CSA0366-Data Structures For Searching Algorithms

Experiment-1 : Matrix Multiplication

1. Write a C Program For Matrix Multiplication

Code:

#include <stdio.h>

#define ROW1 2

#define COL1 2

#define ROW2 2

#define COL2 2

void multiplyMatrices(int mat1[ROW1][COL1], int mat2[ROW2][COL2], int result[ROW1][COL2]) {

for (int i = 0; i < ROW1; i++) {

for (int j = 0; j < COL2; j++) {

result[i][j] = 0;

for (int k = 0; k < COL1; k++) {

result[i][j] += mat1[i][k] \* mat2[k][j];

}

}

}

}

int main() {

int mat1[ROW1][COL1] = {{1, 2}, {3, 4}};

int mat2[ROW2][COL2] = {{1, 0}, {0, 1}};

int result[ROW1][COL2];

multiplyMatrices(mat1, mat2, result);

printf("Result of Matrix Multiplication:\n");

for (int i = 0; i < ROW1; i++) {

for (int j = 0; j < COL2; j++) {

printf("%d ", result[i][j]);

}

printf("\n");

}

return 0;

}

Input :

{{1, 2}, {3, 4}}

{{1, 0}, {0, 1}}

Output :

Result of Matrix Multiplication:

1 2

3 4

A screenshot of a computer

Description automatically generated