

* Algorithm:

- Step 1: Start
 - Step 2: Initialize three variables i, sum and n
 - Step 3: Initialize a for loop to check if number is even and print the given range
 - Step 4: Add current even number to sum and display the sum variable.
 - Step 5: Stop.
- for loop*

Practical - 5

Array

difference of
write
array
display

array:
a program in C++ to
accept elements from the user &
display them.

* Algorithm:

Step 1: Declare an array of any size.

Step 2: Accept the number of elements
want to enter in array.

Step 3: Use for loop to accept the array
elements from the user.

Step 4: Again use for loop to display
array elements.

Source Code:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a[5], size, i;
    clrscr();
    printf("array size");
    printf("Enter the size of array");
    printf(" by entering:");
    scanf("%d", &size);
    for(i=0; i<size; i++)
    {
        printf("\n Enter the value of a[%d]", i);
        scanf("%d", &a[i]);
    }
    printf("\n The elements of array are");
    for(i=0; i<size; i++)
    {
        printf("\n a[%d] = ", i);
        printf("%d", a[i]);
    }
    getch();
}
```

Output:

array 1143
Enter the size of array: 3

Enter the value of a[0] element:

Enter the value of a[1] element:

Enter the value of a[2] element:

Enter the value:

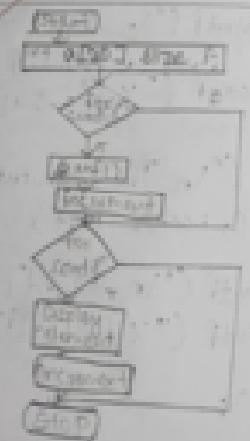
The elements of 'array' are:

a[0]=7

a[1]=8

a[2]=13

Flowchart:



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⑧ Program code using array & for loop

I write a program in C to develop linear search using array.

Algorithm:

Step 1: Define an array of angles of day.

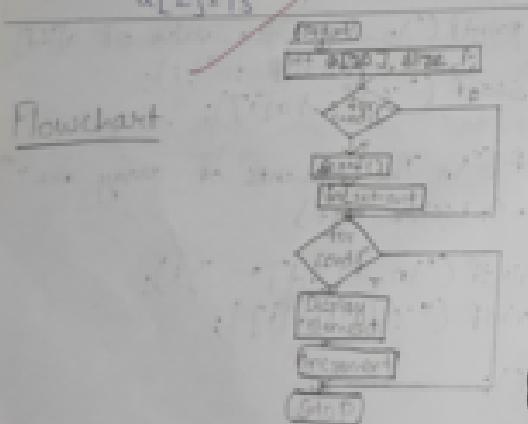
Step 2: Input a value from user till you want to display the linear search.

Step 3: Initialize first element of array to 0 and second element to 1. Be aware that array starts from 0 and 1.

Step 4: Display the array after using for loop to close it.

Output:

array size:
 Enter the size of array: 3
 Enter the value of a[0] element: 7
 Enter the value of a[1] element: 8
 Enter the value of a[2] elements: 2
 Enter the value of array size:
 The elements of array are:
 a[0]=7
 a[1]=8
 a[2]=2



Flowchart

2) Fibonacci series using array.
 2) write a program in C to display Fibonacci series using array.
 * algorithm:
 Step 1: Define an array of size of digits
 Step 2: Accept a value from user till you want to display the Fibonacci series
 Step 3: Initialize first element of array to 0 and second element to 1
 Step 4: Add first element of array to 0 and second element to 1 as sum
 Step 5: Display this series after using for loop to clear off it.

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2. **Source Code**

```
int calculateSum()
{
    int sum = 0;
    int n = 5;
    int arr[5];
}
```

```
for (int i = 0; i < n; i++)
{
    cout << "Enter " << i + 1 << " term : ";
    cin >> arr[i];
    sum += arr[i];
}
```

```
cout << "Sum = " << sum;
cout << endl;
```

```
a[0]=1;
a[1]=2;
a[2]=3;
a[3]=4;
a[4]=5;
```

```
for (int i = 0; i < n; i++)
{
    cout << "Term " << i + 1 << " = " << arr[i] << endl;
}
```

```
j=0;
```

Output:

Pranay 1742
Type how many terms do you want to
calculate. Pranay 5 terms?

0
1
2
3
4

1
2
3
4
5

Sum = 15

Term 1 = 1
Term 2 = 2
Term 3 = 3
Term 4 = 4
Term 5 = 5

Final Output

Program Code:

