clrscr();
    i=1
    while (i<=5)
    {
        k=1;
        while (k<=i)
        {
            printf ("%d", k);
            ++k;
        }
```

```
        printf("\n");
        i++;
    }
    getch();
}
```

program 3:- To print sum of all odd numbers

Algorithm:

Step 1: Initalize four variable with integer datatype

~~Step 2: Use conditional statement~~

Step 2: Accept the value from the user and store it in a variable.

Step 3: initalize sum equal to zero

Step 4: Use conditional statement, in which first it gives the remainder store it in a variable, use if statement to check whether the variable is equal to 1

Step 5: Then ~~sum1 equal to sum~~ Store the value in sum by adding sum and variable

Step 6: ~~post~~ pre increment the variable

Step 7: Then check the condition if the variable is less than equal to user variable

Step 8: print the sum of all odd numbers

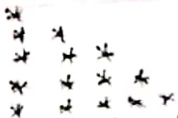
Step 9: end:

output: Enter the value of n 10
The sum of all odd no. are 25

code:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, n, sum, x;
    clscr();
    printf("Enter the value of n");
    scanf("%d", &n);
    i=1
    sum=0;
    do
    {
    x = i%2;
    if (x==1)
    {
        sum= sum+i;
    }
     ++i;
    }
    while (i<=n)
    {
     printf("The sum of all odd no. are %d", sum);
     getch();
    }
```

program 4: → To print



Algorithm

step 1: Initialize two variable with datatype integer

step 2: Use nested conditional statement, and check if it is less than equal to 5 and increment it it by 1

step 3: In another condition check the value starts from 1 and less than equal to previous conditional variable and increment the value by 1

step 4: print *

code:

```
# include < stdio.h>
# include <conio.h>
void main()
{
    int i, j;
    clscr();
    for (i=1; i<=5; i++)
    {
        for (j=1; j<=i; j++)
        {
            printf(" *");
        }
    printf("\n");
    }
    getch();
}
```

output:

output:

1
1
2
3
5
8
13
21
34
55
89
144
233
377
610
987
1597
2584

program 5:

Algorithm

step 1: Initialize four variables with datatype integer
step 2: Initialize two variables with value 1 and 0
step 3: print the value of second variable
step 4: Use for condition statement which starts from 3 and less than equal to 20, increment the value
step 5: Add the two variable and store it in 'f' variable indicating fibonacci
step 6: print the fibonacci series
step 7: swap the values

code:

```
# include <stdio.h>
# include <conio.h>
void main()
{
    int a, b, f, i;
    clrscr();
    a=1;
    b=0;
    for( i=3; i<=20; i++)
    {
        f=a+b;
        printf("\n %d", f);
        a=b;
        b=f;
    }
    getch();
}
```

printf("%d", b);

PRACTICAL-5

Aim: Arrays

program-1 To print sum of elements of array

Algorithm:

step 1: Initialize 3 variables with datatype integer
step 2: Accepts the values into array from user
step 3: Use conditional statement, check whether it starts from zero and less than 5 increment value
step 4: It will display all the values entered by the user
step 5: ~~Use conditional statement~~ Repeat the step 3 and print the sum equal to sum plus num
step 6: ~~print~~ display the sum of elements

Code:

```
# include <stdio.h>
# include <conio.h>
void main ()
{
   clrscr();
   int i, num[5], sum=0;
   printf(" Enter the values into the array");
   for (i=0; i<5; i++)
   scanf (" %d", &num[i]);
   printf ("\n entered elements are");
   for (i=0; i<5; i++)
   printf (" %d ", num[i]);
   for (i=0; i<5; i++)
     sum = sum+num[i]
   printf ("\n sum of elements are %d", sum);
   getch();
}
```


output: enter the values into array 2
3
4
5
6
entered elements are 2 3 4 5 6
sum of elements is: 20

output Enter 10 values in array:
4
5
6
8
9
0
10
11
13
largest number is : 13

program 2 — To print the largest no. using array

```
#include <stdio.h>
#include <conio.h>
void main()
{
```

