Introduction to Artificial Intelligence for Game Programming, 15hp
Gotland University

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Lab 5 – Project

I decided to implement the A* algorithm from lab 2 following the document "A* Pathfinding for beginners" by Patrick Lester.

The path can travel horizontally, vertically and diagonally except when going around walls where "cutting corners" is not allowed. When the path finds a wall it needs to take a 90 degrees turn around it.

I represent a grid of 16 rows by 40 columns, and to make the algorithm a bit more interesting I add a few options that are accessible from within the program:

UP/DOWN – Increases and decreases the percentage of obstacles (between 10% and 50%) in the grid.

R – Resets the position of the starting square, target squares and obstacles.

SPACE BAR – Shows the path that connects the starting square and the target. If the path is not available, it displays a message.

MOUSE LEFT BUTTON – Allows the user to add/remove single tiles in the grid.

Note:

I use Microsoft Visual Studio 2010 Professional and the use of vectors together with the setup for SDL that I followed from http://lazyfoo.net/SDL_tutorials/lesson01/index.php triggered a nasty linker error: `error LNK2019: unresolved external symbol __imp___CrtDbgReportW`

I found a link (http://stackoverflow.com/questions/6003368/unresolved-externals-in-c-when-using-vectors-and-find) that suggested that the problem might be caused by the _DEBUG property in Project Properties -> C/C++ -> Preprocessor -> Preprocessor Definitions
It was recommended to change from _DEBUG to NDEBUG and that solved the problem.