CP Lab-06 Tasks

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Lab 06 Multiple Arrays

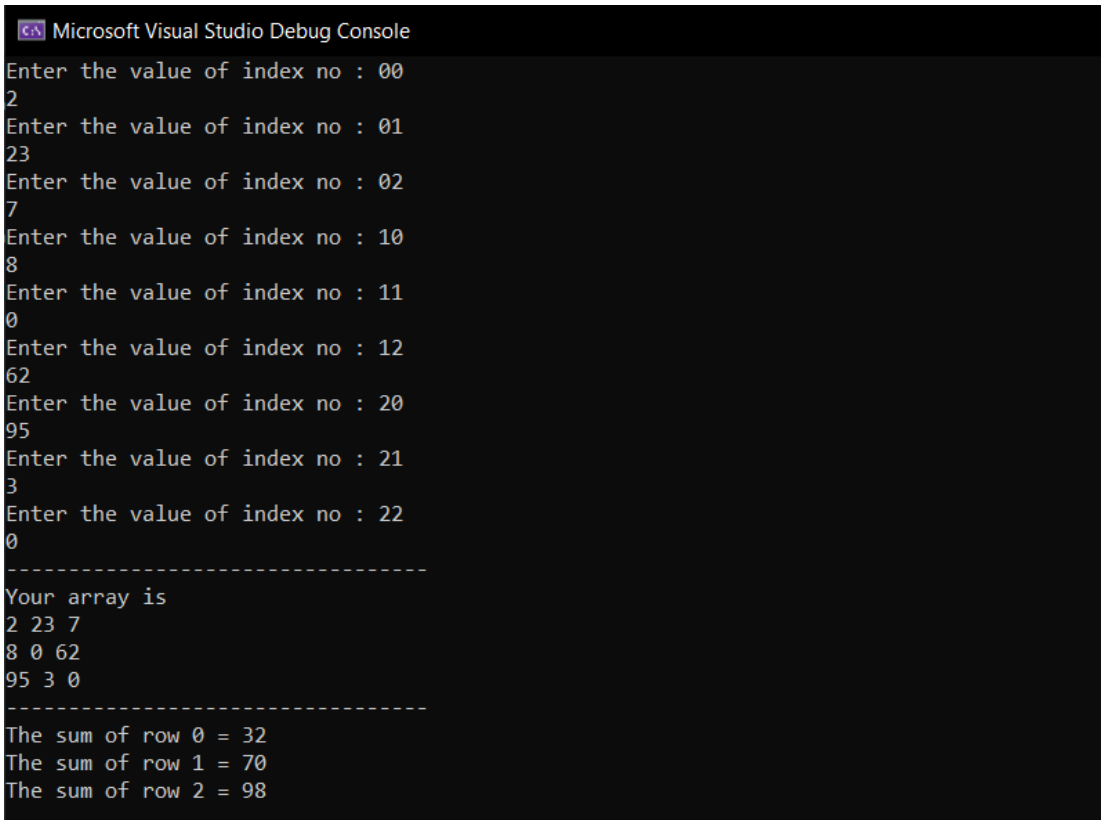
Tasks: 01

Write a program to create a 2D array of size 3x3. The program takes input for each cell in the array and then calculates and displays the sum of each row.

Code:

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

int main() {

int arr[3][3];
int sum = 0;

for (int i = 0; i < 3; i++) {
for (int j = 0; j < 3; j++) {
          cout << "Enter the value of index no : " << i << j<<endl;
cin >> arr[i][j];
}
}

cout << "---------------------------------" << endl;
cout << "Your array is " << endl;
for (int i = 0; i < 3;i++) {
for (int j = 0; j < 3; j++) {
cout << arr[i][j] << " ";
}
cout << endl;
}
cout << "---------------------------------"<<endl;

