

Experiment 3: 3D Matrix Add

Code:

```
#include <stdio.h>

int main() {
    int a[3][3][3] = {
        {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}},
        {{10, 11, 12}, {13, 14, 15}, {16, 17, 18}},
        {{19, 20, 21}, {22, 23, 24}, {25, 26, 27}}
    };

    int b[3][3][3] = {
        {{1, 1, 1}, {2, 2, 2}, {3, 3, 3}},
        {{4, 4, 4}, {5, 5, 5}, {6, 6, 6}},
        {{7, 7, 7}, {8, 8, 8}, {9, 9, 9}}
    };

    int sum[3][3][3];

    int i, j, k;
    for (i = 0; i < 3; i++) {
        for (j = 0; j < 3; j++) {
            for (k = 0; k < 3; k++) {
                sum[i][j][k] = a[i][j][k] + b[i][j][k];
            }
        }
    }

    printf("Result of 3D Array Addition:\n");
    for (i = 0; i < 3; i++) {
        printf("\nLayer %d:\n", i);
        for (j = 0; j < 3; j++) {
            for (k = 0; k < 3; k++) {
                printf("%d\t", sum[i][j][k]);
            }
        }
    }
}
```

```
        printf("\n");  
    }  
}  
return 0;  
}
```

Output:

Result of 3D Array Addition:

Layer 0:

2	3	4
6	7	8
10	11	12

Layer 1:

14	15	16
18	19	20
22	23	24

Layer 2:

26	27	28
30	31	32
34	35	36

=== Code Execution Successful ===