**Siena College’s 32nd Annual** **High School Programming Contest**

**Sponsored by Transfinder**

##### **March 29, 2019**

###### Gold Problem #4:  GRID LOCK or GRID UNLOCKED

Background Information:

A crucial skill taught in American elementary schools is the ability to do a word search. Students learn to find words in a two dimensional grid of letters. Words may hidden in the grid in the horizontal, diagonal, or vertical direction. The words must be in a straight line.

###### Programming Problem:

Input:   On the first input line, positive integers R and C, 1 ≤ R, C ≤ 16 indicating the

 number of rows and columns in the search grid. This will be followed by R strings

 of length C. The strings are uppercase letters that form the R by C grid. These lines

of input are followed by a positive integer N ≤ 20 for the number of words that will be searched for in the grid. Finally, there will be N lines of input, each with a word to search for.

Output:  N lines of output, one for each word the program tries to find in the grid.

 Each output line consists of the searched for word followed by either FOUND or NOT FOUND.

###### Example 1: Input 3 6

######  ESUOMG

######  XDAQOJ

######  BWSDNL

######  4

######  CAT

######  MOUSE

 DOG

 TRANSFINDER

######

######  Output: CAT NOT FOUND

 MOUSE FOUND

 DOG FOUND

 TRANSFINDER NOT FOUND

V1