

**SPL-1 Project Report, 2019**

**DOTS AND BOXES  
GAME**

**SE 305: Software Project Lab-I**

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## **1. Introduction**

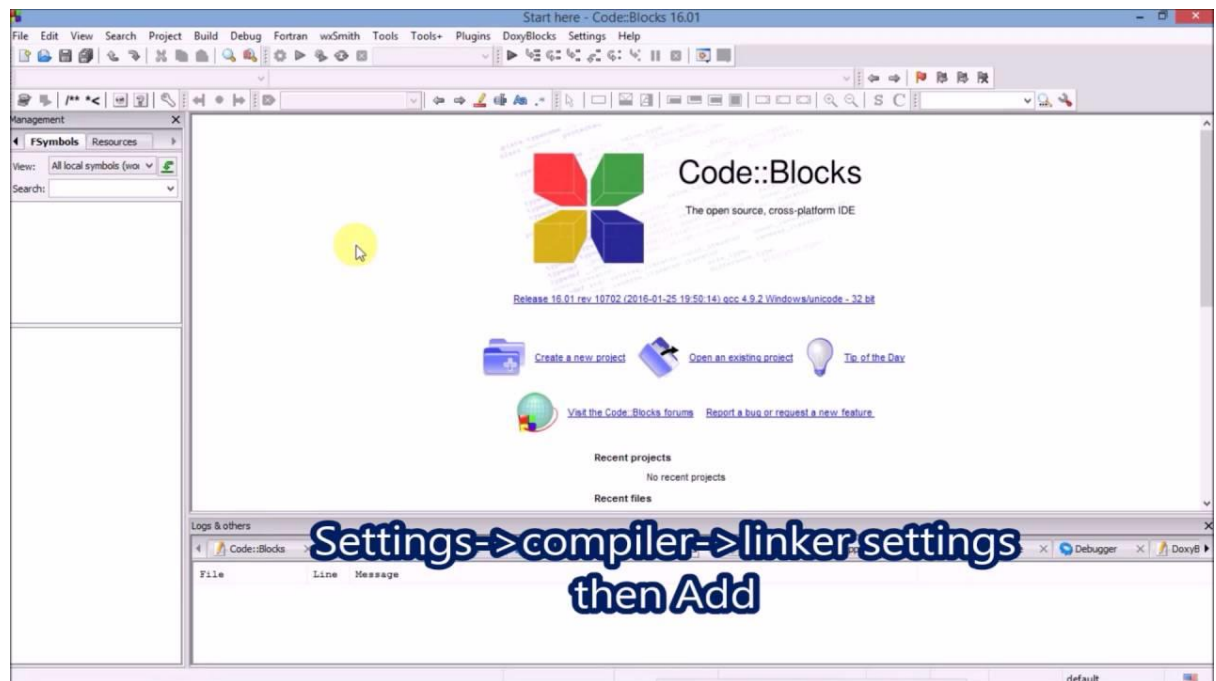
Those games were crushed in our childhood is continued to loss today. It is not possible to prevent collapse with forces. The players then take turns drawing vertical or horizontal lines between two adjacent dots. If a player completes one or two boxes by drawing a line, s/he places his or her initial in the boxes and then must place one other line. His or her turn continues until s/he places a line that does not complete a box. The winner is whoever ends up with the most boxes.. It's only possible to make them digitalized. Dots And Boxes is a game like this. This project aims to deliver a complete show of “Dots and Boxes” game in personal computer environment.

