**Assignment #3**

**110503507林亞誼**

**1.編譯結果**



Figure 1: Compile file

**2.執行結果**

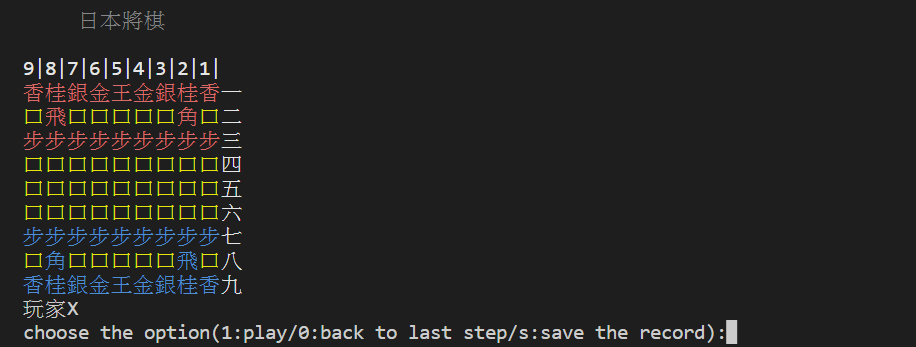


Figure 2: Initial interface of X player



Figure 3: X player inputs 1 to play and move the piece

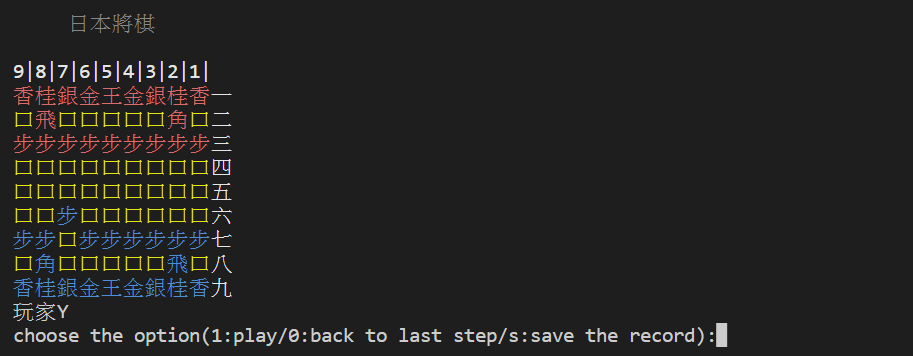


Figure 4: Initial interface of Y player

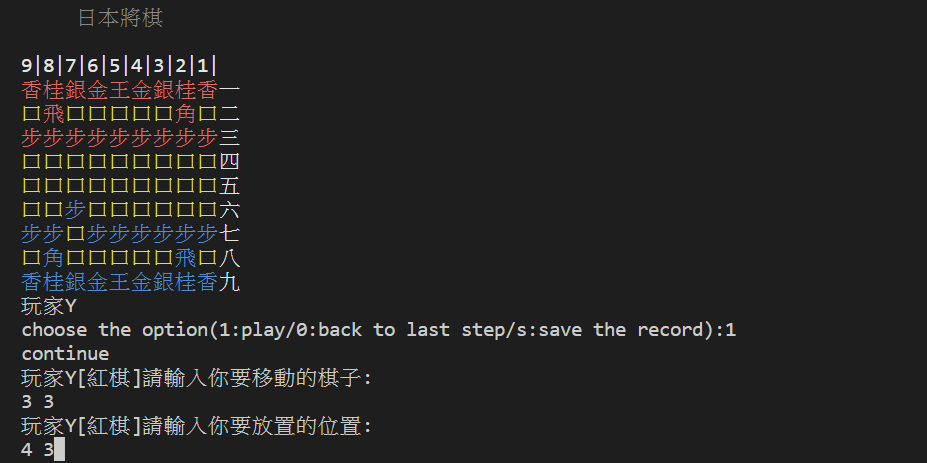


Figure 5: Y player inputs 1 to play and move the piece

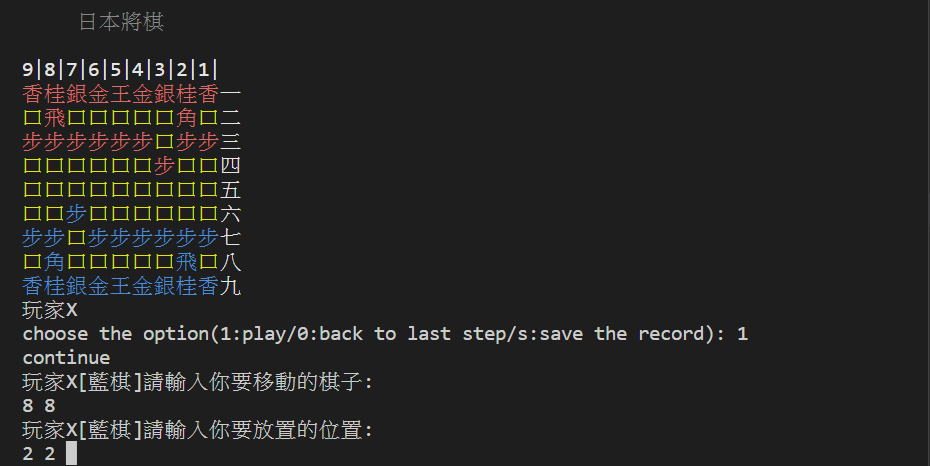
Figure 6: X player captures the piece of Y player