```
int a[3][3], m, col, i, j;  
char ch;  
printf("Enter m: ");  
scanf("%d", &m);  
printf("Enter no. of rows -> ");  
scanf("%d", &row);  
printf("Enter no. of columns -> ");  
scanf("%d", &col);  
for (i = 0; i < row; i++)  
{  
    for (j = 0; j < col; j++)  
    {  
        printf("Enter the a[%d][%d] element: ", i, j);  
        scanf("%d", &a[i][j]);  
    }  
}
```

printf("The displayed matrix is : \n");
for (i = 0; i < row; i++)

```
{  
    for (j = 0; j < col; j++)
```

* Write a program to display matrix using multidimensional array.

* Algorithm:

Step 1: Take a multidimensional array of your choice of size of data type.

Step 2: Initialize 4 more variables named, i, j, m, n.

Step 3: Take input from user of the number of rows and columns and store it in 'm' and 'n' respectively.

Step 4: Initialize a nested for loop to accept the elements of array from user.

Step 5: Use another nested for loop to display the matrix in the user.

above code contains:
f (prints "A" at 1,000[0][0],
1 prints "B" at 1,000[1][0],
2 prints "C" at 1,000[2][0],
3 prints "D" at 1,000[3][0],
4 prints "E" at 1,000[4][0],
5 prints "F" at 1,000[5][0],
6 prints "G" at 1,000[6][0],
7 prints "H" at 1,000[7][0],
8 prints "I" at 1,000[8][0].

+ Output 47
Process 1743
Number of rows → 2
Number of columns → 2
Enter the a[0][0] element: 7
Enter the a[0][1] element: 9
Enter the a[1][0] element: 10
Enter the a[1][1] element: 15
The displayed matrix is:
7 9
10 15
- *Signature*

Practical - 06

- Ans Programs on Fornl.
- [] Write a program to find factorial of a number using recursion function.

Algorithm:

- Step 1: Start
- Step 2: Define a function which will calculate the factorial of given number.
- Step 3: Define main function and assign the number from the user also define another variable of integer datatype.
- Step 4: Call the "func" declared above main function to calculate factorial and print the value.
- Step 5: Now before the body of func which calculate factorial.
- Step 6: Use the if condition statement and calculate the value accordingly.
- Step 7: Return the value to the func.
- Step 8: Stop.

JOURNAL

Subject _____
Date _____
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```
40
* Source code
  factorial();
  calculate();
  int factorial(int n);
  void main()
{
    int n;
    cin >> n;
    cout << factorial(n) << endl;
}
int factorial(int n)
{
    if (n == 1)
        return (1);
    else
    {
        int f;
        f = n * factorial(n - 1);
        return (f);
    }
}
```

```
41
accept
  given a number;
  factorial of 5 is
  120
```



Program to find sum of digits of entered numbers.

Algorithm:

- Step 1: Start
- Step 2: Define a function which will calculate the sum of digits.
- Step 3: Take a number from user which contains atleast two digits.
- Step 4: Call the function defined above main function to calculate sum of digits.
- Step 5: Use while loop and perform the calculation accordingly.
- Step 6: Print the value of sum as calculated.
- Step 7: Stop.

* Source code:

```
#include <iostream>
#include<conio.h>
int sum();
void main()
```

```
{
```

```
    int num;
    clrscr();
    cout << "Enter a number ";
    cin >> num;
    sum();
    getch();
```

```
}
```

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Subject _____
Date: _____
Teacher Name: _____
Roll No.: _____

1. pick number

any 3 digit no.

such as 123

or 100

or 124

or 101

Find the sum of digits is 15. Why?

for example
take a number
1743
Sum of digits is:
16

46

JOURNAL

Name _____	Date _____
Subject _____	Grade No. _____
Subject _____	Teacher No. _____
_____	Final Mark _____

