CSE323 Data structures

Developing Ball Sort game

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Preface

This report demonstrates the technique of **Ball Sort game** through various examples done on the presented software.

The report also covers the different errors that emerges on different occasions and handling them.

The Link to the Executable and code files

https://drive.google.com/file/d/1X_rbPz2iMpc766cjftNx08EwlYz7Pjgf/view?usp=sharing

The Link to the video

https://drive.google.com/file/d/1yRBjgC8W_FiOpUtjf2-t-reDT-32Yo2D/view?usp=sharing

Designing algorithm to solve Ball Sort Puzzle

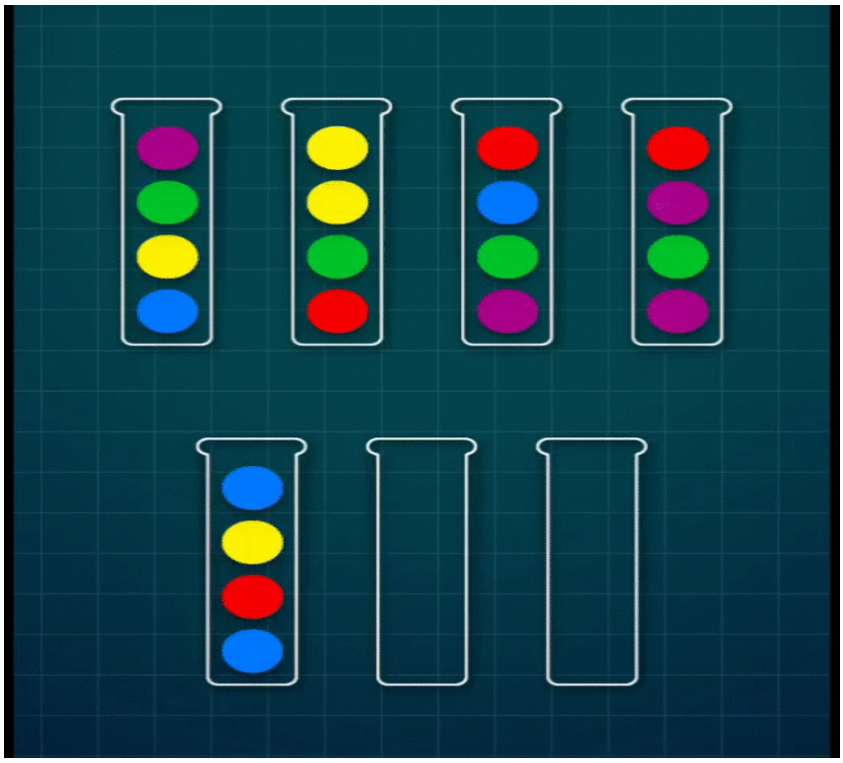
1.1 Algorithm

In Ball Sort Puzzle game, we have p balls of each color and n different colors, for a total of p×n balls, arranged in n stacks. In addition, we have 2 empty stacks. A maximum of p balls can be in any stack at a given time. **The goal of the game is to sort the balls by color in each of the *n* stacks.**

Rules:

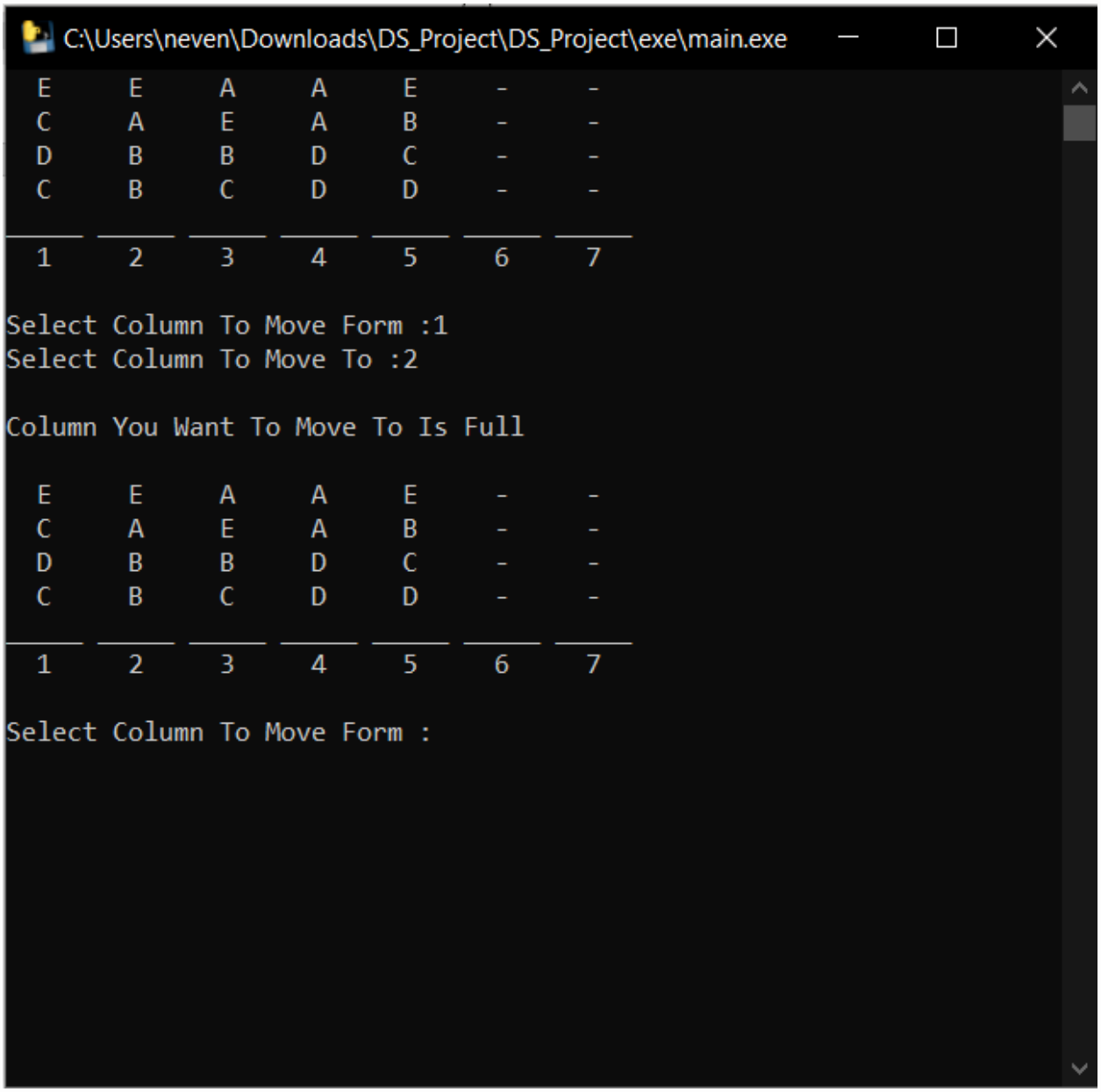
- Only the top ball of each stack can be moved.
- A ball can be moved on top of another ball of the same color
- A ball can be moved in an empty stack.

Refer to the following GIF for an example game play :