Figure 7: when X player enters wrong value

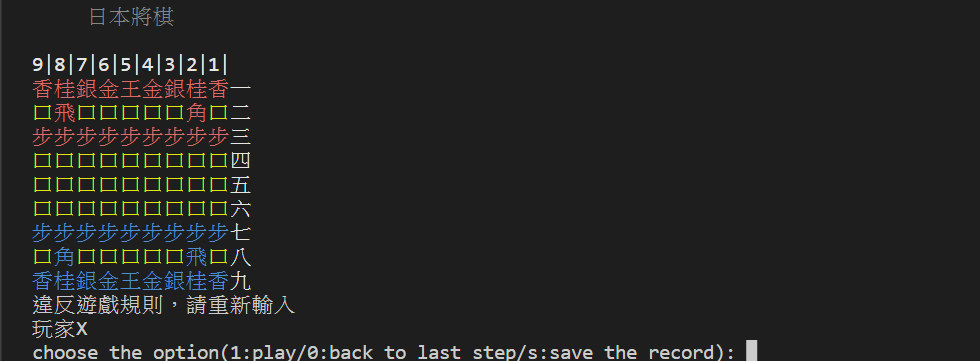


Figure 8: X player should input numbers again

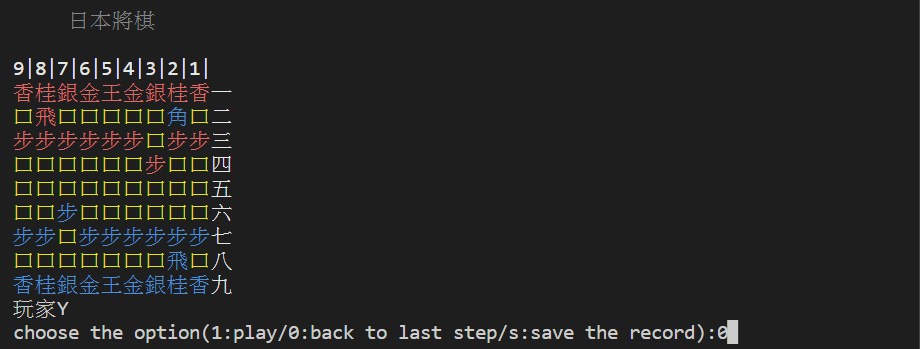
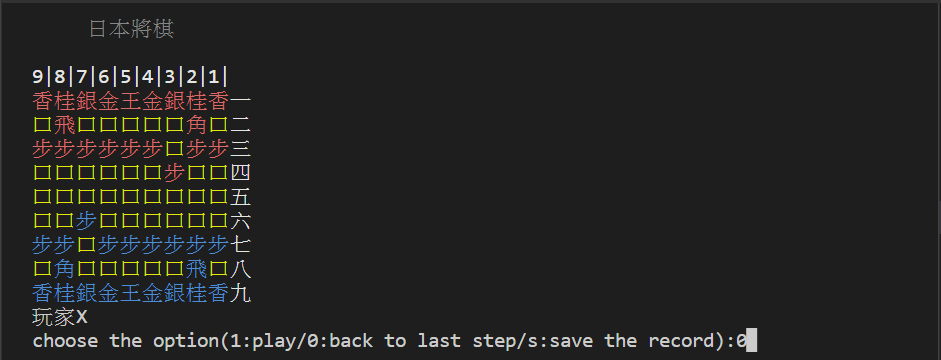


