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Assignment - VIII

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Assignment : Array 2D

if we are having so many array containing similar type of information then it will be very difficult to maintain such variable. In order to solve this issue we can make two dimension array.

int age [6] [100]; // this age variable is a two dimension array, it is having six group of variable, and each group contains 100 variable.
Since it is having two dimensions, so we need to two variable to access element into array.

```
for (i=0;i<6; i++)
{
        for (j=0;j<6; j++)
        {
                scanf("%d",&age[i][j]);
        }
}

for (i=0;i<6; i++)
{
        for (j=0;j<6; j++)
        {
                printf("%d",age[i][j]);
        }
}
```

1. 2D array:

An array of arrays is known as 2D array. The two dimensional (2D) array in C programming is also known as matrix. A matrix can be represented as a table of rows and columns. Before we discuss more about two Dimensional array let's have a look at the following C program.

    a.   Write a program to collect 5 student 3 sub each mark through the user and print the result with the user roll no.
    b.   Write a C program to add two 3*3 matrices.
    c.   Write a C program to subtract two 3*3 matrices.
    d.   Write a C program to perform Scalar matrix multiplication of 3*3 matrix.
    e.   Write a C program to multiply two 3*3 matrices.
    f.   Write a C program to check whether two 3*3 matrices are equal or not.
    g.   Write a C program to find sum of each row and column of a 3*3 matrix.
    h.   Write a C program to interchange diagonals of a 3*3 matrix.
    i.   Write a program to store 10 mobile number into array and print them with sequence number.
    j.   Write a program to Store 10 name into a 2d array and print them.
    k.   Store 10 student information like name, age, mobile number, address, father name and print then into alphabetical order of student name.
    l.   Write a program to swap two name
    m. Write a program to read 10 names into 2d array and sort them based on first letter of their name an array of name.

2. Theory question need to clear
    a.   What is the practical use of two dimension array?
    b.   How much memory int array[3][5] will reserve?
    c.   How much memory char array[3][10] will reserve?