



# 1<sup>st</sup> Semester Project

## SOKOBAN GAME in C++

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**Want to know  
more?**

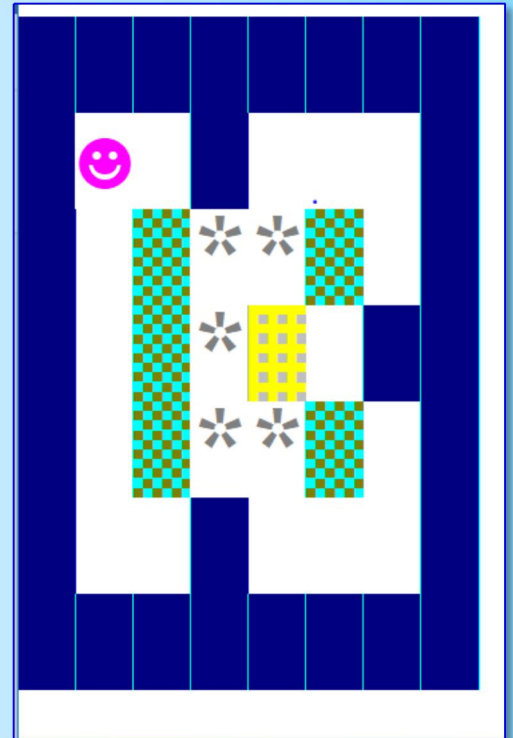
## 01

# Introduction

This is the puzzle game in which we have to think how to set all the boxes on the specified places.

The game is played on a board of squares, where each square is a floor or a wall. Some floor squares contain boxes, and some floor squares are marked as storage locations.

The player is confined to the board and may move horizontally or vertically onto empty squares (never through walls or boxes). The player can move a box by walking up to it and pushing it to the square beyond. Boxes cannot be pulled and cannot be pushed to squares with walls or other boxes. The number of boxes equals the number of storage locations. The puzzle is solved when all boxes are placed at storage locations.

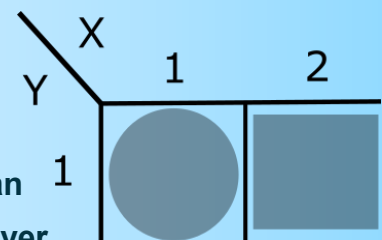


We have to use the approach of divide and conquer to make this game easily for that reason we have to divide each and every part and then think about and then make the game by coding it.

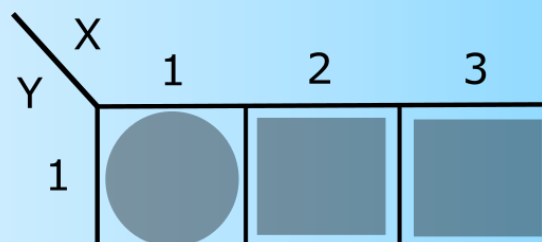
First I worked on the movement of player character on the command line window. By making a game area using nested for loops, one for columns and other for rows. After that, I created simply a coordinate system on which our character can move. That's gaming area follow the 4 quadrant system of the graph means y increases downward and x increases rightward.

Then I focused to create a limitation for a character to move within the prescribed limits. Without limitation, coordinates of our player will increase if it exceeds the coordinates of the game area then I will disappear from the screen. For that, I used the condition i.e. for moving rightward  $if(x < 6)x++;$ , it means it won't increment more to rightward.

After that I want to make a box and that box should be pushed by player. For simplicity, if I want to push the box to rightward then what should be it's condition, let's discuss it. Let player be the circle and square be the box and I want to push box to rightward it means I want to Increase X coordinate of player and the box by 1 means  $x++$ . But to increase X we have to check two conditions so that I can Push the box to right from it's left side. First of all box and player Should be on the same Y coordinate means  $player.y == box.y$  and the other condition should be that the player's X coordinate should be one less than the box's X coordinate which means that  $player.x == box.x - 1$ .



Now another work is for, when there are two consecutive box in the same line which resist another to move. Means if this condition met, Then no coordinate will change. Just simply, one Change that if  $player.x == box1.x - 1 == box2.x - 2$



Then nothing should be happen.

Now I have to create a condition when we place all boxes on specified location then we should win the game. For that I have to create a condition to check each and every box coordinates to match with the coordinates of warehouse.

Now creating a condition to count each move, Simply increment move when our user presses the movement keys but remember if he press the key where the player can't move then it shouldn't count the move. If the condition where player movement resist then simply we have to decrement the move to come because increment + decrement = nothing.

Then Simply everything has been created for complements add menu screen.

Now simply through filing, I add the high score in the file to show.

**For more info and explanation, visit this playlist:**  
**[console game in C++](#)**

## 03

## Working

When we start the game, It displays the menu screen.

```
      ⚙ SOKOBAN GAME ⚙  
  
    > START GAME  
  
      HELP  
  
      ABOUT  
  
High Score : faraz in 63 moves
```

In help menu. (press backspace to move again on menu screen)

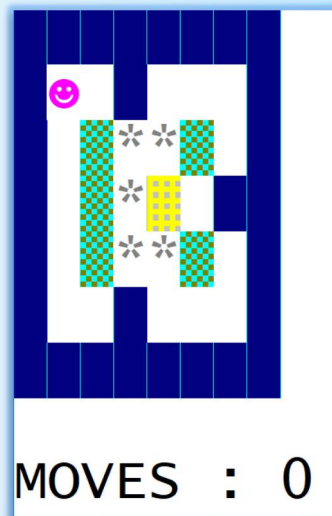
```
***HELP***  
1. Use cursor keys for movement  
   of player.  
2. Place all the boxes in the  
   spaces shown by star * to win  
   the game.  
Press 'r' to reset the box position.  
Player : ☺  
Box : █  
Spaces : *
```

In about section.

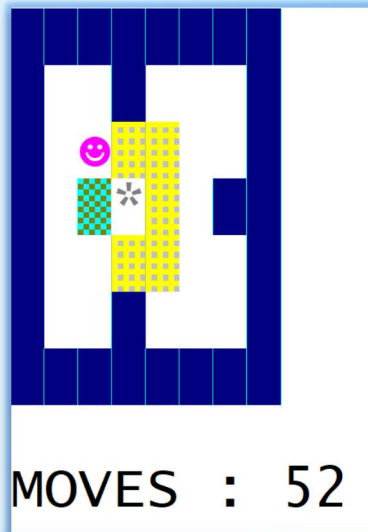
First Year First Semester

PROJECT : SOKOBAN GAME  
MADE BY : 19SW - 05

## Start Game



Playing game (arrow keys for movement and r for reset and q for quit)



## End of the game

YOU WON THE GAME IN 55 moves  
You have made a high score  
Enter your name : New name



If you want to know more about it then visit my youtube channel with the name “technical faraz” listed on second number or simply visit the above link to get the complete info about how to make console game in C++ playlist consist of 10 videos. Anyone with the basics of C++ can watch this videos to clear their logic and improved their problem solving skills by watching it.

This playlist is for the beginners who only knows the syntax’. Give it a try. Watch it to believe it.

Click to watch it: [Console Game using C++](#)