Practical No. 2

- a) Write program to understand basic data type & I/O.
- b) Some Code:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int roll_no;
    char name[10];
    char Grade;
    int mobile_no;
    float percentage;
    char address;
    clrscr();
    printf("Enter your name\n");
    scanf("%s", Name);
    printf("Enter your roll_no\n");
    scanf("%d", &roll_no);
    printf("Enter your mobile number\n");
    scanf("%d", &mobile_no);
    printf("Enter your percentage\n");
    scanf("%f", &percentage);
    printf("Enter your grade\n");
    scanf("%c", &Grade);
    printf("Your name is %s\n", Name);
    printf("Your roll no is %d\n", roll_no);
    printf("Your mobile no is %d\n", mobile_no);
    printf("Your percentage is %f\n", percentage);
    printf("Your grade is %c\n", Grade);
    printf("Your name is %s\n", Name);
```

** FILE DATATYPE and more

- * Enter your name
Aditya Pathak.
- * Enter your roll no
1742
- * Enter your mobile No.
9182127810.
- * Enter your percentage.
88%
- * Enter your grade
B
- * Your name is : Pranay Ravini
- * Your roll no is : 3421
- * Your mobile no is : 7374798223
- * Your percentage is : 88%
- * Your grade is : 9.

COMPUTER JOURNAL

Name : PRANAY L. RAVINI	Date :
Class : 10	Page No. :
Subject : COMPUTER	Roll No. :
Section : A	Mobile No. :

COMPUTER JOURNAL

area of triangle

- (a) Enter the base
- b) Enter the height
- 10
Area of triangle is 25

College
STER JO-

21

printf("Your roll no is %d \n", Roll_no);
printf("Your percentage is %d (%", Percentage);
printf("Your marks are %d (%", Marks);
Grade in %d (%", Grade);
printf());

- + Program B.
- Below code.

#include <conio.h>
void main()

```
int base, height, area;  
printf("Enter the base \n");  
scanf("%d", &base);  
printf("Enter the height \n");  
scanf("%d", &height);  
area=0.5*base*height;  
printf("Area of triangle is %d \n", area);  
getch();
```

S. Sathya

Name:	JAYANTHI	ENCL:	
Date:		Ref No:	
Batch No:			
Subject:			

COMPUTER JOURNAL

Practical - 2

- a) Aim: Write a C program which will use the use of variable different types of operators.

b) Arithmetic Operators:

Source Code:
checke condition
#include <conio.h>
void main()

```

int num1,num2,add,Sub, mult, div;
clrscr();
printf("Enter 1st number : ");
scanf("%d", &num1);
printf("Enter 2nd number : ");
scanf("%d", &num2);
add = num1 + num2;
printf("Addition of 2 numbers = %d\n", add);
subnum1 = num1;
Sub = num1 - num2;
printf("Subtraction of 2 numbers = %d\n", Sub);
mult = num1 * num2;
printf("Multiplication = %d\n", mult);
div = num1 / num2;
printf("Division of 2 numbers = %f\n", div);
getch();

```

Output

Enter 1st number : 8
Enter 2nd number : 6
~~Addition of 2 numbers 14~~
~~Subtraction of 2 numbers -2~~
~~Multiplication = 48~~
Division = 1.33

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logical operation

minimise = &minimise
maximise = &maximise
and or not()

```
int xyz, value1, value2, value3, value4;  
char c;  
clrscr();  
cout << "Enter 1st value : ";  
cin >> value1;  
cout << "Enter 2nd value : ";  
cin >> value2;  
cout << "Enter 3rd value : ";  
cin >> value3;  
cout << "Enter 4th value : ";  
cin >> value4;  
  
value1 = value1 & value2;  
value2 = value1 | value3;  
value3 = value2 ^ value4;  
value4 = ~value3;  
value1 = value1 & value4;  
value2 = ~value4;  
value3 = value1 | value2;  
value4 = getch();
```

Q. output