for (int i = 0; i < 3; i++)
{
for (int j = 0; j < 3; j++)
{
sum = sum + arr[i][j];
}
cout << "The sum of row " << i << " = " << sum << endl;
sum = 0;
}
}
```

Output:



Tasks: 02

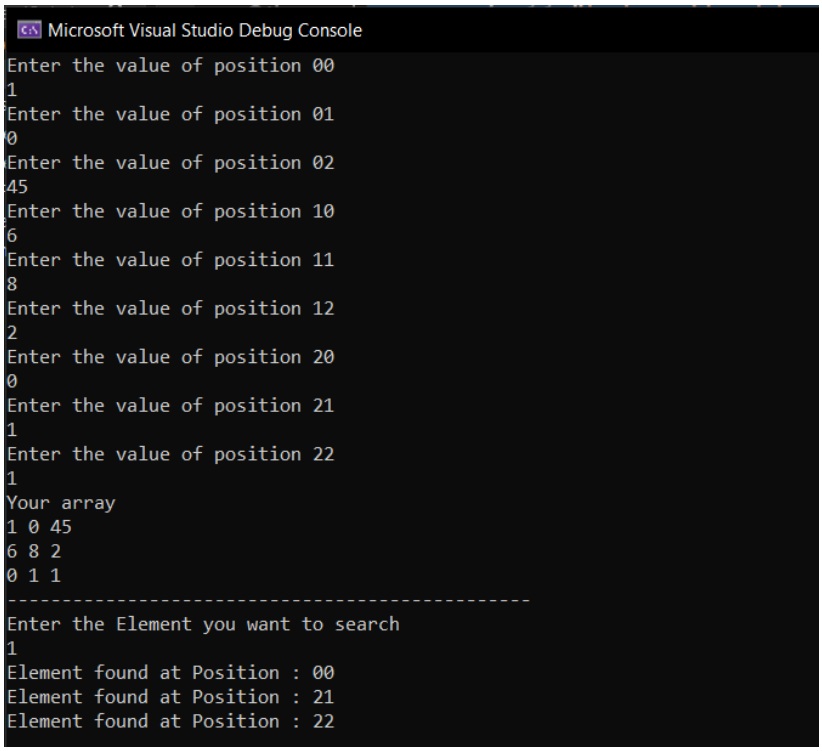
Write a program that takes a 3x3 matrix as input and asks for a number entered and prints out its position in the matrix. It displays not found if the number is not in the matrix.

Code:

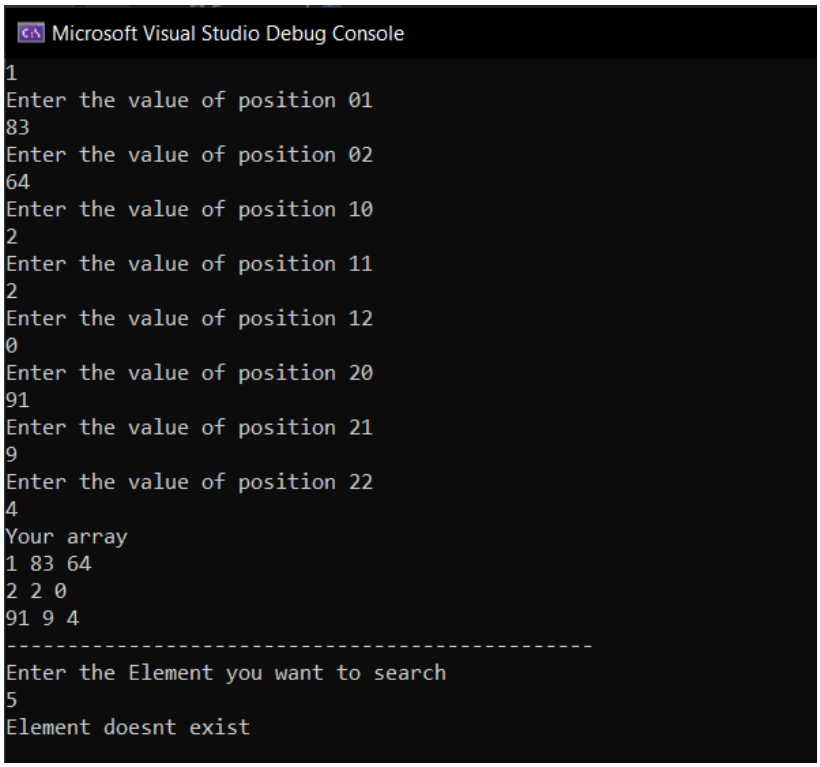
```
#include <iOStream>
using namespace std;

int main() {
int arr[3][3];

for (int i = 0; i < 3; i++) {
for (int j = 0; j < 3; j++) {
cout << "Enter the value of position " << i << j << endl;
cin >> arr[i][j];
}
}
```