Figure 9: Y player enters 0 to go back to the last step

 Figure 10: X player enters 0 to go back to the last step

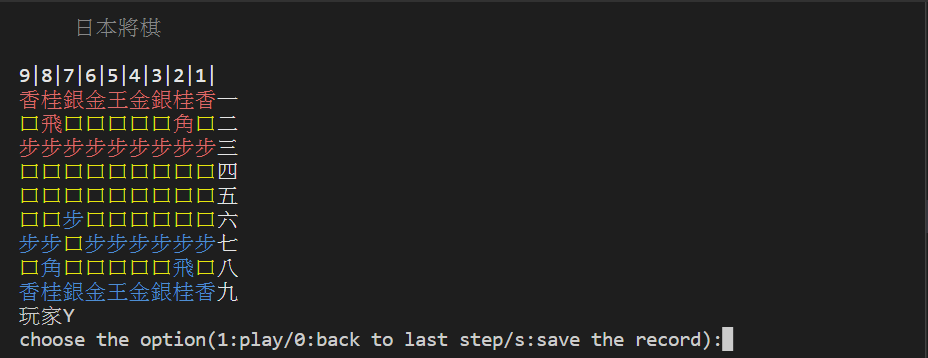


Figure 11: Pawn of Y player returns to initial place



Figure 12: X player wins the game



Figure 13: X player loses the game

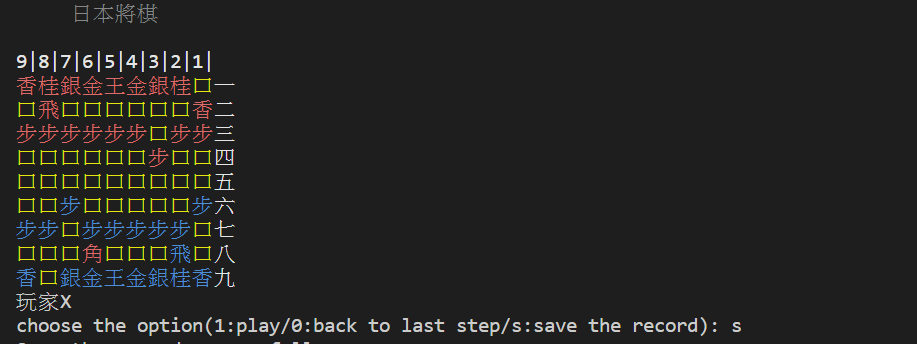


Figure 14: Once we input s , the record would be saved

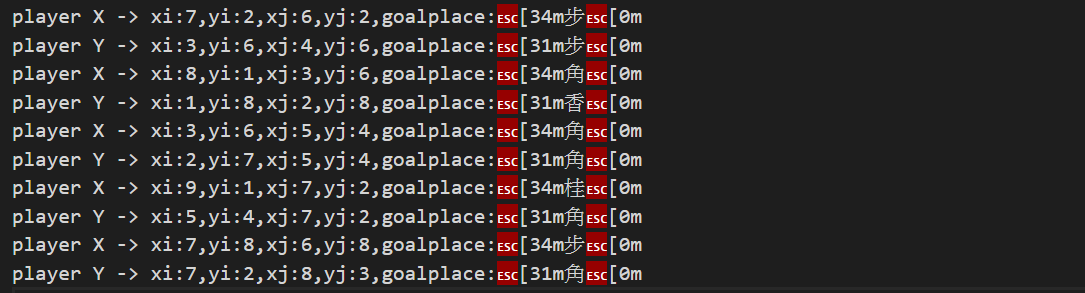


Figure 15: The record would be printed on [record.txt]

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Figure 16: If input 'y', the shogi will be promotion

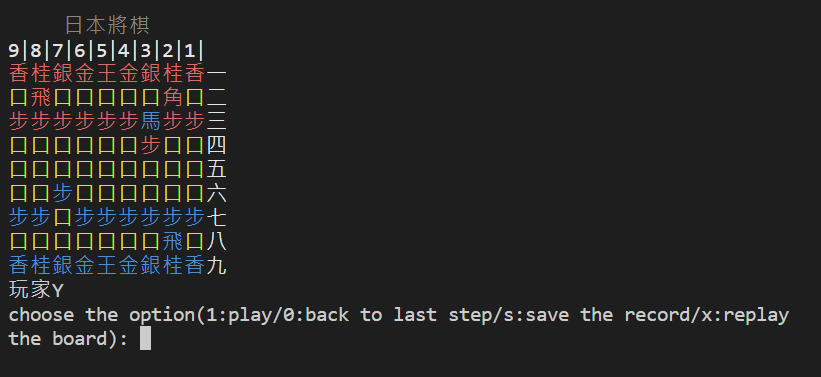
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Figure 17: “龍馬”is the promotion of “角”

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Figure 18: “If input 'y', the shogi will be promotion

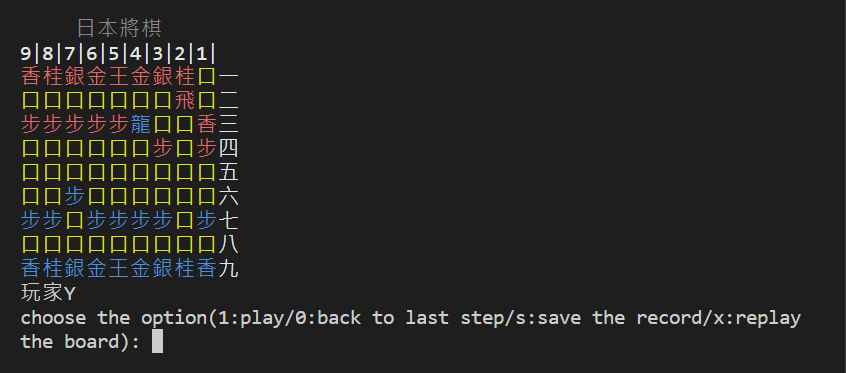
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Figure 19: “龍王”is the promotion of “飛”

