



**PROGRAMMING CONCEPTS**  
( INTE 11223 )



# **REVERSI** **REPORT**

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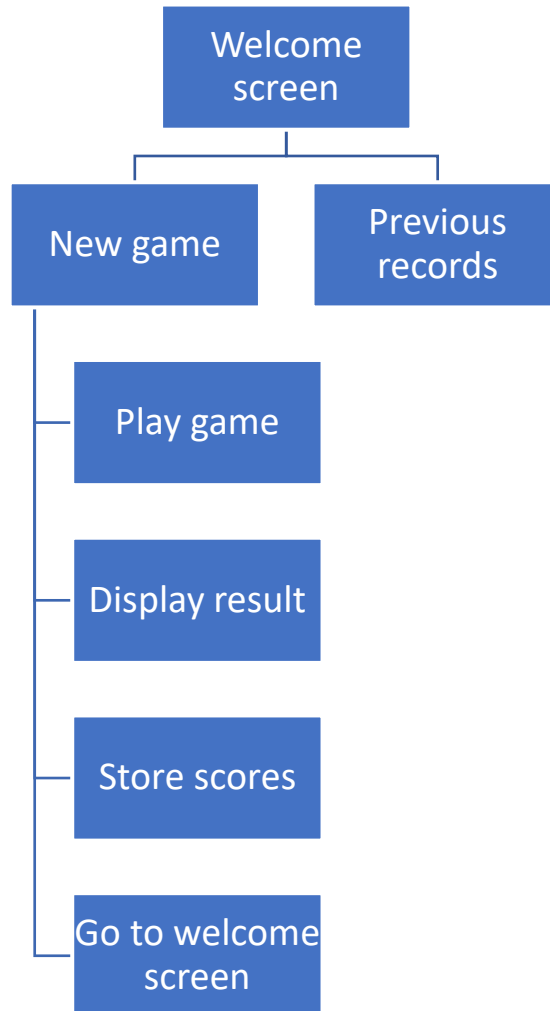
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## 1) BASIC DOCUMENTATION