Algorithm

step 1: Initialize three variables with datatype int
step 2: Take the values from the user
step 3: Use conditional statement where equal to zero and less than 10 and then increment the value
step 4: display the values entered by user
step 5: Repeat step 3 and use another conditional statement to check the position of element and the values entered by user
step 6: store the values in the position of element
step 7: display the largest number

code

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int i, num[10], l;
    printf ("\n Enter 10 values in array: ")
    for (i=0; i<10; i++)
    scanf ("%d", &num[i]);
    l=num[0];
    for (i=1; i<10; i++)
    {
      if ( l, num[i])
```

```
        l = num[i];
    }
    printf("\n largest number is: %d", l);
    getch();
}
```

program 3:- To find positive number.

code:-

```
# include <stdio.h>
# include <conio.h>
Void main()
{
    clscr();
    int i, num[10], p;
    printf("Enter the values into array");
    for(i=0; i<10; i++)
    scanf("%d", &num[i]);
    p=1;
    for(i=1; i<10; i++)
    {
        if(num[i]>0)
        {
            p=p+1;
        }
    }
    printf("\n no. of positive number present are:", p);
    getch();
}
```


Output:- Enter the values into array. 5
-55
22
5
-3
4
11
16
-19
20

No. of positive number present are. 6

output: Enter the values into array!
2
3
4
5
6
7
8
9

no. of odd numbers present: 5

Program 4: To find odd numbers present

code:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    clrscr();
    int i, num[10], p;
    printf("Enter the values into array");
    for(i=0; i<10; i++)
    scanf("%d", &num[i]);
    p=0;
    for(i=0; i<10; i++)
    {
      if num[i] %2==1)
    {
        p=p+1;
    }
}
}
printf("\n no. of odd numbers present:", p);
getch();
}
```

program 5: program to print in ascending order

```
#include < stdio.h>
# include <conio.h>
void main ()
{
   int i , j , num[5], t;
   printf (" Enter the values into array ");
   for ( i=0 ; i<5 ; i++)
   scanf ("%d" , &num[i]);
   for ( i=0 ; i<5 ; i++)
   {
      for (j= i+0 ; j<5 ; j++)
      {
         if ( num[i] > num[j])
         {
            t= num[i];
            num[i] = num[j];
            num[j]= t;
         }
      }
   }
   printf (" sorted array ");
   for (i=0 ; i<5 , i++)
   {
   printf (" \n num[i]);
   if( num[i] > num[j])
   getch()
}
```


output Enter the values into array 2

4
6
9
1

sorted array 1 2 4 6 9

Enter elements of matrix x : 2

1
2
3
4
5
6
7
8

Enter elements of matrix y: 3

2
2
2
2
2
2
2
2

matrix 12 10 10

22 24 24

48 42 42

t=1 num[i];
num[i]

Program-6 :

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int disu();
    int x[3][3], y[3][3], z[3][3];
    int r, c, k, t;
    printf("\n Enter elements of matrix x")
    for(r=0; r<3; r++)
    {
      for(c=0; c<3; c++)
      {
        scanf("%d", &x[r][c]);
      }
    }
    printf("\n Enter elements of matrix y:");
    for(r=0; r<3; r++)
    {
      for(c=0; c<3; c++)
      {
        scanf("%d", &y[r][c]);
      }
      printf("Enter the value of matrix y:");
      for(r=0; r<3; r++)
      {
```

```
        for (c=0; c<3; c++)
        {
          scanf ("%d", &y[r][c]);
        }
    }

    for (r=0; r<3; r++)
    {
      for (c=0; c<3; c++)
      {
        t=0
        for (k=0; k<3; k++)
        {
          t=t + x[r][k] * y[k][c];
        }
        z[r][c]=t
      }
    }

    printf("\n matrix z:");
    for (c=0; c<3; c++)
    {
      printf ("\t%d", z[r][c]);
    }printf ("\n");

