

Assignment 3.1

1. Define an $m \times n$ matrix of zeros and then enters a nested-for loop to fill the locations of the matrix, only if the two indexes differ.

- **The purpose is to create a lower triangular matrix, that is a matrix whose elements below the main diagonal are non-zero, the others are left untouched to their initialized zero value.**
- **When the indexes are equal (if condition in the inner loop, which runs over j , the column index), a break is executed and the innermost loop is interrupted with a direct jump to the instruction following the inner loop, which is a print; then control gets to the outer for condition (over the rows, index i), which is evaluated again.**
- **If the indexes differ, the assignment is performed and the counter is incremented by 1.**
- **At the end, the program prints the counter ctr , which contains the #number of elements that were assigned.**

R file and screenshot attached , user can enter row and column values and it will create a lower triangular matrix.

Break statement executes when indices are same

Counter ctr is incremented and printed at the end