- Design



*Figure 1*

- **Outflanking logics**

Flow of West Outflanking  
Check

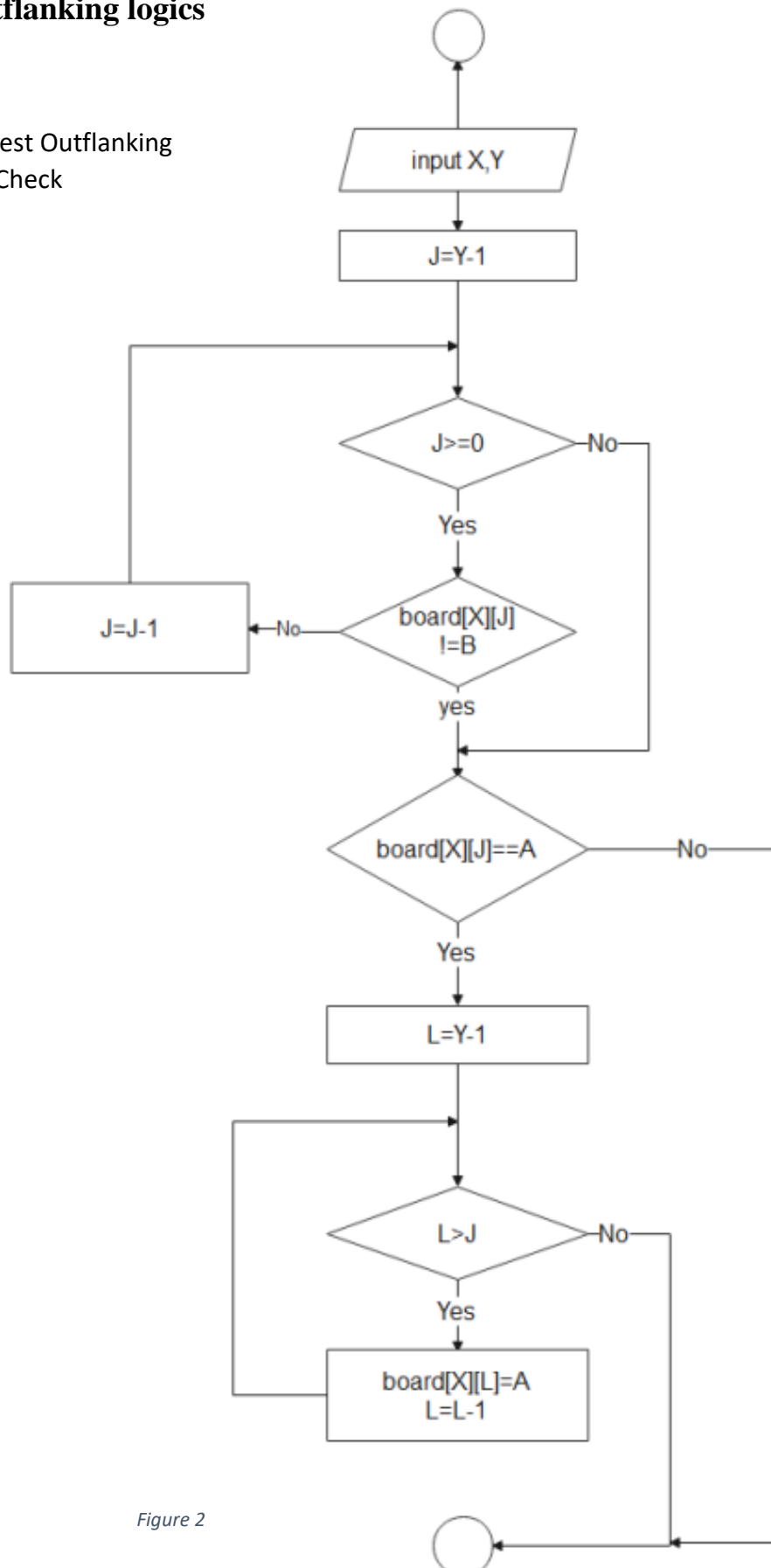


Figure 2

# Flow of Northwest Outflanking Check

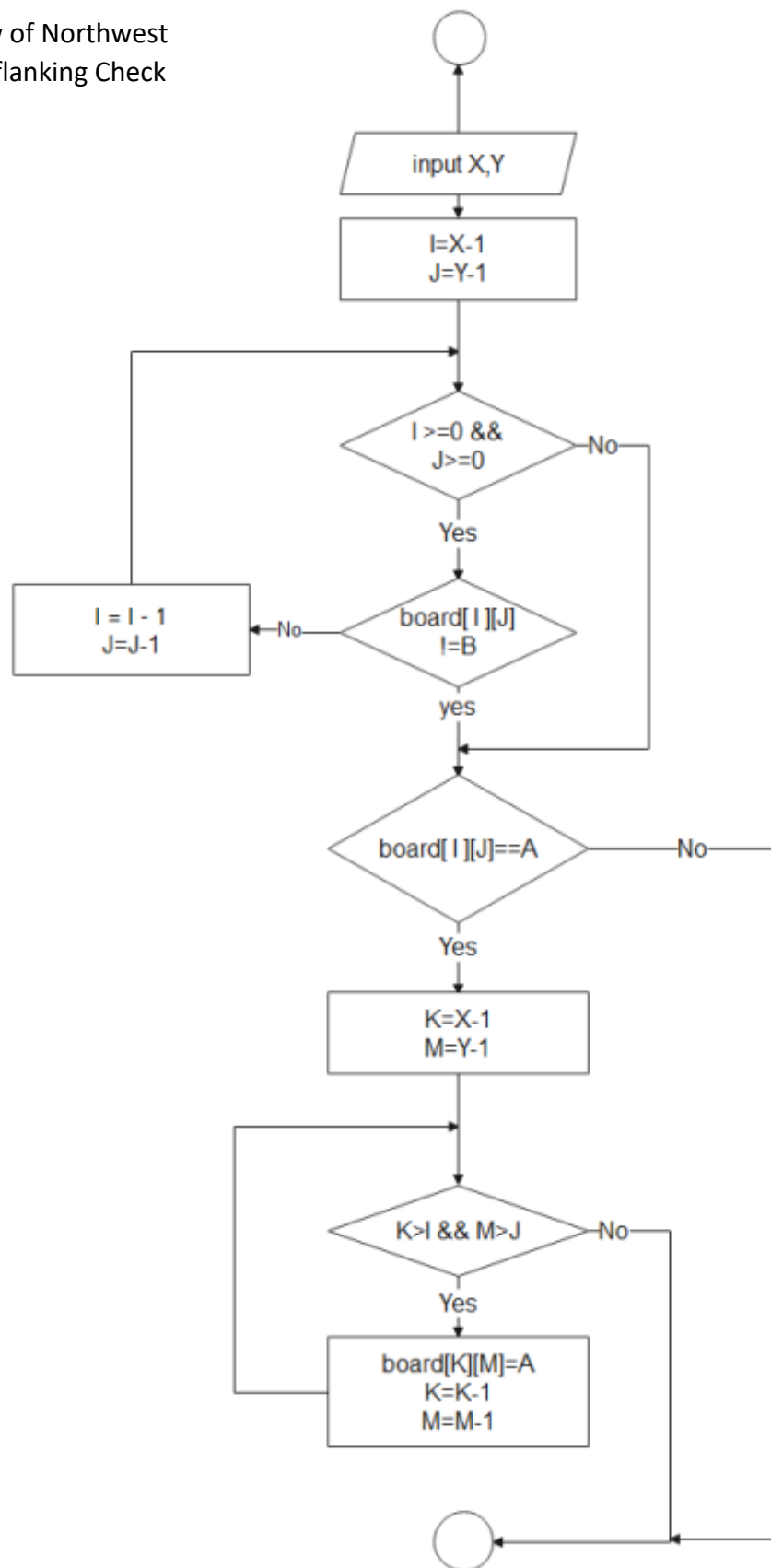


Figure 3

