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// WAP to Matrix Multiplication
#include<stdio.h>
int main(){
    int r1, r2, c1, c2;
    printf("Enter number of rows and columns for 1st Matrix: ");
    scanf("%d,%d",&r1,&c1);
    printf("Enter number of rows and columns for 2nd Matrix: ");
    scanf("%d,%d",&r2,&c2);
    if(c1==r2){
        int mat1[r1][c1];
        int mat2[r2][c2];
        int mmat[r1][c2];
        printf("For 1st Matrix:\n");
        for(int i=0; i<r1; i++) {
            for(int j=0; j<c1; j++){</pre>
                printf("Enter value of row%d and column%d: ",i+1,j+1);
                scanf("%d", &mat1[i][j]);
        }
        printf("For 2nd Matrix:\n");
        for (int i=0; i< r2; i++) {
            for(int j=0; j<c2; j++){
                printf("Enter value of row%d and column%d: ",i+1,j+1);
                scanf("%d", &mat2[i][j]);
        }
        printf("1st Matrix:\n");
        for(int i=0; i<r1; i++){
            for (int j=0; j<c1; j++) {
                printf("%d ",mat1[i][j]);
            printf("\n");
        printf("2nd Matrix:\n");
        for (int i=0; i< r2; i++) {
            for (int j=0; j<c2; j++) {
                printf("%d ",mat2[i][j]);
            printf("\n");
        }
        for (int i=0; i<r1; i++) {
            for (int j=0; j < c2; j++){
                mmat[i][j] = 0;
        for (int k=0; k<r1; k++) {
            for (int l=0; 1<c2; 1++) {
                for(int m=0; m<c1; m++) {
                     mmat[k][l] += mat1[k][m]*mat2[m][l];
                 }
            }
        printf("Matrix Multiplication:\n");
        for(int i=0; i<r1; i++) {
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for (int j=0; j<c2; j++) {
               printf("%d ",mmat[i][j]);
           printf("\n");
       }
   }
   else{
       printf("Column of 1st matrix and Row of 2nd Matrix must be
equal.");
   }
   return 0;
// Code for Symmetric Matrix
#include<stdio.h>
int main(){
   int r,c;
   printf("Enter number of rows and column: ");
   scanf("%d,%d",&r,&c);
   int mat[r][c];
   int tmat[c][r];
   for(int i=0; i<r; i++){
       for (int j=0; j<c; j++) {
           printf("Enter value of row%d and column%d: ",i+1,j+1);
           scanf("%d", &mat[i][j]);
   }
   printf("Matrix:\n");
   for(int i=0; i<r; i++) {
       for (int j=0; j<c; j++) {
           printf("%d ", mat[i][j]);
       printf("\n");
   printf("Transpose of the Matrix:\n");
   for(int i=0; i<c; i++){
       for(int j=0; j<r; j++){
           tmat[i][j] = mat[j][i];
           printf("%d ",mat[j][i]);
       printf("\n");
   if(r==c){
       int flag=1;
       for(int i=0; i<r; i++){
           for (int j=0; j<c; j++) {
               if (tmat[i][j]!=mat[i][j]) {
                   flag = 0;
                  break;
               }
           }
       (flag==1)?printf("Symmetric"):printf("Not Symmetric");
   }
   return 0;
// Code for Transpose of a Matrix
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#include<stdio.h>
int main(){
    int r,c;
    printf("Enter number of rows and column: ");
    scanf("%d,%d",&r,&c);
    int mat[r][c];
    int tmat[c][r];
    for(int i=0; i<r; i++){
        for(int j=0; j<c; j++){
            printf("Enter value of row%d and column%d: ",i+1,j+1);
            scanf("%d", &mat[i][j]);
        }
    }
   printf("Matrix:\n");
    for(int i=0; i<r; i++){
        for(int j=0; j<c; j++){</pre>
            printf("%d ",mat[i][j]);
        printf("\n");
    }
    printf("Transpose of the Matrix:\n");
    for(int i=0; i<c; i++){
        for(int j=0; j<r; j++){
            tmat[i][j] = mat[j][i];
            printf("%d ",mat[j][i]);
        printf("\n");
   return 0;
}
```