```
cout << "Your array " << endl;
for (int i = 0; i < 3; i++) {
for (int j = 0; j < 3; j++) {
cout << arr[i][j] << " ";
}
cout << endl;
}
cout << "-----------------------------------------------" << endl;
int searchElement;
cout << "Enter the Element you want to search" << endl;
cin >> searchElement;

bool flag = false;
for (int i = 0; i < 3; i++) {
for (int j = 0; j < 3; j++) {
if (arr[i][j] == searchElement) {
cout << "Element found at Position : " << i << j<<endl;
flag = true;
}
}
}

if (flag == false) {
cout << "Element doesnt exist" << endl;

}
return 0;
}
```

Output (if the value exists):



Output (if the value doesn't exist):



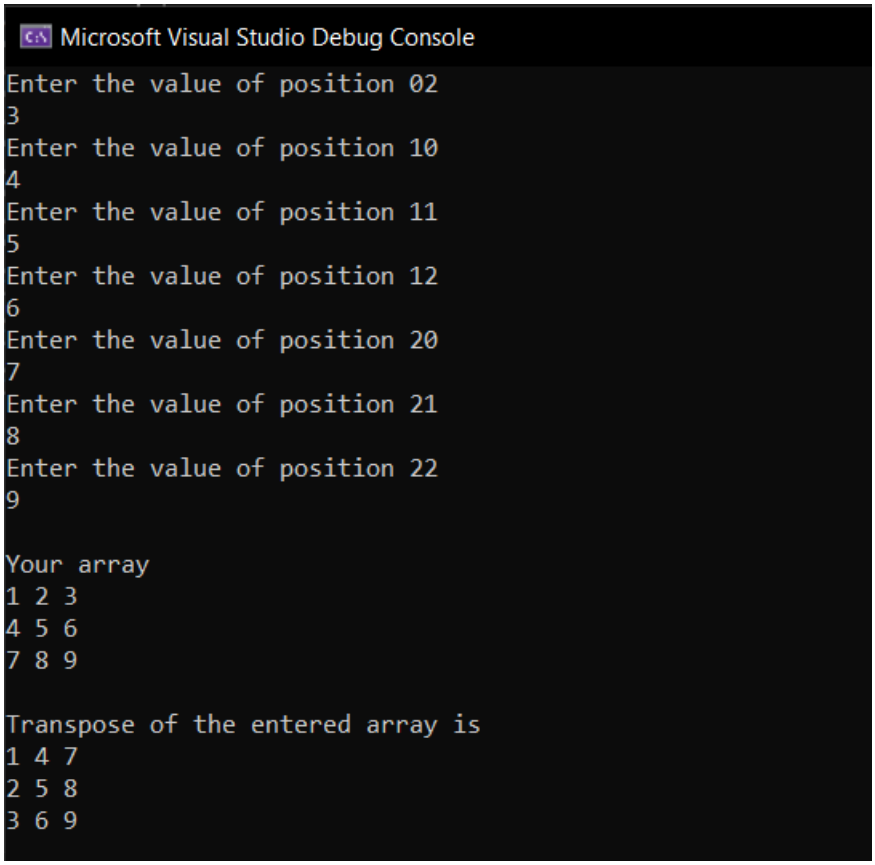
Tasks: 03

Write a program which calculates the transpose of a 3x3 matrix.

Code:

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

int main() {

int arr[3][3];

for (int i = 0; i < 3; i++) {
for (int j = 0; j < 3; j++) {
cout << "Enter the value of position " << i << j << endl;
cin >> arr[i][j];
}
}

cout <<endl<< "Your array " << endl;
for (int i = 0; i < 3; i++) {
for (int j = 0; j < 3; j++) {
cout << arr[i][j] << " ";
}
cout << endl;
}

cout << endl << "Transpose of the entered array is " << endl;
for (int i = 0; i < 3; i++) {
for (int j = 0; j < 3; j++) {
cout << arr[j][i]<<" ";
}
cout << endl;
}
return 0;
}
```

Output:


Microsoft Visual Studio Debug Console
Enter the value of position 02
3
Enter the value of position 10
4
Enter the value of position 11
5
Enter the value of position 12
6
Enter the value of position 20
7
Enter the value of position 21
8
Enter the value of position 22
9
Your array
1 2 3
4 5 6
7 8 9
Transpose of the entered array is
1 4 7
2 5 8
3 6 9