Assignment-2: -

Note:- You may skip any part of this assignment if you are confident enough

Control Structures:-

a)Simple if-else

Biggest of two numbers

Even or odd numbers

Absolute value of a number

Given character is vowel or not

Leap year or not

b)Nested if-else

Biggest of 3,4 numbers

Quadrant of a point (Q1,Q2,Q3,Q4 etc)

Leap year or not

c)Else if ladder

Biggest of 3,4 numbers

Quadrant of a point (Q1,Q2,Q3,Q4 etc)

Leap year or not

Day of the week

Grade for a student

Choice based arithmetic (1-add,2-sub,3-mul,4-div etc)

Electricity bill or Income tax problem

Roots of a quadratic equation

d) switch

Day of the week

Choice based arithmetic (1-add,2-sub,3-mul,4-div etc)

Given character is vowel or not

e) Loops

Printing no. series

Sum & Avg of n numbers

Multiplication by repetitive addition

Reversing no., palindrome or not, sum of digits in a given number

Evalulation of **a power m**

Factorial of given no.

Evaluation of **n c r** (with only 2 loops)

G.C.D of two no.s(try with while/for and do-while)

G.C.D with repetetive subtraction

L.C.M of two no.s(without finding G.C.D)

Fibonacci series

Given no. is armstrong or not

Given no.is perfect no. or not

Given no.is prime no. or not

Evaluation of series (Note:- you shoudn't calculate x^k every time)

$1+x+x^2//2!+x^3/3!+.....+x^n/n!$

f) Nested loops

Recursive sum of digits in a number

(eg:- 9785 ==> 9+7+8+5 ==> 29 ==> 2+9 ==> 11 ==> 1+1 ==> 2

Printing pascal trianle

List of prime numbers

Generation of number tables, triangles

Few examples are:-

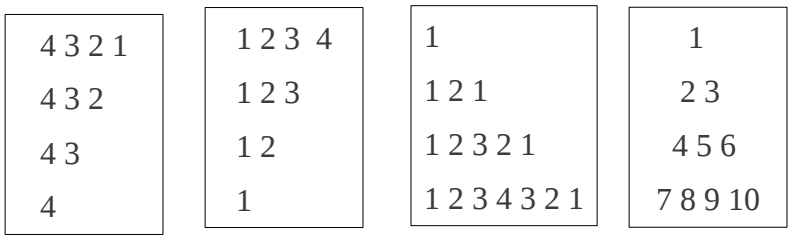
```
1 2 3  4
2 4 6  8
3 6 9  12
4 8 12 16
```

```
1
1 2
1 2 3
1 2 3 4
```

```
1
2 1
3 2 1
4 3 2 1
```

```
a
a b
a b c
a b c d
```

```
4
4 3
4 3 2
4 3 2 1
```



Arrays:-

- Find sum & avg of elements in an array
- Find min & max element in an array
- Reversing an array in memory
- Addition of two arrays
- Addition, Subtraction of long integers
- No. conversions (decimal, binary, octal, hexadecimal)
- Polynomial evaluation where coefficients are stored in an array

  a0xn+a1xn-1+a2xn-3+...+an
- Addition, Subtraction, Multiplication of two matrices
- Transpose of a matrix
- Trace of a matrix
- Determinant for 2x2 , 3x3 matrices
- Solving linear equations

  a1x+b1y=c1; a2x+b2y=c2

  a1x+b1y+c1z=d1; a2x+b2y+c2z=d2; a3x+b3y+c3z=d3
- Generation of identity, null matrices
- Checking whether given matrix is identity or not?
- Checking whether given matrix is null or not?