    getch();
}
```

Enter the elements of matrix m:3

4
5
6
7
8
9
2
3

Enter the elements of matrix n:2

3
4
5
6
7
8
9
0

matrix sum : 5 7 9
              11 13 15
              17 11 13

Program - 7 - To print matrix addition.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int m[3][3], n[3][3], sum[3][3];
   int x,y;
   printf("Enter the elements of matrix m");
   for(x=0; x<3; x++)
   {
      for(y=0; y<3; y++)
         scanf("%d", &m[x][y]);
   }
   printf("\n Enter the elements of matrix n");
   for(x=0; x<3; x++)
   {
      for(y=0; y<3; y++)
         scanf("%d", &n[x][y]);
   }
   for(x=0; x<3; x++)
   {
      for(y=0; y<3; y++)
         sum[x][y] = m[x][y] + n[x][y]
   }
```

```
    }
    printf("\n matrix sum:");
    for(x=0; x<3; x++)
    {
        for(y=0; y<3; y++)
        printf("\t %d", sum[x][y]);
    }
    printf("\n");
}
getch();
}
```

24/01/22

output: Enter your name : Sushmita
My name is : Sushmita

PRACTICAL : 6

Aim: Program to understand string manipulation

Program: C++ to display your name using string

```
#include <stdio.h>
#include <conio.h>
void main()
{
    clrscr();
    char name[20];
    printf("Enter your name:");
    scanf("%s", &name);
    printf("\n My name is : %s", name);
    getch();
}
```

program 2 : To print entered character

```
# include < stdio.h>
# include < conio.h>
void main ()
{
      char a;
      clrscr ();
      printf (" Enter a character ");
      a = getchar ();
      printf (" \n the character is : ");
      getchar (a);
      getch();
}
```

Program 3: To print the entered string

```
# include < stdio.h>
# include < conio.h>
void main ()
{
      char a[50];
      clrscr ();
      printf (" Enter a string : ")
      get (a);
      printf (" \n the entered string is : ");
      puts (a);
      getch ();
}
```


Output: Enter a character a
Entered character is : a.

output: Enter a string sky
The Entered string is : sky

output: my name is
m
y
n
a
m
e

output: Enter a string Taylor
The reversed string is rolyaT

program 4: To print the string in vertical order.

```
# include <stdio.h>
# include <conio.h>
void main()
{
    char name[10] = "my name";
    clscr();
    printf ("my name is:");
    for (int i=0; i<10; i++)
    {
        printf ("\n");
        putchar (name[i]);
    }
    getch();
}
```

program 5: To print reverse string

```
# include <stdio.h>
# include <conio.h>
void main()
{
    char str[10];
    clscr();
    printf ("Enter a string");
    scanf ("%s", &str);
    str (str);
    printf ("The reversed string is: %s", str);
    getch();
}
```

24/02

~~Program 5~~: PRACTICAL-7

Aim: Programs on User defined functions

Program 1: To calculate area and circumference of circle

```
#include <stdio.h>
#include <conio.h>
void circle.(void);
void main ()
{
        clrscr ();
        circle ();
        getch ();
}
void circle (void)
{
        int r;
        float area; circum;
        printf ("Enter the radius");
        scanf ("%d", &r);
        area = 3.14 * r * r;
        circum = 2* 3.14 * r;
        printf ("\n Area: %f", area);
        printf ("\n Circumference: %f", circum);
        getch ();
}
```

output: Enter the radius. 5
Area : 78.500000
Circumference : 31.400000

Output: Enter a number: 25
sum of digits is 7.

Program 2: To find the sum of digits of entered number.

```
#include <stdio.h>
#include <conio.h>
void sum (int n);
void main ()
{
    clrscr();
    int n;
    printf ("enter a number:");
    scanf ("%d", &n);
    sum(n);
    getch();
}
void sum (int n)
{
    int r, s=0
    while (n!=0)
    {
        r= n%10;
        s= s+r;
        n= n/10;
    }
    printf ("\n sum of digits is %d", s);
    getch();
}
```

Program 3 :

```
#include <stdio.h>
#include <conio.h>
void ~~main()~~ sum (int n1, int n2);
void main()
{
        clrscr();
        int n1, n2;
        printf("Enter two number:");
        scanf("%d %d", &n1, &n2);
        sum(n1, n2);
        getch();
}
void sum (int n1, int n2)
{
        int a;
        a = n1+n2;
        printf("sum of two number is : %d",a);
        getch();
}
```


output : Enter two number :78
66
sum of two number is:144

output:

```
Enter four marks: 20
30
40
50
the total is 140
average is 35.0000
```


