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Lab 1

Ques: Create a two-dimensional array of size 7x10. Access it row-wise and column-wise.

About Array

An array is a collection of same datatypes stored at contiguous memory locations called by common name. This makes it easier to calculate the position of each element by simply adding an offset to a base value, i.e., the memory location of the first element of the array (generally denoted by the name of the array).

Source Code

```
/* Name: Hitendra Sisodia
Sap Id: 500091910 */
#include<bits/stdc++.h>
using namespace std;
int main()
{
    int a[7][10];
    for(int i=0;i<7;i++){
        for(int j=0;j<10;j++){           //loop for input array
            cin>>a[i][j];
        }
    }
    cout<<"Row Wise"<<endl;
    for(int i=0;i<7;i++){
        for(int j=0;j<10;j++){           //loop for accessing elements row wise
            cout<<a[i][j]<<" ";
        }
    }
    cout<<endl;
    cout<<"Column Wise"<<endl;
    for(int j=0;j<10;j++){
        for(int i=0;i<7;i++){           //loop for accessing elements column wise
            cout<<a[i][j]<<" ";
        }
    }
    return 0;
}
```

Output

```
1 2 3 4 5 6 7 8 9 10
2 3 4 3 6 3 5 7 5 45
1 5 7 3 6 8 4 4 8 45
2 5 7 4 4 6 4 6 7 4
3 6 4 7 7 8 5 8 4 7
2 6 5 8 4 8 5 8 4 8
2 5 7 3 7 9 4 8 4 8
Row Wise
1 2 3 4 5 6 7 8 9 10 2 3 4 3 6 3 5 7 5 45 1 5 7 3 6 8 4 4 8 45 2 5 7 4 4 6 4 6 7 4 3 6 4 7 7 8 5 8 4 7 2 6 5 8 4 8 5 8 4 8 2 5 7 3 7 9 4 8 4 8
Column Wise
1 2 1 2 3 2 2 2 3 5 5 6 6 5 3 4 7 7 4 5 7 4 3 3 4 7 8 3 5 6 6 4 7 4 7 6 3 8 6 8 8 9 7 5 4 4 5 5 4 8 7 4 6 8 8 8 9 5 8 7 4 4 4 10 45 45 4 7 8 8
```