

# Software Requirement Specification

Project Name: Dots & Boxes

## Team Members:-

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| 1. Gaurav Jain (L) | 140020104 |
| 2. Satyendra Kumar | 140020089 |
| 3. Shrey kumar     | 140050014 |

## Introduction to the Game :

In this project, we have simulated the game “Dots & Boxes”. This game usually played manually with the help of paper & pencil. Dots & Boxes is a paper and pencil puzzle game that has been used to entertain children since ancient times, but nowadays with rapidly growing technology, it is also designed to play on computers like other games. Our implementation of the game has some extra features, but it is more or less the traditional version of Dots & Boxes. We have designed one player game so that it is more interesting and that by coding we gave the playing strategy of a man.

## Algorithm:

The main function contains the various graphic widgets and their callback functions. These widgets allow the user to play in various modes and levels and hence, give it flexibility. The callback functions contain the various implementations of the actions to be taken when their corresponding widget is chosen.

Depending upon the choice of level, an array of dots appears on the screen. On clicking between them, they get joined by lines and the main objective of both the players is to form boxes out of such lines. The player with greater number of boxes is declared the winner.

## **Rules, regulations:**

The game play area of Dots & Boxes consists of an  $n \times n$  grid of “dots”. A player’s turn consists of connecting two horizontally or vertically adjacent dots with a line – diagonal lines aren’t allowed and the dots must be next to each other. A point is scored each time a player completes a square. When a square is created, the turn stays with the player who made the square, otherwise the turns alternate.

It should be noticed that the player must complete the square to get points – even if you provide three of the sides, if your opponent fills in the fourth side, he gets the points. It is compulsory to fill in the square with the initial of the player who won the square (say one fills up the square by A and other should fill up the box by B). Since both players usually avoid putting lines close together until they have to, when it becomes possible to make one square, there is a whole cascade of possible squares. The player who makes the first square in such a cascade can elect to take any or all of the possible squares – there are some strategic schools of thought that say it’s better not to take them all.

Another element of surprise lies in special boxes, which might benefit the player or otherwise. Such boxes may change the course of the game, thus making it more exciting and appealing.

## **User Interface:**

- 1) Game Modes: Two modes – 1 Player or 2 Player
- 2) Level: Three levels are available, viz. 1, 2 and 3.
- 3) Menubar: The menubar contains options to save a game in its current state, quit the game or return to the main menu.
- 4) Help: This provides the user basic instructions to play the game.

**Utility:** Dot game can be considered as a puzzle game, as it includes the use of mind as to when and where to join two dots.

**Division of Work:**

1. SRS and other Documentation: Gaurav, Satyendra and Shrey
2. Generating CPU response: Gaurav, Satyendra
3. Creating graphic widgets: Gaurav, Shrey
4. Assembling the code and creating the main function: Gaurav