Program 4: To calculate the total and average of 4 marks

```
# include <stdio.h>
# include <conio.h>
void total (int m1, int m2, int m3, int m4)
void main()
{
    int a, b, c, d;
    printf ("Enter four marks:");
    scanf ("%d %d %d %d", &a, &b, &c, &d);
    total (a, b, c, d);
    getch();
}
    int a, b, c, d;
    printf ("Enter four marks:");
    scanf ("%d %d %d %d", &a, &b, &c, &d);
void total (int m1, int m2, int m3, int m4)
{
    int total;
    total = m1 + m2 + m3 + m4;
    printf ("\n The total is %d", tot);
    average (tot)
}
void average (int tot)
{
    float avg;
    avg = tot / 4
    print ("\n Average is %d", avg);
    getch();
}
```

Program : 5 To find factorial of number.

```
# include <stdio.h>
# include <conio.h>
void factorial (int n)
void main ()
{
        int x, fact;
        printf ("Enter a number:");
        scanf ("%d", &x);
        fact = factorial (x);
        printf ("\n Factorial of %d is %d", x,
                                        fact);
        getch();
}
int factorial (int n)
{
        int f;
        if (n==1)
          return 1;
        else
          f = n * factorial (n-1)
          return (f);
          getch();
}
```

output : Enter a number 3
Factorial of 3 is 6.

24/02

output:

Enter eno and salary : 5 20000
Enter eno and salary : 5 20000
both are equal

Enter eno and salary : 3 15000
Enter eno and salary : 4 25000
both are unequal

PRACTICAL-8

Aim

program 1: Employee Comparison.

```
# include <stdio.h>
# include <conio.h>
struct employee
{
   int eno, salary;
};
void main()
{
  struct employee n, y;
  printf("\n Enter eno and salary:");
  scanf("%d %d", &n.eno, &n.salary);
  printf("\n Enter eno and salary:");
  scanf("%d %d", &y.eno, &y.salary);
  if (n.eno == y.eno && n.salary = y.salary)
  {
  printf("both are equal");
  }
  else
  printf("both are inequal");
  getch();
}
```

Program 2: Fruit structure

```
#include <stdio.h>
#include <conio.h>
struct fruit
{
  char name[20];
  int price, qty, total;
};
void main()
{
  struct fruit f[5];
  int k;
  clrscr();
  printf("\n Enter name, price & qty :");
  for(k=0; k<5; k++)
  {
    scanf("%s %d %d", f[k].name, &f[k].price, &f[k].qty);
    f[k].total = f[k].price * f[k].qty;
  }
  for(k=0; k<5; k++)
  {
    printf("\n name = %s, price = %d, qty = %d",
           f[k].name, f[k].price, f[k].qty);
  }
  getch();
}
```

output:


```
Enter name, price & qty:
apple   20  5
mango   15  3
banana  50  9
cherry  30  7
grapes  30  5

name = apple, price = 20, qty = 5
name = mango, price = 15, qty = 3
name = banana, price = 50, qty = 9
name = cherry, price = 30, qty = 7
name = grapes, price = 30, qty = 5
```

program 8 Initialize the struct theme.

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
struct cricket
{
   char pname[20] tname[20];
   int average;
};
void main ()
{
    clrscr();
    struct cricket p[5], t;
    int i, k, x;
    printf ("\n Enter records of 5 players");
    for (i=0; i<5; i++)
    scanf ("\n %s %s %d \n", &p[i].pname,
                             &p[i].tname, &p[i].average);
    for (i=0; i<5; i++)
    {
      for (i=0; i<4; i++)
      {
        for (k=i+1; k<5; k++)
        {
          x = strcmp (p[i].tname, p[k].tname);
          if (x>0)
          {
            t = p[i];
            p[i] = p[k];
```

Enter records of 5 players.

Dhoni	India	100
Rohit	India	100
Dhiran	India	100
Raina	India	100
Virat	India	100

Team name	players	runs
Dhoni	India	100
Rohit	India	100
Dhiran	India	100
Raina	India	100
Virat	India	100