## 2) USER MANUAL

### Introduction

Reversi is an online strategy board game played by two players at the same time on an 8\*8 board.

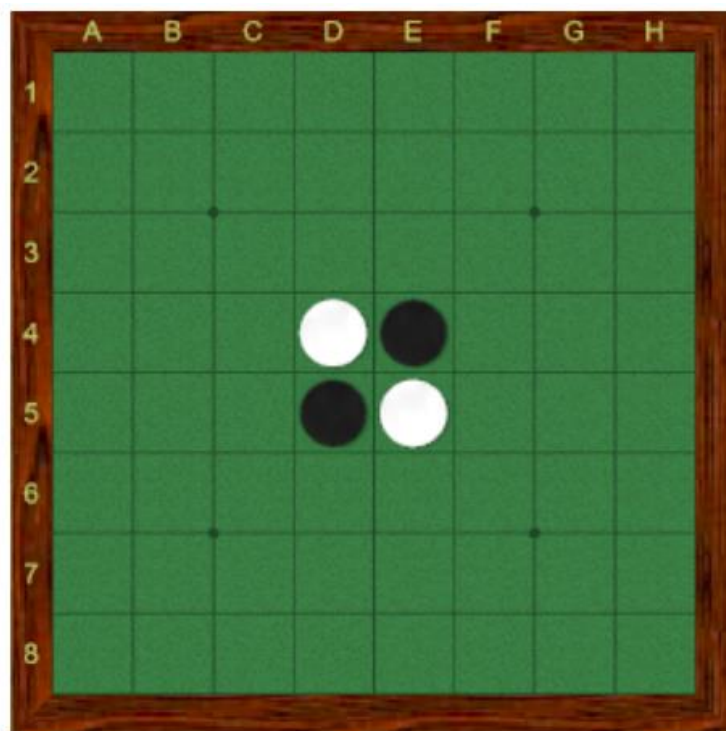
The four places in the middle of the board start with four tiles (two of each) already placed.