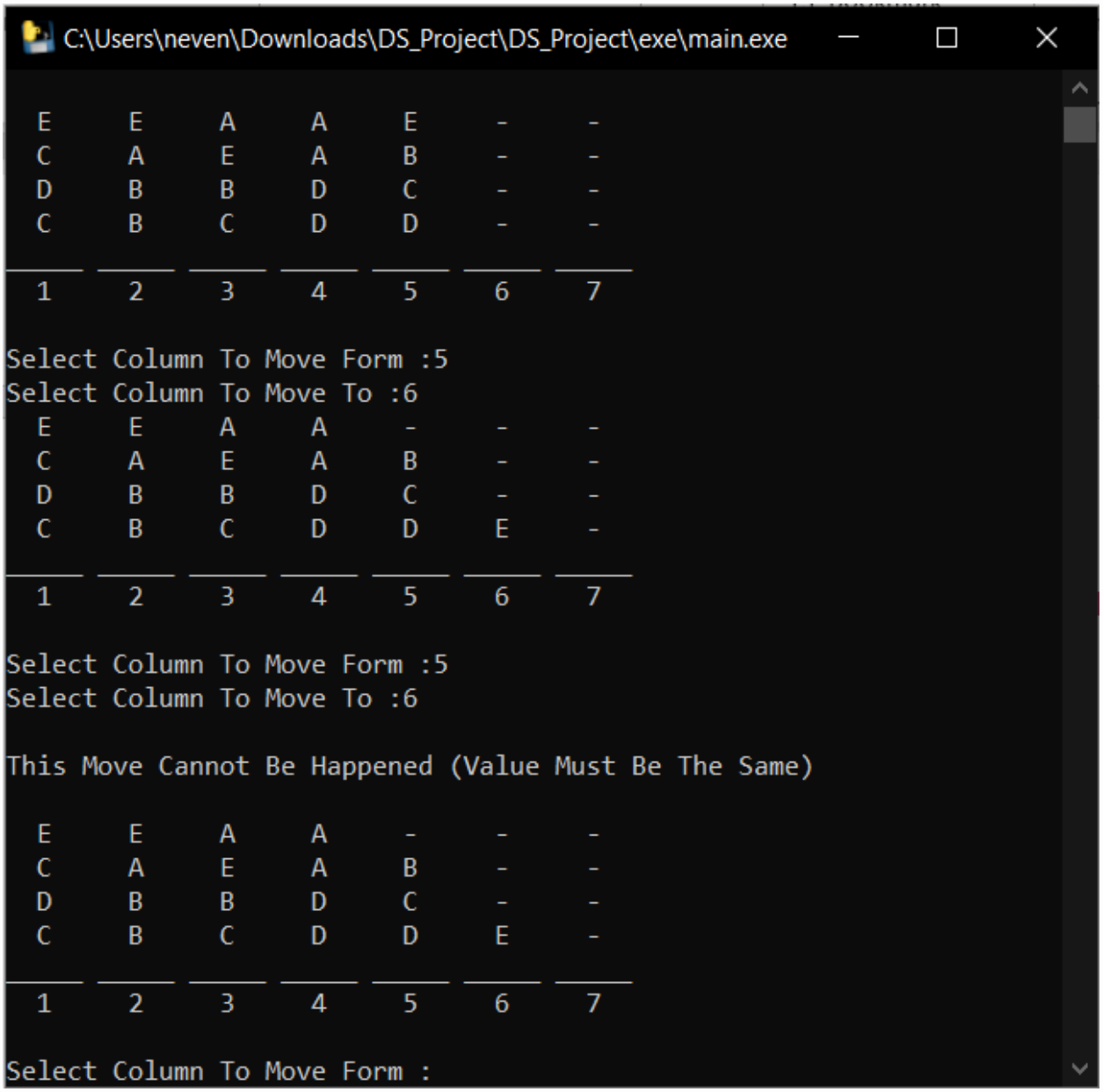


1.2 Handel errors

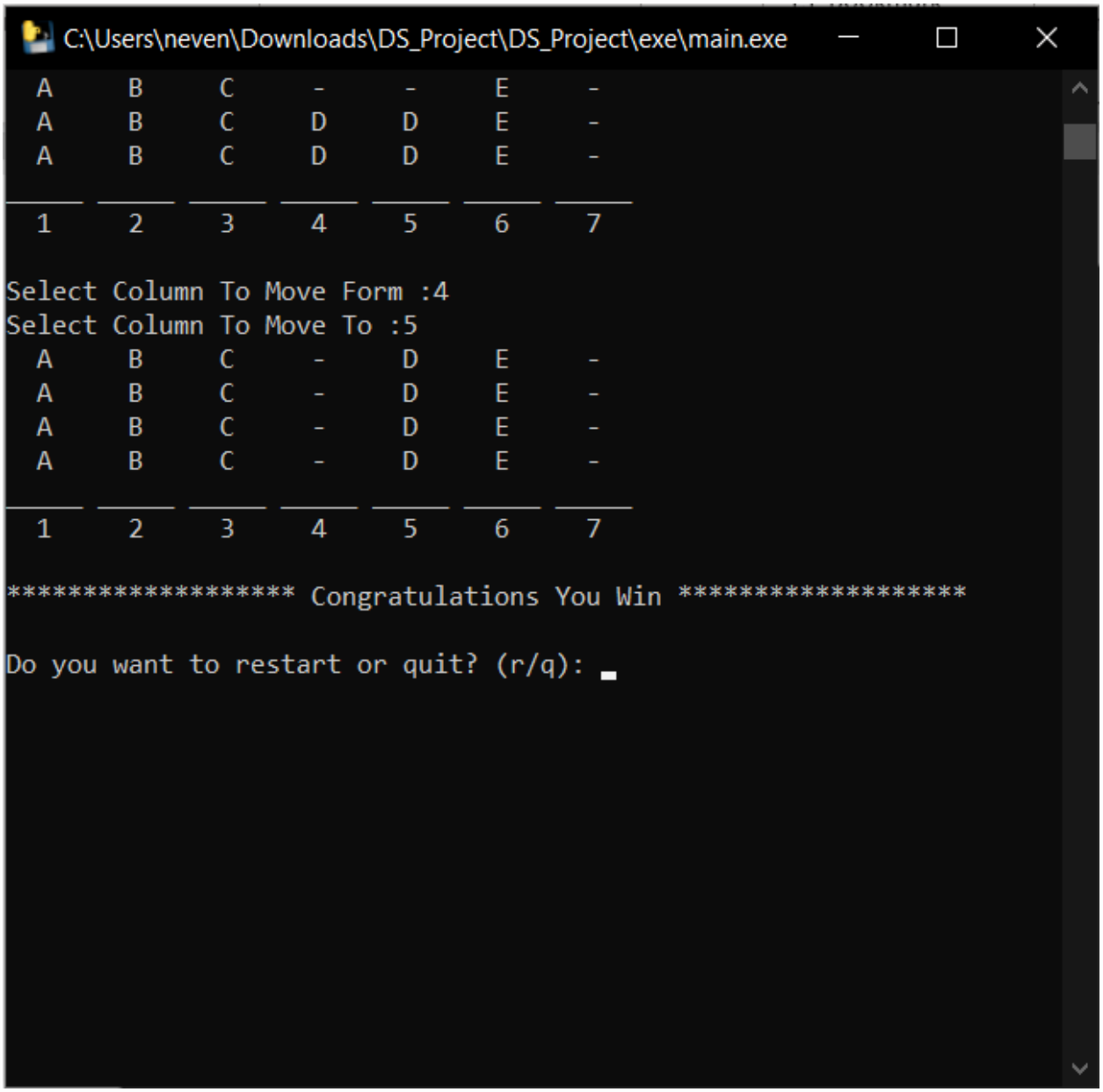
1.2.1 Trying to push into a full stack

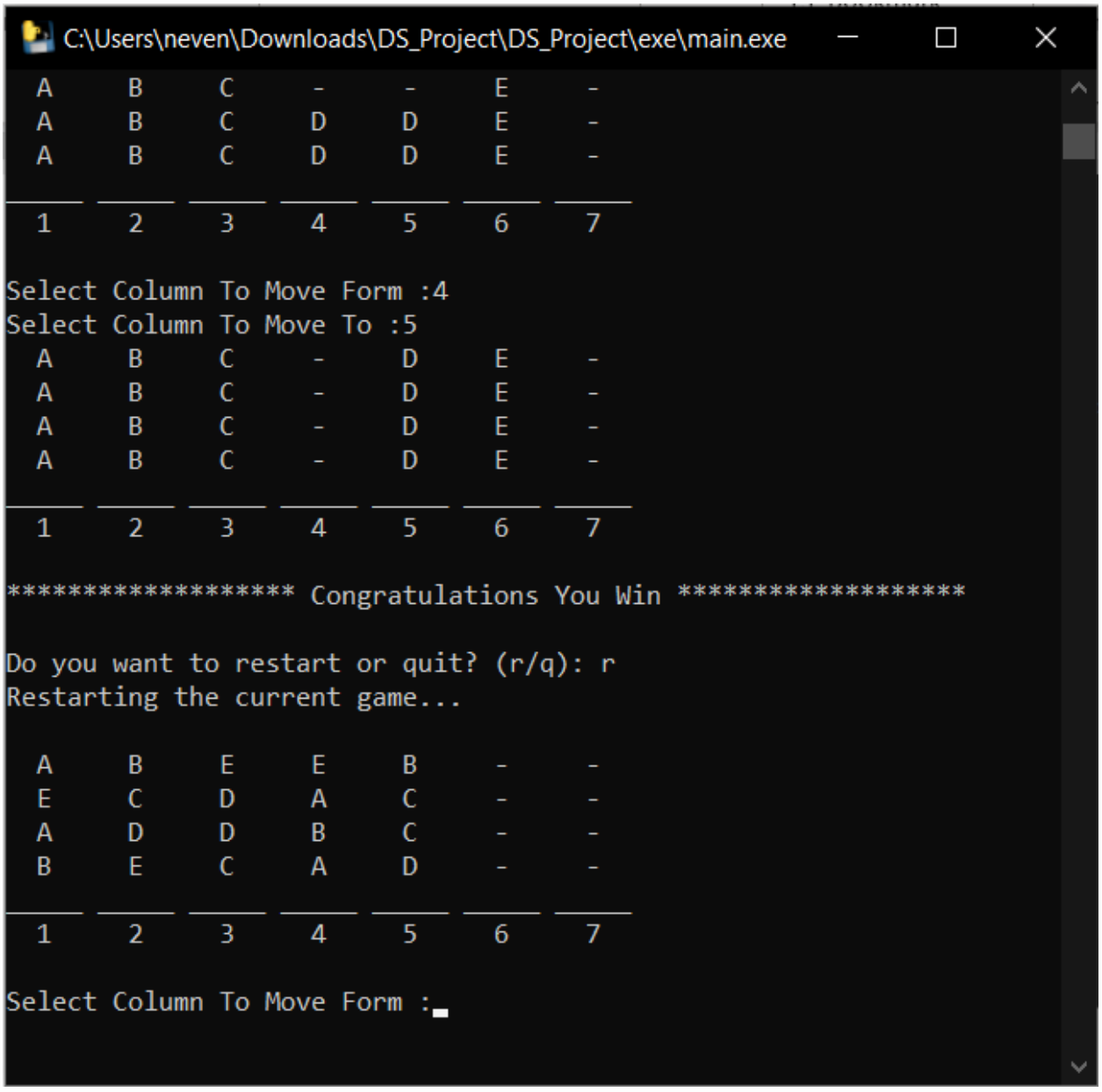


1.2.2 Trying to push into a stack with a different element on the top



1.2.3 After finishing the game




C:\Users\neven\Downloads\DS_Project\DS_Project\exe\main.exe
A B C - - E -
A B C D D E -
A B C D D E -
1 2 3 4 5 6 7
Select Column To Move Form :4
Select Column To Move To :5
A B C - D E -
A B C - D E -
A B C - D E -
A B C - D E -
1 2 3 4 5 6 7
********** Congratulations You Win **********
Do you want to restart or quit? (r/q): r
Restarting the current game...
A B E E B - -
E C D A C - -
A D D B C - -
B E C A D - -
1 2 3 4 5 6 7
Select Column To Move Form :