**<將棋棋子規則>**

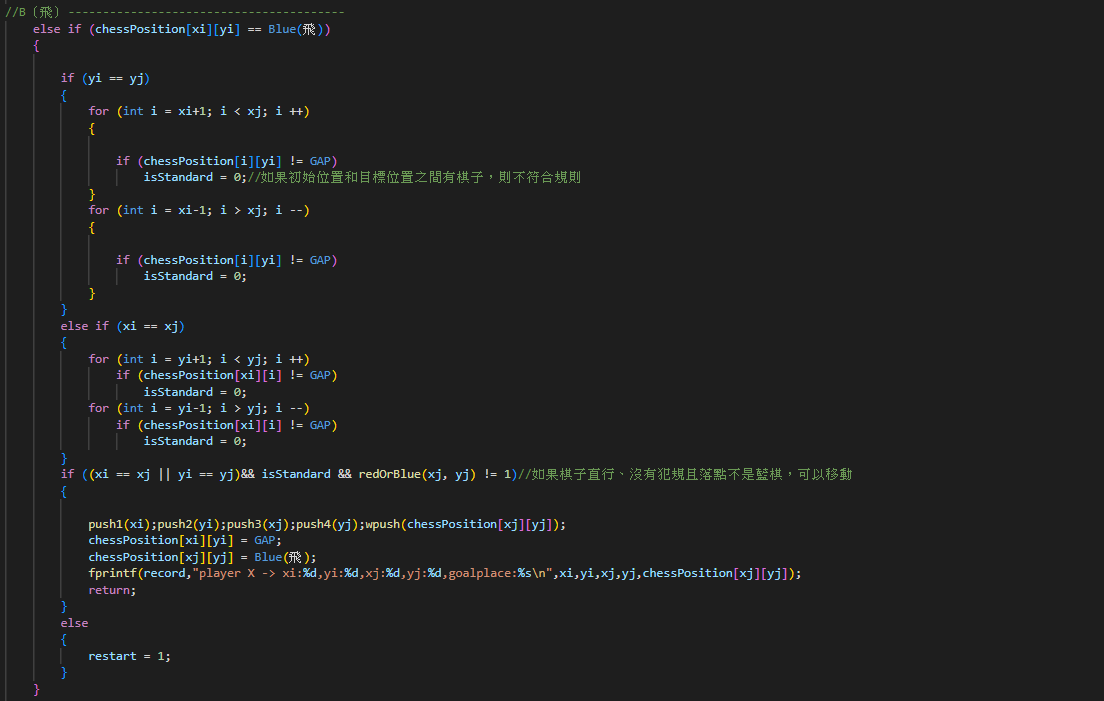
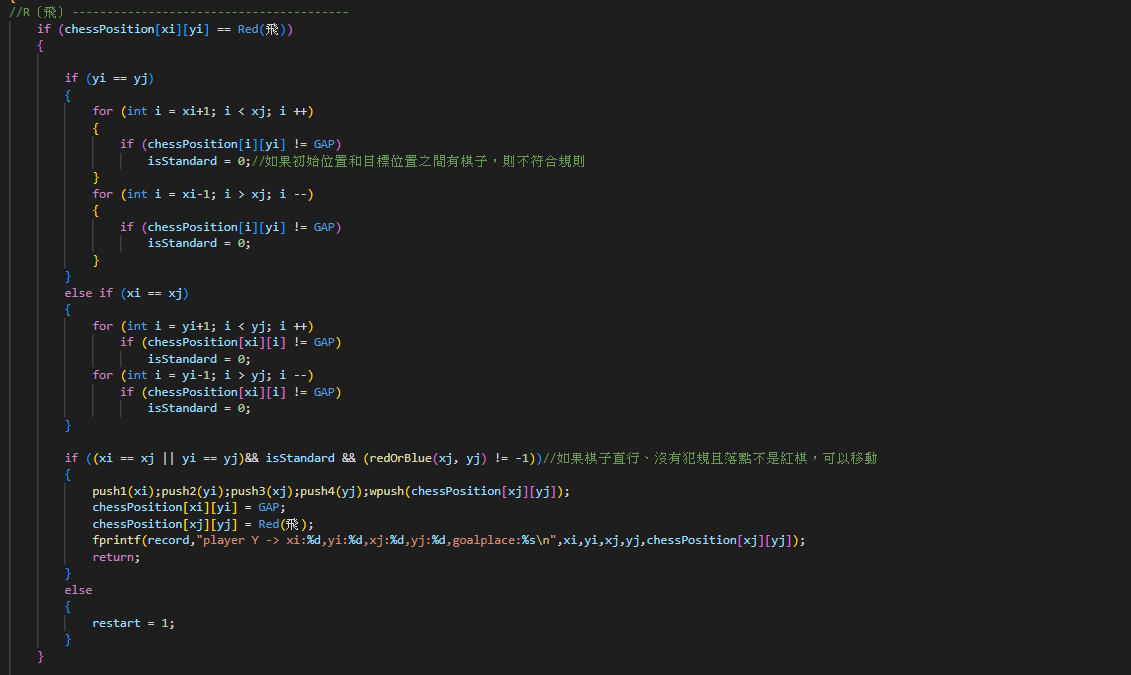
 