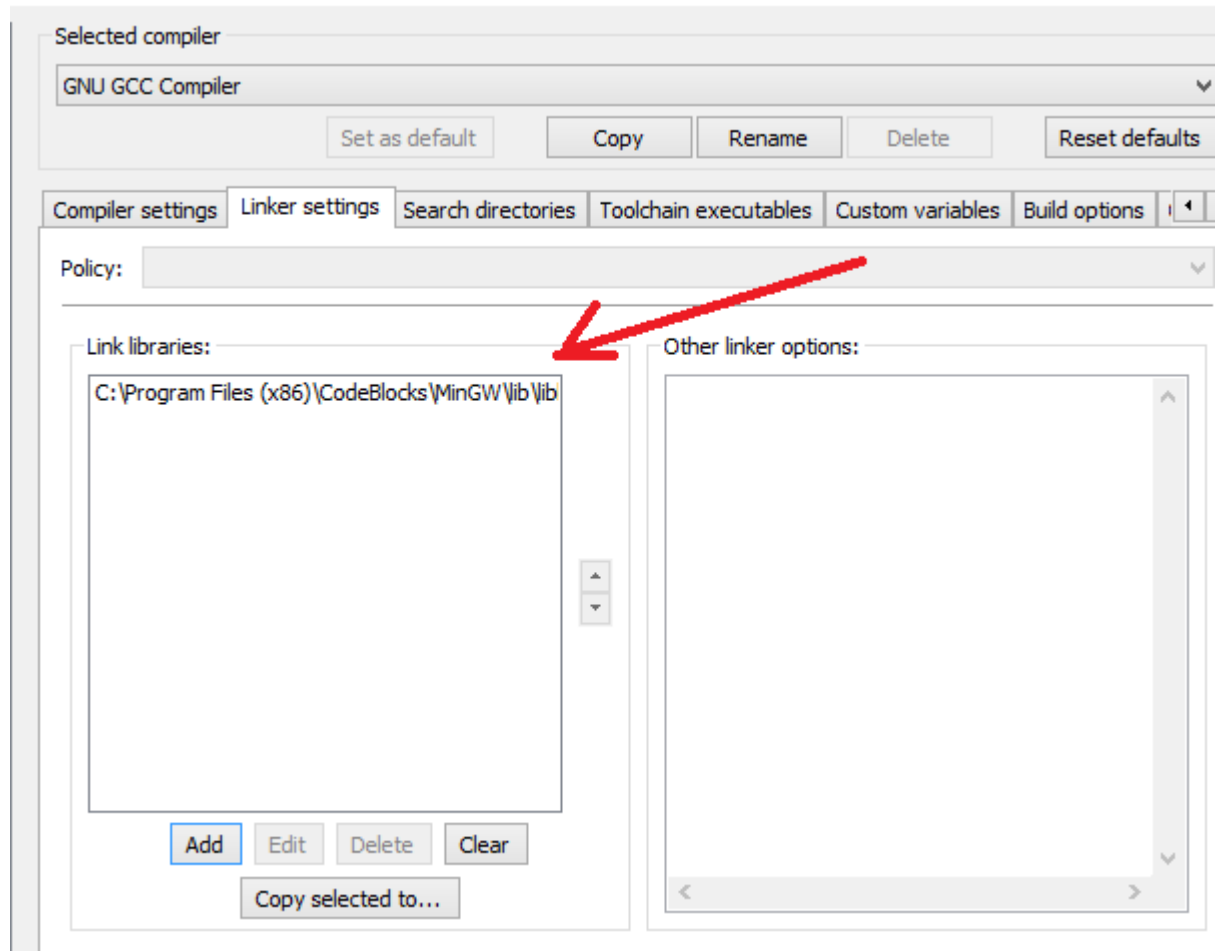
## 1.1 Background Study

### ➤ What is graphics

Graphics is committed to presenting and promoting the work of exceptional talent in Design, Advertising, Photography and Art/Illustration.

### ➤ Setting graphics.h in code blocks





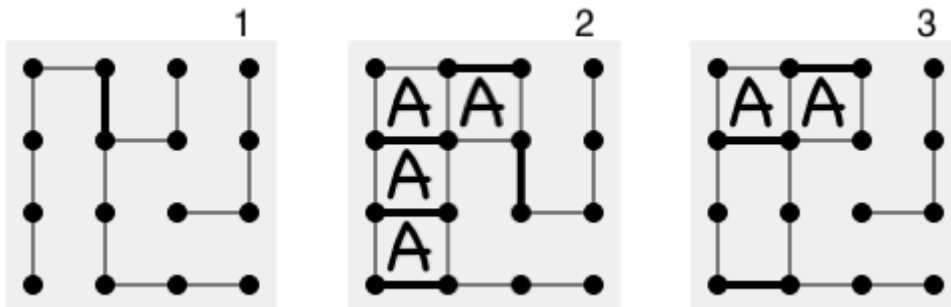
- How to make dots and line.
- Color and size (dot and line).
- Connect two dots.
- Moving concepts.
- Find algorithm
- Create 'X' and 'O'

## 1.2 Challenges

This is my first project. I was very much scared about it. I would not know anything about graphics that was the first time I had to learn on graphics. That's why i had to face many of obstacles in every step. After a long time investigation, i choose graphic.h among opengl and qt.

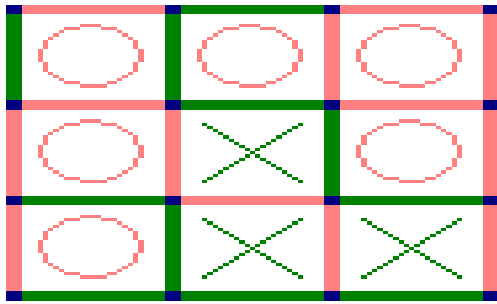
- Cannot find any algorithm to represents the board.
- Understanding the underlying mathematical concepts to draw a line.
- It was so difficult to control turn.
- Code generate very hard.
- Learning to use graphics for making good looking game.

## 2. Project Overview



Faced with position 1, a novice player would create position 2 and lose. An experienced player would create position 3 and win.

For most novice players, the game begins with a phase of more-or-less randomly connecting dots, where the only strategy is to avoid adding the third side to any box. This continues until all the remaining (potential) boxes are joined together into chains – groups of one or more adjacent boxes in which any move gives all the boxes in the chain to the opponent. At this point, players typically take all available boxes, and then open the smallest available chain to their opponent. For example, a novice player faced with a situation like position 1 in the diagram on the right, in which some boxes can be captured, may take all the boxes in the chain, resulting in position 2. But, with their last move, they have to open the next, larger chain, and the novice loses the game.



### 3. User Manual

- Run the game from the code blocks.
- Input width and height dots size.
- Using space for different cursor.
- Use right, left, up, down button for moving cursor.
- Use enter for adjust two dots.

### 4. Conclusion

I have learnt a lot through this project ranging on topics from number theory to using graphics.h. Initially, I had made the assumption that the game will be easily deployed on Personal Computer. Then I faced many difficulties and luckily overcame all difficulties. I have also learnt a lot of the different documentations associated with development. This was quite a challenging but rewarding learning experience and I would like to conclude by thanking my project supervisor, for guiding me along the way.

## References

- <https://www.youtube.com/watch?v=tYyp1F0iAq4>
- <https://www.youtube.com/watch?v=zVYy4RWFATA>
- <https://www.youtube.com/watch?v=GtA0iWNeeEM>
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