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| **Program No**: **11 Date:20/07/2021**  **MATRIX ADDITION AND**  **MULTIPLICATION**  **AIM :** To write a program to perform Matrix addition and matrix multiplication  **ALGORITHM:**    1.Start  2. Get the row size or column size from the user  3. Check whether the matrices are identical or not. If yes go to step 4  Else print addition not possible  4. Get the first and second matrices from the user  5. Print the first and second matices .  6. Print the added array by adding each corresponding elements of matrices  7.Check whether the column size of first matrix and row size of second  Matrix are equal or not .If yes go to step 8 else print multiplication is not  possible.  8. Multiply and adding row elements of first matrix and column element of  Second matrix and assign as sum (this sum is the elements of  resultant matrix).  9. Print the resultant matrix( multiplied matrix)  10. Stop  **PROGRAM:**   |  | | --- | | **/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***  **Title: Matrix Addition and Multiplication**  **Done by : Deepak M S**  **Date: 20/07/2021**  **Aim: To write a program to perform Matrix addition and matrix multiplication**  **\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**  **#include<stdio.h>**  **int main(){**  **//variable declaration**    **int firstMx[50][50],secondMx[50][50],resMx[50][50];**  **int sum =0;**  **int i,j,k,mxSize,rowM1,rowM2,colM1,colM2;**    **//get the row and column size of the matrices**  **printf("Enter the row or column size of first matrix matrix:");**  **scanf("%d%d",&rowM1,&colM1);**  **printf("Enter the row or column size of second matrix matrix:");**  **scanf("%d%d",&rowM2,&colM2);**    **//addition**  **if(rowM1 == rowM2 && colM1 == colM2){**  **//get the elements of first matrix**  **printf("Enter the elements of first matrix:");**  **for(i=0;i<rowM1;i++){**  **for(j=0;j<colM1;j++){**  **scanf("%d",&firstMx[i][j]);**  **}**  **}**    **//get the elements of second matrix**  **printf("Enter the elements of second matrix:");**  **for(i=0;i<rowM2;i++){**  **for(j=0;j<colM2;j++){**  **scanf("%d",&secondMx[i][j]);**  **}**  **}**    **// Print the first matrix**  **printf("elements of first matrix are:\n");**  **for(i=0;i<rowM1;i++){**  **for(j=0;j<colM2;j++){**  **printf("\t%d",firstMx[i][j]);**  **}**  **printf("\n");**  **}**    **// Print the second matrix**  **printf("elements of second matrix are:\n");**  **for(i=0;i<rowM2;i++){**  **for(j=0;j<colM2;j++){**  **printf("\t%d",firstMx[i][j]);**  **}**  **printf("\n");**  **}**    **//print the added matrix**  **printf("elements of after adding the matrices are:\n");**  **for(i=0;i<rowM1;i++){**  **for(j=0;j<colM1;j++){**  **printf("\t%d",(firstMx[i][j] + secondMx[i][j]));**  **}**  **printf("\n");**  **}**    **}else{**  **printf (" addition not possible!!!!!!");**  **}**    **//multiplication**  **if(colM1 == rowM2){**    **for(i=0;i<rowM1;i++){**  **for(j=0;j<colM2;j++){**    **for(k=0;k<colM1;k++){**  **sum += firstMx[i][k] \* secondMx[k][j];**  **}**  **//store the sum as the corresponding elements of matrix**  **resMx[i][j] = sum;**  **sum =0;**    **}**  **}**    **//print resultant matrix**  **printf("\n resultant matrix(matrix after multiplication) : \n");**  **for(i=0;i<rowM1;i++){**  **for(j=0;j<colM2;j++){**  **printf("\t%d",resMx[i][j]);**  **}**    **printf("\n");**    **}**    **}else{**  **printf (" multiplication not possible!!!!!!");**  **}**      **return 0;**  **}** |   **SAMPLE OUTPUT:**    **RESULT:**  Program run successfully and able to get the correct output |