Figure 20: [飛] 可到上下左右的任何1格

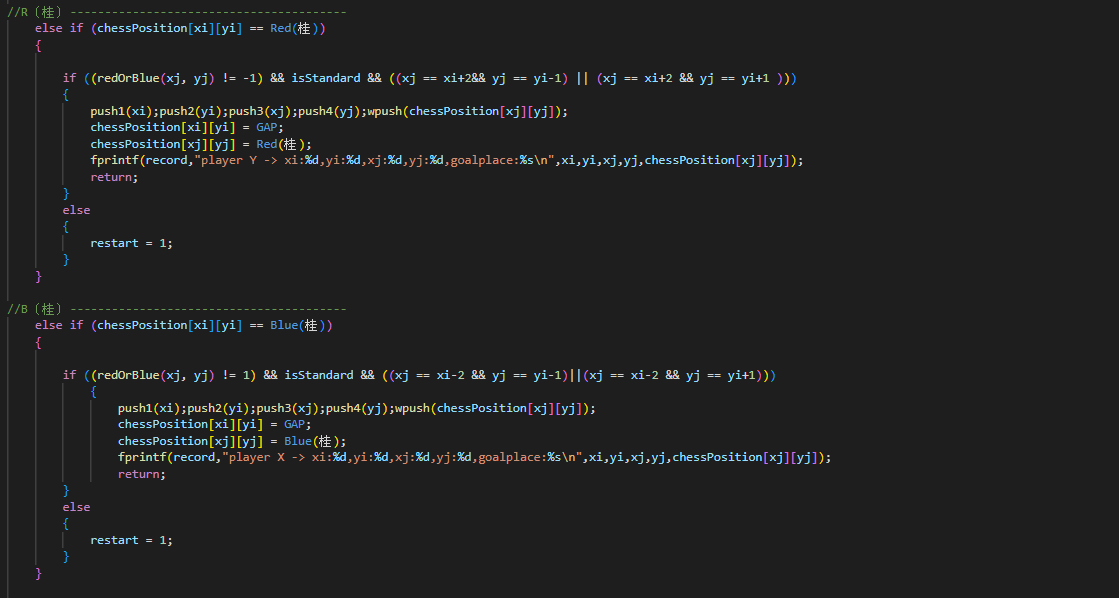


Figure 21: [桂] 每次走右上格或左上格對上之1格

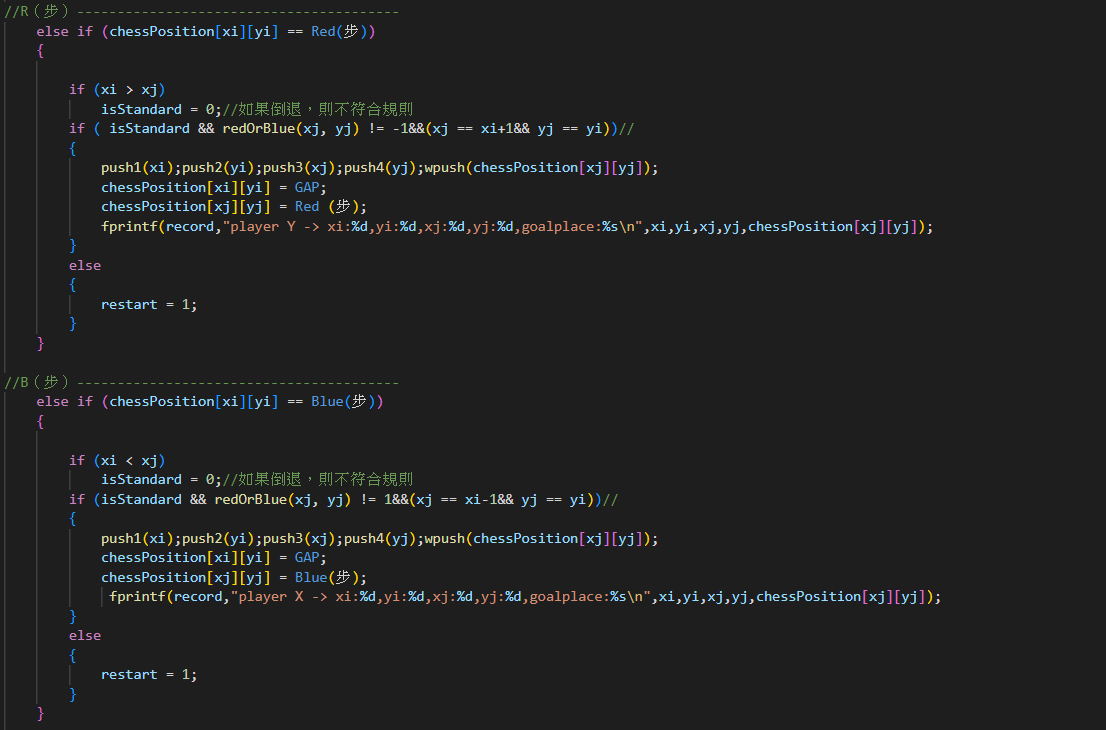
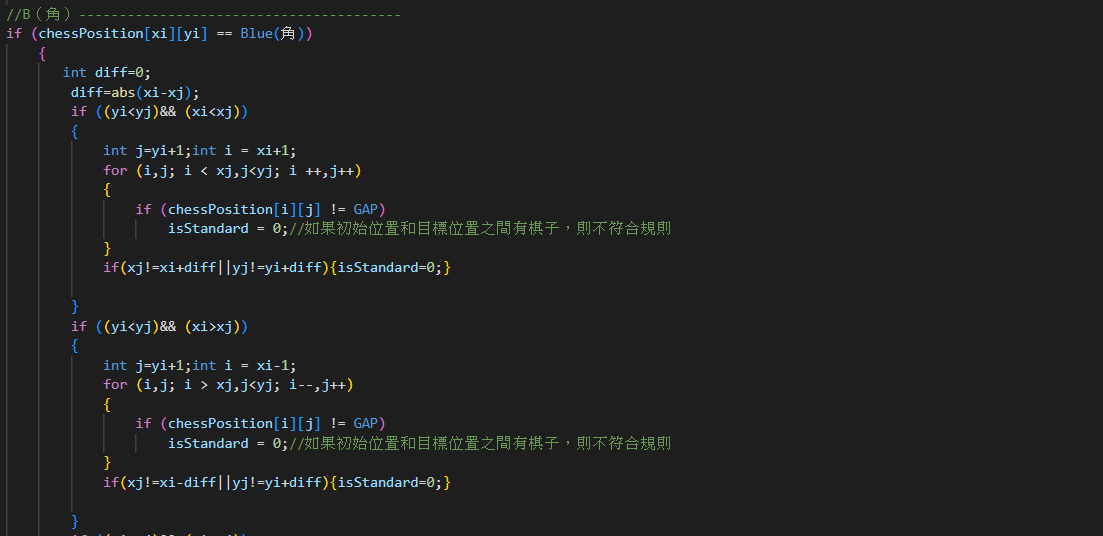


