

```
//39 sum of main diagonal
/**
 * C program to find sum of main diagonal elements of a matrix
 */

#include <stdio.h>

#define SIZE 3 // Matrix size

int main()
{
    int A[SIZE][SIZE];
    int row, col, sum = 0;

    /* Input elements in matrix from user */
    printf("Enter elements in matrix of size %dx%d: \n", SIZE, SIZE);
    for(row=0; row<SIZE; row++)
    {
        for(col=0; col<SIZE; col++)
        {
            scanf("%d", &A[row][col]);
        }
    }

    /* Find sum of main diagonal elements */
    for(row=0; row<SIZE; row++)
    {
        sum = sum + A[row][row];
    }

    printf("\nSum of main diagonal elements = %d", sum);

    return 0;
}
```

Output

Enter elements in matrix of size 3x3:

1 2 3

4 5 6

7 8 9

Sum of main diagonal elements = 15