```
Enter 1st value : 7  
Enter 2nd value : 8  
Enter 3rd value : 2  
Enter 4th value : 0  
Value 1 is : 0  
Value 2 is : 1  
Value 3 is : 1  
Value 4 is : 0  
Value 5 is : 1
```

COMPUTER JOURNAL

Name: SHALY S. D. S. H.

Roll No.: 101

Date: 10/10/18

Batch No.: 1

Subject: Computer

Output: The biggest number is 100.
20

Answer: Quesno?
Answe? (Ans 12)
Quesno? (Ans 12)
Answe? (Ans 12)

Quesno? (Ans 12)
Answe? (Ans 12)
Quesno? (Ans 12)
Answe? (Ans 12)

Output:

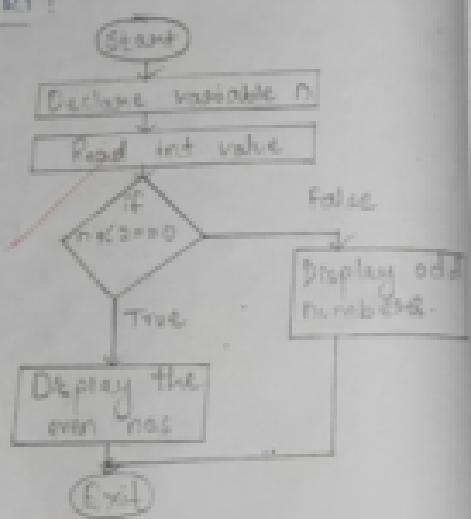
Enter a number = 75

Even number

Enter a number = 53

Odd number.

Flowchart:



Exercise 3

Decision statements

Write a program to find out odd and even numbers

Algorithm:

Step 1 Start

Step 2 Declare a number n from the user.

Step 3 Check if $n \% 2 == 0$ then print even number

Step 4 Exit

Source code:

#include <stdio.h>

int main()

{

int n;

clrscr();

printf("Enter a number : ");

scanf("%d", &n);

if (n % 2 == 0)

printf("Even number : ");

}

COMPUTER JOURNAL

1
int year;
cout << "Enter year: ";
cin >> year;
if ((year % 4 == 0) && (year % 100 != 0))
 cout << "Leap year.";
else if ((year % 400 == 0))
 cout << "Leap year.";
else
 cout << "Not a leap year.";

2
Algorithm:
Step 1: Start
Step 2: [User Input] Read year from the user.
Step 3: If year % 4 == 0 and year % 100 != 0
 or year % 400 == 0 and year % 100 == 0
 print NOT a leap year.
Step 4: End.

Source Code:

```
#include <iostream.h>
#include <conio.h>
void main()
{
    int year;
    clrscr();
    cout << "Enter year: ";
    cin >> year;
    if ((year % 4 == 0) && (year % 100 != 0))
        cout << "Leap year.";
    else if ((year % 400 == 0))
        cout << "Leap year.";
    else
        cout << "Not a leap year.";
```

3
Output :
Enter year: 2013
Not a leap year.
Enter year: 2016
Leap year.

Name	JAYANTI	ROLL NO.	102
Date	10/10/2016	Page No.	1
Subject	Maths	Teacher Name	Ms. Sunita
Subject	Science	Subject Teacher	Mr. Rakesh

COMPUTER JOURNAL

COMPUTER JOURNAL

```
if (year % 400 == 0)
    print("Enter a year")
    year = int(input())
    if (year % 4 == 0):
        if (year % 100 == 0):
            print("Leap year!")
        else:
            print("Not a leap year")
    else:
        print("Not a leap year")
    quit()
```

COMPUTER JOURNAL

Name : <u>MANOJ KUMAR</u>
Reg. No. : <u>101110000000000000</u>
Date : <u>10/10/2018</u>
Batch No. : <u>101</u>
Subject : <u>Computer Application</u>

Q. Write a program to find whether a character is vowel or consonant.

Algorithm:

- Step 1 Start
- Step 2 (use If-else) Read character a from user.
- Step 3 Check if value == 'a' || value == 'e'
value == 'i' || value == 'o' || value == 'u'
value == 'A' || value == 'E' || value == 'I'
value == 'O' || value == 'U'
- Step 4 Exit

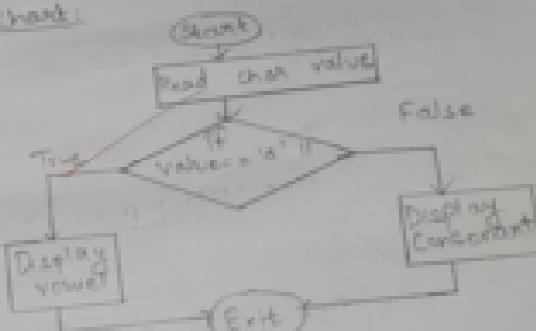
SOURCE CODE:

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

```
char a;
clrscr();
printf ("Enter a alphabet:");
scanf ("%c", &a);
if (a=='a'||a=='e'||a=='i'||a=='o'||a=='u'||a=='A'||a=='E'||a=='I'||a=='O'||a=='U')
```