Figure 22: [步] 每次只可向前1格，不能後退



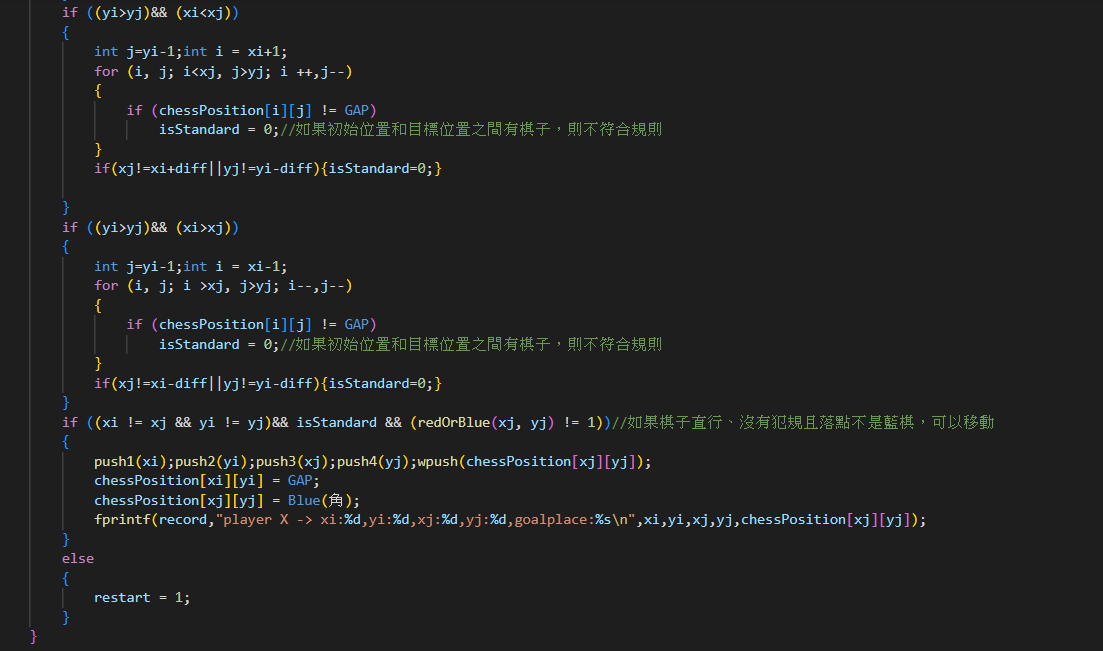


Figure 23: [角] 每次可到對角的任何1格(英文字母「X」方向)

