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//Matrix Operation
#include <stdio.h>
void matrix(int row, int col, int arr[row][col]) {
   printf("Enter the elements of the matrix row wise:\n");
   for(int i = 0; i < row; i++) {
      for (int j = 0; j < col; j++) {
         scanf("%d", &arr[i][j]);
      }
   }
}
void mul(int row1, int col1,
                     int row2, int col2,int arr1[row1][col1], int arr2[row2][col2]) {
   if (col1 != row2) {
      printf("Matrices cannot be multiplied \n");
      return;
   }
   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] += arr1[i][k] * arr2[k][j];
         }
         printf("%d ", result[i][j]);
      }
      printf("\n");
```

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    }
}
void fact(int n){
    int fact=1;
    for(int i=1;i<=n;i++)
        fact*=i;
    printf("The factorial of %d is %d",n,fact);
}
int main() {
    int row1, col1, row2, col2;
    printf("Enter the dimensions of the first matrix (row col): ");
    scanf("%d %d", &row1, &col1);
    int arr1[row1][col1];
    matrix(row1, col1, arr1);
    printf("\nEnter the dimensions of the second matrix (row col): ");
    scanf("%d %d", &row2, &col2);
    int arr2[row2][col2];
    matrix(row2, col2, arr2);
    printf("\nResult of matrix multiplication:\n");
    mul(row1, col1,  row2, col2, arr1,arr2);
    int n;
    printf("\nEnter the number : ");
    scanf("%d",&n);
    fact(n);
    return 0;
}
```

I/O:

Enter the dimensions of the first matrix (row col): 2 2

Enter the elements of the matrix row wise:

1 3

3 5

Enter the dimensions of the second matrix (row col): 2 3

Enter the elements of the matrix row wise:

1 3 5

5 3 13

Result of matrix multiplication:

16 12 44

28 24 80

Enter the number : 5

The factorial of 5 is 120