### Rule 1

Each player takes 32 discs and chooses one colour to use throughout the game.

Black always moves first

Black places two black discs and White places two white discs as shown in Figure 4.



*Figure 4* The game always begins with this setup.

## **Rule 2**

A move consists of "outflanking" your opponent's disc(s), then flipping the outflanked disc(s) to your color.

To outflank means to place a disc on the board so that your opponent's row (or rows) of the disc(s) is bordered at each end by a disc of your color. (A "row" may be made up of one or more discs).

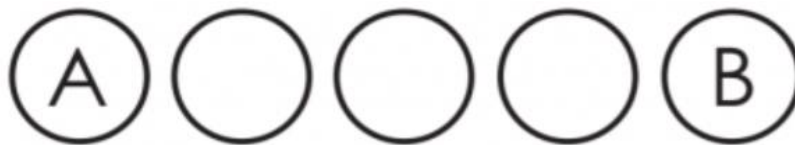
Here's one example:



*Figure 5*

White disc A was already in place on the board. The placement of white disc B outflanks the row of three black discs.

White flips the outflanked discs and now the row looks like this:



*Figure 6*



## How to play game

- Since our game is using tokens instead of colours, each player is required to choose a token at the beginning of each game.

Players want to enter the name and choose their token.



Figure 7

Player 1 starts the game.