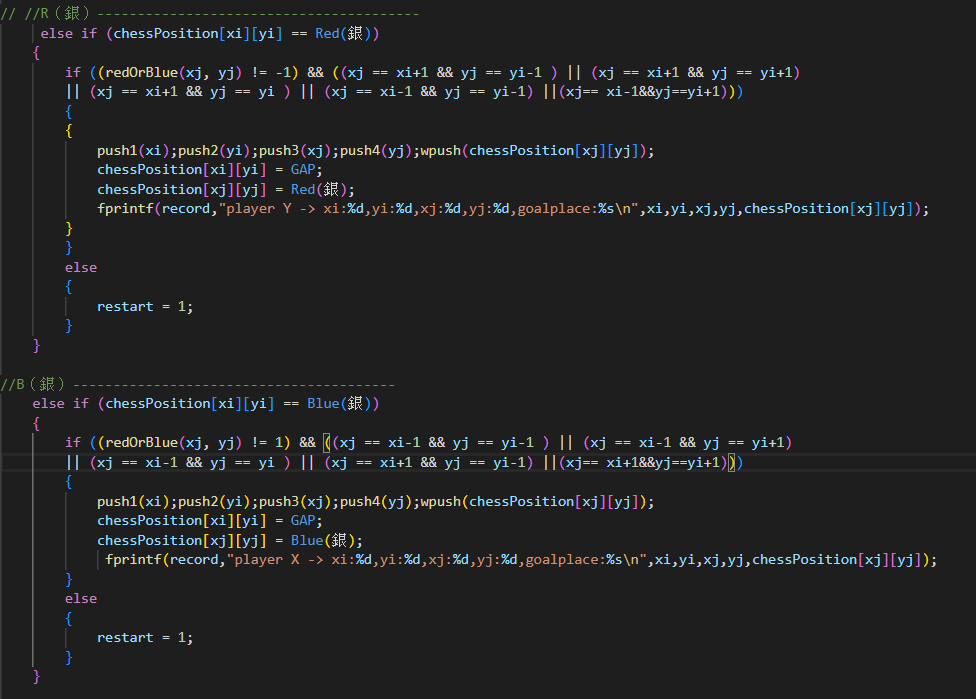


Figure 24: [銀] 每次走前面、右上、右下、左上、左下1格

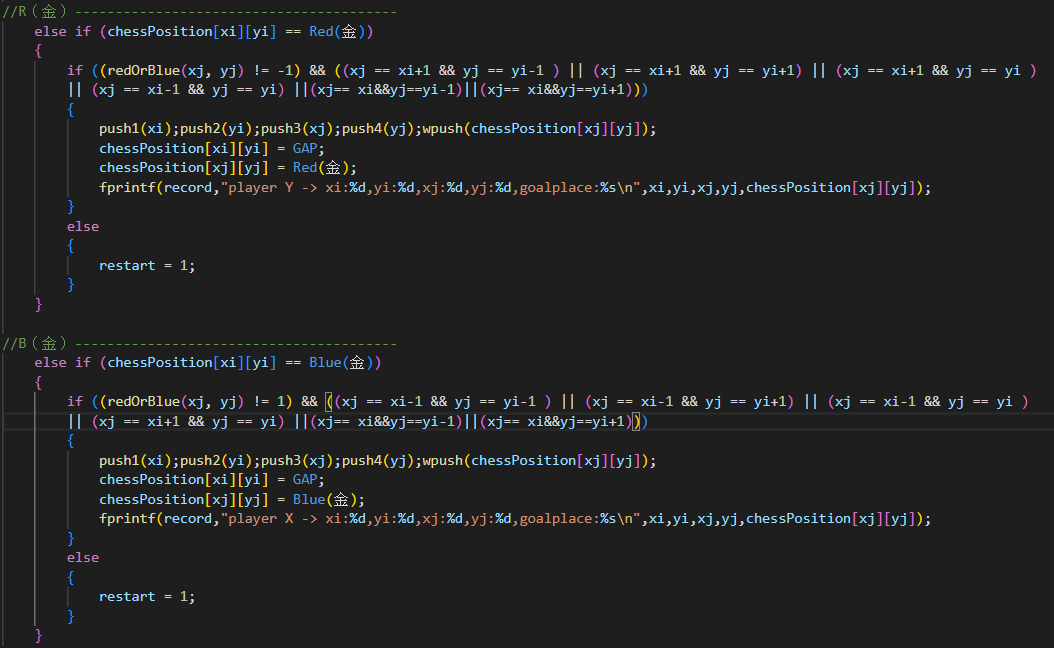


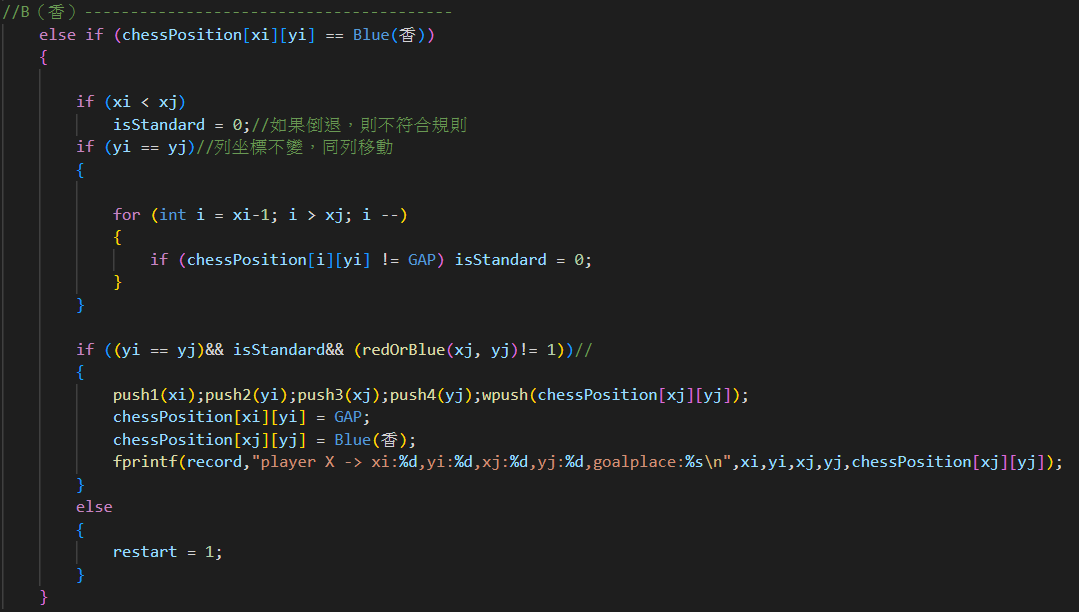
Figure 25: [金] 每次走前面、右上、右面、左上、左面、下面1格

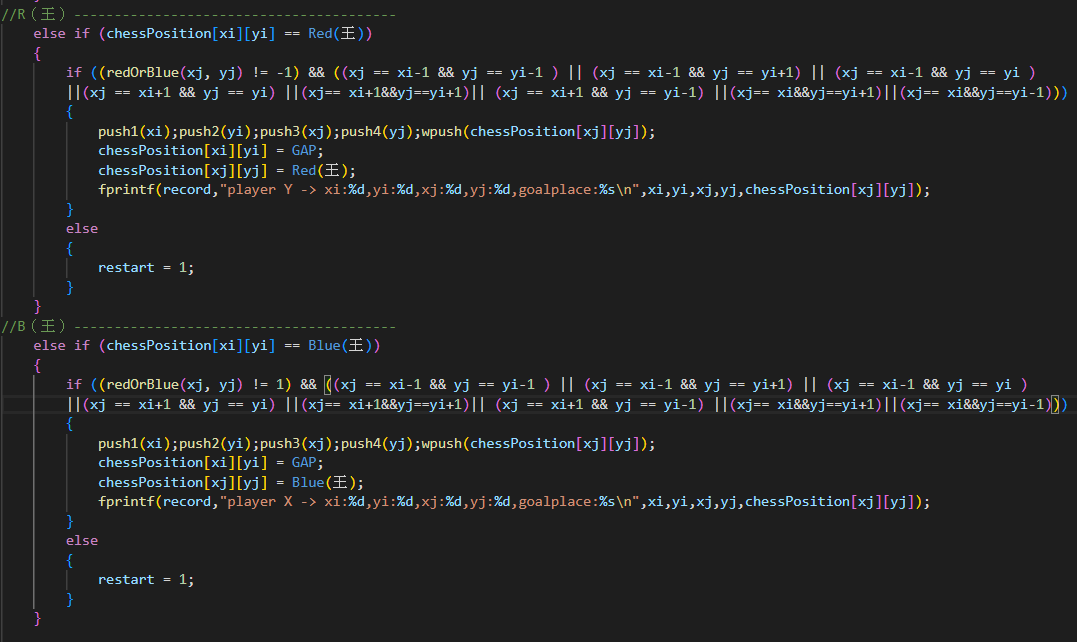
Figure 26: [香] 每次可向前行任1格，但不能後退

Figure 27: [王] 向前面、右上、右面、右下、左上、左面、左下、下面1格

**3.規則**

當使用者輸入1，可以決定下一步的位置，(先輸入[段(行)]的數值，再輸入[筋(列)]的數值) 確定要移動的棋子後，在決定放置的位置。如果輸入錯誤，會顯示違反遊戲規則，使用者需要再輸入一次(1/0/s) 。 若使用者輸入0，可進行悔棋。悔棋可連續執行，直到回到第一手。當一方進入另外一方前三排的領地，除了王將 (玉將) 、金將及已經升級的棋子外，所有棋子都可以選擇是否升變。輸入s會儲存從頭到此的下棋資料到record.txt。若其中一方將對方的王吃掉，遊戲即結束。

**4.參考資料**

(1) https://markdown.tw/

(2) <https://shogi.hk/Gameplay-of-Japanese-Chess-Shogi/>

(3) <https://lakesd6531.pixnet.net/blog/post/332858496-%5B%E8%B3%87%E6%96%99%E7%B5%90%E6%A7%8B%5D%E7%94%A8c%E8%AA%9E%E8%A8%80%E8%A3%BD%E4%BD%9C%E5%A0%86%E7%96%8A%28stack%29>

(4) <https://www.delftstack.com/zh-tw/howto/c/read-file-c/>

**5. GITHUB連結**

<https://github.com/NCU-DSA-111-1/assignment_2-yayi1213/tree/main/110503507_assignment_3_linked%20list>