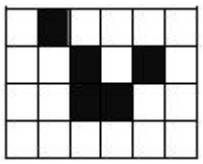
CENG 242
Homework # 6

(Due: May 14th, 2006 Sunday 23:59)

You are asked to find all paths between two rooms of a given maze. A maze is a rectangular building made up of square rooms, some of which are closed. While finding the path, you will begin from the start room and at each step you move to a neighbor (up, down, left or right) room if it is not closed and not visited before, and reach to the finish room. A sample maze can be:



You will write a function **solvemaze** which is in the form:

solvemaze(TheMaze, (ColumnStart, RowStart), (ColumnEnd, RowEnd), ThePath)

TheMaze will be given as list of lists of 0's and 1's. For example, the above maze can be represented as:
[[0,1,0,0,0,0],[0,0,1,0,1,0],[0,0,1,1,0,0],[0,0,0,0,0,0]]

(ColumnStart, RowStart) defines the starting room.
(ColumnEnd, RowEnd) defines the end room.
The upper left corner should be considered as (1,1).

ThePath is a list of characters consisting of `u' (up), `d' (down), `l' (left) and `r' (right) defining the path between start and end rooms. Always this variable will be asked.

Example:

solvemaze([[0,1,0,0,0,0],[0,0,1,0,1,0],[0,0,1,1,0,0],[0,0,0,0,0,0]], (1,1), (4,2), X).

X = [d,r,d,d,r,r,r,r,u,u,u,l,l,d] ? ;
X = [d,r,d,d,r,r,r,u,r,u,u,l,l,d] ? ;
X = [d,r,d,l,d,r,r,r,r,u,u,u,l,l,d] ? ;
X = [d,r,d,l,d,r,r,r,r,u,r,u,u,l,l,d] ? ;
X = [d,d,r,d,r,r,r,r,u,u,u,l,l,d] ? ;
X = [d,d,r,d,r,r,r,u,r,u,u,l,l,d] ? ;
X = [d,d,d,r,r,r,r,r,u,u,u,l,l,d] ? ;
X = [d,d,d,r,r,r,r,u,r,u,u,l,l,d] ? ;
no