Assignment 1

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Download all Codes from

https://github.com/srikanth2001/EE4013-C_DS/tree/main/Assingnment-01/codes

Download all latex-tikz codes from

https://github.com/srikanth2001/EE4013-C_DS/blob/main/Assingnment-01/assignment1.tex

1 Problem

(Q 22) Consider the following C fProgram.

```
#include <stdio.h>
int main(){
    int a[4][5] = {{1,2,3,4,5},
                   {6,7,8,9,10},
                   {11,12,13,14,15},
                   {16,17,18,19,20}};
    printf("%d", *(*(a+**a+2) +3));
    return(0);
}
```

The output of the program is?

2 Solution

Answer : The output of the program is-19

Explanation

Let consider that input **a** is a 2D matrix

$$\begin{bmatrix} a_{[0][0]} & a_{[0][1]} & a_{[0][2]} & a_{[0][3]} & a_{[0][4]} \\ a_{[1][0]} & a_{[1][1]} & a_{[1][2]} & a_{[1][3]} & a_{[1][4]} \\ a_{[2][0]} & a_{[2][1]} & a_{[2][2]} & a_{[2][3]} & a_{[2][4]} \\ a_{[3][0]} & a_{[3][1]} & a_{[3][2]} & a_{[3][3]} & a_{[3][4]} \end{bmatrix} = \begin{bmatrix} 1 & 2 & 3 & 4 & 5 \\ 6 & 7 & 8 & 9 & 10 \\ 11 & 12 & 13 & 14 & 15 \\ 16 & 17 & 18 & 19 & 20 \end{bmatrix}$$

From the above matrix **a represents the index of the element in $a_{[0][0]}$ element i.e 1,

$$*(*(a + 1 + 2) + 3)) \tag{2.0.1}$$

in above equation (*(a+3) +3) this represents the index of $a_{[3][3]}$in the matrix a. Hence the Output will be $a_{[3][3]}$ Element of the matrix a i.e 19

```
 // C Code for printing output in form of array
#include <stdio.h>
int main(){
    int a[4][5] = { {1,2,3,4,5},
                    {6,7,8,9,10},
                    {11,12,13,14,15},
                    {16,17,18,19,20}};

    printf("%d", a[3][3]);
    return(0);
}
```