```
    if (Vowel)
```

script :
 Given a alphabet : O
 Vowel.
 Enter a alphabet : I
 Consonant.



Practical - 4.

a. Above Loop statements

b. While loop-

c. Write a program to print even numbers between 1-50 using while loop

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

```
int i, n = 50;
clrscr();
print("All even numbers from 1-50 are");
for(i=2; i<n; i+=2)
    printf("%d\n", i);
getch();
```

Output:
All even numbers from 1-50 are

2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50

COMPUTER JOURNAL
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THARON

QUESTION 1:

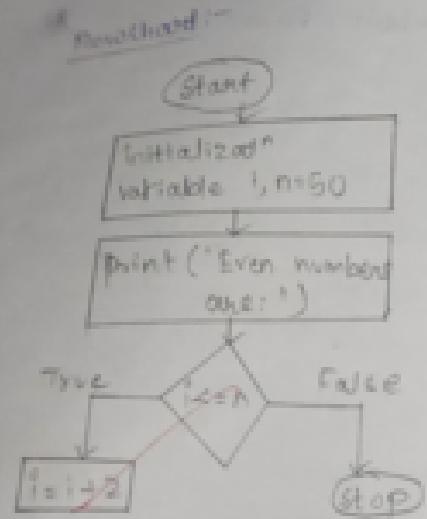
- a) ans: Loop statements.
- b) While loop.
- c) Write a program to print even number between 1-50 using while loop

```
#include < stdio.h >
#include < conio.h >
void main()
{
    int i, n = 50;
    clrscr();
    printf("All even numbers from 1-50 are\n");
    i = 2;
    while (i <= n)
    {
        printf("%d\n", i);
        i = i + 2;
    }
    getch();
}
```

ANSWER:

Even numbers from 1 to 50 are:

2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50



Algorithm:

- Step 1: Start.
- Step 2: Initialize two variables with static variables where $n=50$ & $i=2$.
- Step 3: Use while loop for printing the even numbers upto the range $\{0\}$.
- Step 4: Adding 2 to current even number to get next even number.
- Step 5: Display the output.
- Step 6: Stop.

Q. 6
a) Write a C program to print odd numbers from 1-50 using do while loop.

* SOURCE CODE:

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

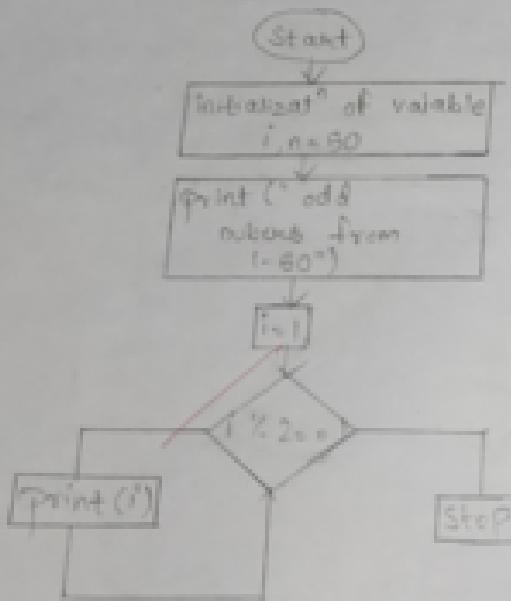
```
{ int i, n=50;
clrscr();
printf ("Odd numbers from 1-50 : \n");
i=1;
do
{
    if (i%2!=0)
    {
        printf ("%d \n", i);
        i++;
    }
} while (i<=n);
getch();
```

Q. 7
a) Output -
odd numbers from 1-50.

```
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45
47
49
```

18

Flowchart :



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Algorithm:

Step 1: Start

Step 2: Initialize two static variables m=50,n=1;

Step 3: Use do while loop for iteration from 1-50.

Step 4: Use if condition statement to check whether given number is even or odd.

Step 5: Increment the value of i by 2.

Step 6: Display the appropriate output.

Step 7: Stop.

a. Write a program to print even numbers from 1 to n using a for loop.

a. C++ code:

```
#include <iostream>
using namespace std;
```

```
int main()
{
    int i, n, sum = 0;
    cout << "Enter the range = ";
    cin >> n;
    for (i = 1; i <= n; i++)
    {
        if (i % 2 == 0)
            sum += i;
    }
}
```

```
cout << "Sum of all even numbers upto the range are : ", sum;
return 0;
```

Ques 1:
Given the range = 10
Sum of all even numbers upto the range
are : 30

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