```
            p[i]= t ;
        }
    }
}
printf ("\n teamwise player name \n");
for ( i=0 ; i<5 ; ++i)
{
    printf ("\n %-s %-s %-d \n", p[i].pname ,
                                 p[i].tname , p[i].salary );
}
  getch();
}
```

program 4: Structure within structure

```
#include <stdio.h>
#include <conio.h>
struct employee
{
    int salary;
};
struct employee
int id ;
char name [10];
struct employee bz;
};
void main()
{
    clrscr();
    int i;
```


Output

Rollno 22 Name Sushmita Salary : 500

```
struct employee S = {:22, " Sushmita ", {500}};
printf ("\n Rollno = %d \t Name = %s \t
        salary = %d", sid, S.name,
                    S.b2.salary);
}
```

25/02

PRACTICAL-9

Aim : Program on pointers.

Program-1

```
# include < stdio.h>
# include < conio.h>
void main()
{
   clscr();
   int a=12, b=4, x, y, *p, *q;
   p= &a;
   q= &b;
   x= *p**q-6;
   y= 4*(*p-*q)+10;
   printf("\n a= %d", a);
   printf("\n b= %d", b);
   printf("\n x= %d", x);
   printf("\n y= %d", y);
   getch();
}
```

output :

a=12
b=4
x=42
y=42

output:

sum = 10
sum = 30
sum = 60
sum = 100
sum = 150

output: x = 30

program-2

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int x[5] = {10, 20, 30, 40, 50};
    int *p, i, sum = 0;
    p = &x[0];
    for(i=0; i<5; i++)
    {
        sum = sum + *p;
        p = p+1;
    }
    printf("\n sum = %d", sum);
    getch();
}
```

Program-3 Pointers as function arguments.

```
#include <stdio.h>
#include <conio.h>
void change(int *p);
void main()
{
    int x = 20;
    change(&x);
    printf("\n x = %d", x);
    getch();
}
void change(int *p)
{
    *p = *p + 10;
}
```

Program-4

```
# include <stdio.h>
# include <conio.h>
void exchange (int *a , int *b);
void main()
{
    int x,y;
    clrscr();
    x=10;
    y=20;
    printf("\n Befor exchange x=%d. y=%d",
    exchange (&x, &y);                    x,y);
    printf("\n after exchange x=%d y=%d",
                                          x,y);
    getch ();
}
void exchange (int *a , int *b)
{
    int t;
    t= *a;
    *a= *b;
    *b= t;
}
```


output:- before exchange x=10 y=20
after exchange x=10 y=20

25/02

Output: opening the file test.c in write mode
enter some text from keyboard to write in file: sunny
closing the file test.c

PRATICAL-10.

Aim : Programs on file finding

Program 1: open file → write and close file.

```
# include <stdio.h>
# include <conio.h>
# include <string.h>
int main()
{
    file fp FILE fp;
    char data[50];
    printf("opening the file test.c in write mode");
    fp = fopen("test.c", "w");
    if (fp == NULL)
    {
        printf("could not open file test.c");
        return 1;
    }
    printf("\n Enter some text from keyboard to
            write in file:");
    while (strlen(gets data))>0)
    {
        fputs(data, fp);
        fputs("\n", fp);
    }
    printf("closing the file test.c");
    fclose(fp);
    return 0;
}
```

Output:

name = fresh2refresh
age = 14
Total no. of characters in file 13.

Program-3 : fscanf(), fprintf(), ftell(), rewind(), functions.

```
#include <stdio.h>
#include <conio.h>
int main()
{
    char name[20];
    int age, length;
    FILE *fp;
    fp = fopen("text.txt", "w");
    fprintf(fp, "%s %d", "Fresh2refresh", 5);
    length = ftell(fp);
    rewind(fp);
    fscanf(fp, "%d", &age);
    fscanf(fp, "%s", &name);
    fclose(fp);
    printf("Name: %s\n Age: %d\n", name,
                                    age);
    printf("Total no. of character in file is %d",
                                    length);
    return 0;
}
```

25/02