Code

```
#include <stdio.h>
int main() {
    int i, j, k, r, c;
    printf("Enter number of rows and columns: ");
    scanf("%d %d", &r, &c);
    int a[r][c], b[r][c], sum[r][c], diff[r][c], prod[r][c];
    printf("Enter elements of first matrix:\n");
    for(i = 0; i < r; i++)
        for(j = 0; j < c; j++)
            scanf("%d", &a[i][j]);
    printf("Enter elements of second matrix:\n");
    for(i = 0; i < r; i++)
        for(j = 0; j < c; j++)
            scanf("%d", &b[i][j]);
    for(i = 0; i < r; i++)
        for(j = 0; j < c; j++)
            sum[i][j] = a[i][j] + b[i][j];
    for(i = 0; i < r; i++)
        for(j = 0; j < c; j++)
            diff[i][j] = a[i][j] - b[i][j];
    for(i = 0; i < r; i++) {
        for(j = 0; j < c; j++) {
            prod[i][j] = 0;
            for(k = 0; k < c; k++)
                prod[i][j] += a[i][k] * b[k][j];
        }
    }
    printf("\nMatrix A:\n");
    for(i = 0; i < r; i++) {
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    for(j = 0; j < c; j++)
        printf("%d ", a[i][j]);
    printf("\n");
}
printf("\nMatrix B:\n");
for(i = 0; i < r; i++) {
    for(j = 0; j < c; j++)
        printf("%d ", b[i][j]);
    printf("\n");
}
printf("\nAddition of matrices:\n");
for(i = 0; i < r; i++) {
    for(j = 0; j < c; j++)
        printf("%d ", sum[i][j]);
    printf("\n");
}
printf("\nSubtraction of matrices:\n");
for(i = 0; i < r; i++) {
    for(j = 0; j < c; j++)
        printf("%d ", diff[i][j]);
    printf("\n");
}
printf("\nMultiplication of matrices:\n");
for(i = 0; i < r; i++) {
    for(j = 0; j < c; j++)
        printf("%d ", prod[i][j]);
    printf("\n");
}
printf("\nTraversal of first matrix (row-wise):\n");
for(i = 0; i < r; i++)
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        for(j = 0; j < c; j++)
            printf("%d ", a[i][j]);
    printf("\nTraversal of second matrix (row-wise):\n");
    for(i = 0; i < r; i++)
        for(j = 0; j < c; j++)
            printf("%d ", b[i][j]);
    return 0;
}
```

Output

```
Enter number of rows and columns: 2 2
Enter elements of first matrix:
1 2
3 4
Enter elements of second matrix:
5 6
7 8

Matrix A:
1 2
3 4

Matrix B:
5 6
7 8

Addition of matrices:
6 8
10 12
```

```
Addition of matrices:
6 8
10 12

Subtraction of matrices:
-4 -4
-4 -4

Multiplication of matrices:
19 22
43 50

Traversal of first matrix (row-wise):
1 2 3 4
Traversal of second matrix (row-wise):
5 6 7 8
```