**IT 484/584**

**Dots and Boxes Project Description**

This term project is to create a software system to play the game of Dots and Boxes, using the Unified Process for software development and following the project schedule posted on D2L and discussed in class. All deliverables are to be submitted in hard copy form in a binder, unless otherwise noted.

For purposes of this project, we’ll use the following rules:

* It is played on an NxN grid.
* Players take turns connecting two adjacent dots with a horizontal or vertical line segment.
* Whenever a player draws in the fourth side of a square, thus closing a box, he or she scores one point and takes another turn.
* In any given turn, a player who could close a box is NOT required to do so. (I added this so that there is not a pre-determined solution.)
* Play continues until all possible boxes have been closed.
* The player who scored more points by the end of the game is the winner.

Your group must implement the following versions of the game:

1. Two human opponents who alternate turns in the game. This version does not need to include any “intelligent” component. The selection of line segment placement is strictly up to the human players. This version may be either web-based or local. In either case, it must have a reasonable interface that allows each player to enter the location of his or her play. Your program must check if the play is valid and reject it if it is not. It must recognize when a player has scored a point, and adjust that player’s score accordingly, as well as give that player another turn. It must also display the current score for each player somewhere on the screen.
2. One human opponent versus your (now intelligent) software opponent. The rules for the human player are the same as in the two-person version of the game. Your system, however, must automatically (and intelligently) determine where to place a line segment whenever it is its turn. It must consider both the offensive and defensive advantages of each such play. It must, of course, still check each play for validity, apply the rule of getting another turn if a point is scored, and keep and display accurate scoring.