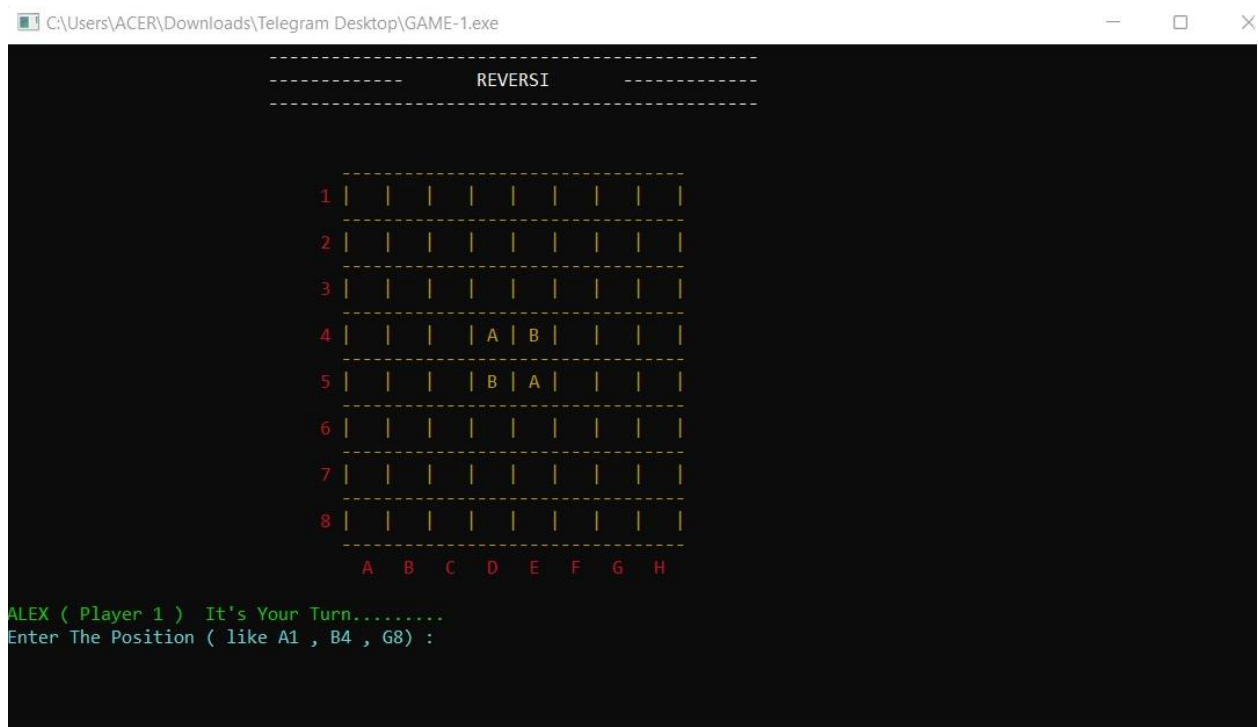


Figure 8



Figure 9

Then player 2 plays his turn.



Figure 10

When player 1 places their token in space, the game code checks in 8 directions.

If there are player 2's tokens in-between player 1's tokens game code will change player 2's tokens into player 1's.



Figure 11

Players can't skip over their chance. This will continue until the board fills.

When it is no longer possible for either player to move, the game is over.

Tokens are counted and the player with most of their tokens showing is the winner.



Figure 12

If Choose Score Board than, Previous scores will be shown...



A screenshot of a Windows application window titled "C:\Users\ACER\Desktop\Reversi - Game project\GAME-1 FINAL FINAL.exe". The window has a grey background and red text. At the top, the word "REVERSI" is centered between two dashed lines. Below it, "WELCOME!!!!" is displayed. The menu options are listed: "Start New Game Press 1", "View Score Board Press 2", and "Exit the Game Press 3". The user's choice is shown as "Enter Your Choice : 2". Below this, a dashed line separates the header from the "Score Board". The text "ALEX has won by 18" is displayed. At the bottom, it says "Enter 0 to Goto Manu :".

```
----- REVERSI -----  
  
WELCOME!!!!  
  
Start New Game Press 1  
View Score Board Press 2  
Exit the Game Press 3  
  
Enter Your Choice : 2  
  
----- Score Board -----  
  
ALEX has won by 18  
  
Enter 0 to Goto Manu :
```

Figure 13

If Choose exit than, Game will stop.



A screenshot of the same Windows application window. The menu options are the same, but the user's choice is now "Enter Your Choice : 3". Below this, the text "Good Bye" is displayed. A dashed line separates the header from the exit message. The text "Process exited after 38.53 seconds with return value 0" is displayed, followed by "Press any key to continue . . .".

```
----- REVERSI -----  
  
WELCOME!!!!  
  
Start New Game Press 1  
View Score Board Press 2  
Exit the Game Press 3  
  
Enter Your Choice : 3  
  
Good Bye  
-----  
Process exited after 38.53 seconds with return value 0  
Press any key to continue . . .
```

Figure 14

### **3) CHALLENGES AND SOLUTIONS**

**Challenge 1:** Lack of knowledge in game's rules.

**Solution:** Referring to the articles and videos related to Reversi game from internet.

**Challenge 2:** Understanding the logic of outflanking.

**Solution:** Played the game manually and consider all possible outflanking to understand the logic.

**Challenge 3:** Developing interface.

**Solution:** Tokens are used to represent the tile (black and white tile) and instead of clicking on the cell, we get the cell values as inputs. Through this we designed a simple console interface.

**Challenge 4:** Displaying the updated board.

**Solution:** Since it was hard to navigate in the console screen and print the new tokens in the respective cells in the board, we clear the screen and display it again after each move.

#### **4) WHAT WOULD WE HAVE DONE DIFFERENTLY IF WE COULD DO IT AGAIN...**

- Modify the interface graphically.
- Introduce computerized player (single player game).
- Save and resume the game in halfway.
- Undo & redo option.

## 5) **TEAM MEMBERS**

- ❖ Ahamed Zaljey - IM/2019/047
- ❖ Fathima Hafsa - IM/2019/042
- ❖ Fathima Riztha - IM/2019/031
- ❖ Zamith Ahamed - IM/2019/016

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